REV-00

SELF-LEARNING MATERIAL

UNIVERSITY OF SCIENCE & TECHNOLOGY MEGHALAYA

Unveiling Excellence

MA EDUCATION

MAE 102: METHODS AND TECHNIQUES OF TEACHING

w.e.f Academic Session: 2023-24

CENTRE FOR DISTANCE AND ONLINE EDUCATION

UNIVERSITY OF SCIENCE & TECHNOLOGY MEGHALAYA

nirf India Ranking-2023 (151-200)

Accredited 'A' Grade by NAAC

Techno City, 9th Mile, Baridua, Ri-Bhoi, Meghalaya, 793101

SELF-LEARNING MATERIAL

MA Education

MAE-102

METHODS AND TECHNIQUES OF TEACHING

Academic Session : 2023-24

Centre for Distance and Online Education

UNIVERSITY OF SCIENCE & TECHNOLOGY MEGHALAYA

Accredited 'A' Grade by NAAC

Self Learning Material
Center for Distance and Online Education
University of Science and Technology Meghalaya

First Edition
Print Jan 2024

Edited by: Ms. Sarmistha Choudhury

This book is a distance education module comprising of collection of learning material for students of Center for Distance and Online Education, University of Science and Technology Meghalaya, 9th Mile G S Rd, Ri Bhoi, Meghalaya 793101.

Printed and Published on behalf of Center for Distance and Online Education, University of Science and Technology Meghalaya by Publication Cell, University of Science and Technology Meghalaya – 793101

EDU 102: Methods and Techniques of Teaching

Objective: This course enables the students to understand various teaching methods and maxims to develop teaching skills.

Course Outcomes:

CO1: The students are able to understand various teaching methods and maxims.

CO2: The students develop teaching skills.

CO3: The students are able to prepare lesson plans for Social Studies, General Science, Mathematics and English.

CO4: The students understand behavioural objectives in educational context.

CO5: The students will prepare teaching aids for motivating the students in the classroom transaction.

Unit 1: Teaching-learning process:

- Concept and nature of teaching-learning process.
- Principles of teaching and learning Process.
- Teaching Technique- Maxims of teaching
- Marks of good teaching and learning.

Unit 2: Taxonomy of educational objectives:

- Taxonomy of Educational Objectives.
- Blooms Taxonomy
- Revisions of Blooms Taxonomy
- Implication of Cognitive, Affective and Psychomotor Domain in Educational process.

Unit 3: Teaching Technique, Methods and Style:

- Meaning and concept of methods and techniques of teaching.
- Teaching Device- explanation, questioning, illustration and teaching aids
- Styles of teaching - Autocratic style: lecture, demonstration, tutorial and team teaching.

- Permissive style: brain storming, group discussion, panel discussion, project, seminar, workshop and symposium.
- Teaching techniques and skills – Micro teaching.

Unit 4: Classroom transaction:

- Developing lesson plan.
- Herbartian steps of lesson planning
- Developing teaching aids
- Methods of teaching different subjects – social science, mathematics, science, language

1. Concept and Nature of Teaching

Teaching is a familiar term to all of us. Although the term is generally associated with the schooling process, but one can find the act of teaching in many places. In the family, parents teach children many things about good habits right from the childhood. In the neighbourhood, elders teach children many things related to community living. In schools, teachers teach students not only different subjects, but also many things which are essential to be good citizens and lead a productive social life. Teaching taking place in family and neighbourhood may not be organized, whereas teaching provided in schools is well organized with pre-determined objectives. As a teacher, you may be engaged in organizing many activities which take place within and outside the classroom. Inside the class you may be delivering lectures, giving demonstrations, explaining concepts, conducting experiments, narrating stories, reciting poems, conducting role-plays, etc. Similarly, outside the classroom, you may be taking students for fieldworks, organizing sports activities, organizing exhibitions, etc. Do all these activities being performed by you constitute teaching? What does then teaching mean pedagogically? What is its nature? Answers to these questions are being discussed in the coming sub-sections.

1.3.1 Concept of Teaching

As a teacher, you may teach, train or instruct others. All these refer to the processes meant for bringing about changes in the cognitive structure (structure of knowledge in one's mind) in those who are being taught. However, they differ significantly in their meanings. Training involves preparing someone to do a job. It describes learning that takes many years to complete. Training involves a relatively systematic attempt to transfer knowledge and skills from one who knows to some one who does not know. Instruction, on the other hand, although often used synonymously with teaching, it has more to do with the development of skills rather than education in a broader sense. Unlike training and instruction, teaching refers to the actions of someone who is trying to assist others to reach their fullest potential in all aspects of development. It involves physical, mental, emotional, social, moral, and spiritual development of learners. Teaching is a process of attempting to promote changes in the learners. As noted, although training, instruction and teaching differ in their meanings, the central process that runs through all of them is learning.

As noted above, teaching refers to the actions of someone who is trying to assist others to reach their fullest potential in all aspects of development. Teaching would result when the teacher indulges in any activity with the intention that pupils would learn something as a consequence of it. For example, when a teacher explains to her/his pupils a scientific principle, a procedure for solving an arithmetic problem or a technique to memorise a chemical formula, learning occurs through the process of teaching. she/he anticipates that her/his pupils would learn the principle, procedure or technique, and teaching would occur. Teaching also would result when the teacher prescribes tasks such as reading a passage, writing of a composition for pupils to engage in for the purpose of learning. Thus, in either case, be it directly through the face – to – face interaction or indirectly from the books, films or instructional programmes, teaching can occur. However, when we think of teaching, we generally have in mind the teacher-student interaction in the classroom.

As compared to teaching, instruction is a much broader concept. Instruction subsumes both teaching and classroom management. They are so well integrated that it is difficult to differentiate one from the other. A question that the teacher puts across the class, for example, is an act of teaching, while restricting its answer to a single student and avoiding confusion in the class is part of management. Similarly, recognizing pupil attention behaviour, gaining maximum pupil involvement, managing deviant behaviour, recognizing pupil needs, displaying enthusiasm, etc that occur along with the teaching, are all part of classroom management. Quality instruction involves efficient and effective use of both management techniques and teaching methods. So teaching and classroom management go so hand – in – hand, that it is difficult to separate one from the other. By now, we have attempted to describe the concept of teaching. Now let us look at the nature of teaching. ature of Teaching

As we have already seen, teaching is a process that involves a series of actions leading to certain outcomes. Teaching, like any other concept, involves certain characteristics. We highlight some of the important characteristics of teaching inthe forthcoming sub-sections:

i) Teaching is both Science and Art

Teaching, as a process, has characteristics of both art and science. It is a practical art and not a fine art aimed at creating beauty for its own sake. Itrequires improvisation, spontaneity, handling of hosts of considerations of form, style, pace, rhythm, and appropriateness that even computers fall behind. Effective teachers have natural instincts for teaching. It is these instincts that make their teaching unique. Good teaching, apart from being a creative art, is also a science that requires a good understanding of principlesof teaching and a deep knowledge of the subject matter. It also offers specificmethods and skills that are attainable. As a result, good teachers are able totransform knowledge into learning activities that motivate students to learn.

ii) Teaching is Complex

Teaching uses all sorts of techniques, methods, and media. Teaching makes use of various techniques or skills such as questioning, probing, exemplifying, etc. It also makes use of various methods or models of teaching dependingupon the nature of the content

being taught, objectives to be accomplished, and readiness of the learners to learn. Teaching also makes use of such media as audio-visual media, human interaction media, print media, realia, electronic media, etc. Success in teaching, to a great extent, depends upon selection and use of appropriate techniques, methods, and media.

iii) Teaching Visualizes Change in Behavior

As teachers when we teach, we have some expectations as to what changes would happen in the behaviour of the learners. These changes can be in the cognitive (knowledge) , psycho-motor (skills), and affective (attitudes) values of the learners. The changes that take place in the behaviour of learners as a result of learning should be tentatively permanent. The changes that occur in learners need not be performative but be potential ability of the learners.

iv) Teaching can be Direct or Indirect

While teaching, teachers may resort to either direct or indirect ways of teaching. As the teachers use such methods as lecture, demonstration, etc and engages students in face – to – face interaction, they are teaching them directly. Conversely, when they use active methods like role-play, project, assignment, inquiry or other such activities, they are teaching them indirectly. As teachers, we ought to know that teaching them indirectly is a better way of teaching as compared to teaching them directly. In indirect ways of teaching, students are at the centre. As a result, they are actively involved in the process of learning. This gives them chances for better understanding which leads to greater retention.

v) Teaching can be Vertical or Horizontal

Depending on the objectives of teaching, teachers may lead students deep into the topic. They not only help students know and understand the topic but teach them higher order thinking skills like analysis, synthesis, evaluation and creating. This type of teaching is known as vertical teaching. Conversely, if the teachers teach one topic and then move on to more and more topics, they are resorting to horizontal teaching. In that case, their teaching covers more areas spreading over several topics instead of going deeper into one topic.

vi) Teaching may be Planned or Unplanned

Traditionally, teachers plan for instruction before they go to the classroom for teaching. In the beginning of the academic year, they resort to yearly planning in which different units in the textbook are distributed judiciously throughout the year. Thereafter, they take up each unit, subject it to content analysis, task analysis, decide the techniques and methods to be used for teaching. Then they decide the ways of evaluation. However, with the coming of active leaning methods, no strict planning is possible as one is not clear in advance what could be the possible way of organizing teaching learning activities.

By now, we have discussed what teaching is and what its main characteristics are. This awareness about teaching and its nature would help us in a big way in handling teaching in a better manner. Now you can assess yourself as to what you have learned.

Maxims of Teaching

Maxims of Teaching

The different maxims of teaching are briefly explained belop

The different maxims of teaching are briefly explained below. The teacher should always proceed keeping them in view.

1. **From known to unknown:-**

When a child enters into school, he possess some knowledge and it is the duty of teacher to enlarge his previous knowledge . Whatever he possesses should be linked with the new knowledge. If we link new knowledge with the old knowledge our teaching becomes clearer and more definite.

This maxim facilitates the learning process and economses the efforts of the teacher and the taught. For example is teaching English to the children and he is to teach the word 'water'. He reminds them the Kashmiri word 'Aab' which they already know and then tells them that in English we say 'water'. This way of teaching helps the learners to understand things fully. This way the teaching becomes definite, clearer and more fruitful.

2. **From simple to complex:-**

The main objective of teaching is to teacher and the learners objective is to learn something. In this process of teaching and learning, simple or easy things should be first presented to the students and gradually he should proceed towards complex or difficult things. The presentation of simple material makes the learners interested, confident and feel encouraged. As they will show interest towards the simple material, they becomes receptive to the complex matter. On the other hand, if complex matter is presented first, the learner becomes upset, feel bored and finds himself in a challenging situation. For example in mathematics we first present the idea of +, - , x and then division.

When the child gets admitted to 9th and 10th class we introduce algebra, surds, trigonometry, geometry etc. As he proceeds further he becomes familiar with the complex material like

matrices, integration, differentiation etc. In this way a learner shows interest by proceeding from simple mathematics to complex one. But if we reverse the situation, he will find himself in a challenging situation and will left his studies due to complexity of matter. Simplicity or complexity of the subject matter should be determined according to the view point of the learners. It makes learning convenient and interesting for the students.

3. From concrete to abstract:-

Concrete things are solid things and they can be visualized but abstract things are only imaginative things. The child understands more easily when taught through their senses and never forget that material. On the other hand if abstract things or ideas are presented, they forget it soon. As **Froebel** said, "Our lessons ought to start in the concrete and end in the abstract". For example when we teach the solar system, we first visualize the sun through our senses and gives the concept of eight planets, galaxies, meteorites etc. Through this process, the learners understand the materials more easily. Some power of imagination also develops in them .But if we reverse the situation, it will become difficult for learners to understand anything. Another example, when we teach counting to the students we should first take the help of concrete objects like beads, stones etc. and then proceed to digits and numbers.

4. From analysis to synthesis:-

When we divide a thing into easy parts or separate elements in order to understand it easily is called analysis. It is the process which helps in understanding the hidden elements of a thing or the cause of some incident or behavior. For instance, in order to tell about the structure or functions of heart, the parts of the heart are shown separately and knowledge of every part is given. After it the students are made to understand the structure or system of working of the heart. In this way, even a very difficult thing can be easily understood. Synthesis is just opposite of analysis. All parts are shown as a whole. The process of analysis is easier than synthesis for understanding a thing. This process develops the analytical power of the students. It is the best method of starting the teaching process. For example while teaching digestive system, we should first analyse the different parts of digestive system one by one and then gives the synthetic view of it. Hence a good teacher always proceeds from analysis to synthesis.

5. From particular to general:-

A teacher should always proceed from particular to general statements. General facts, principles and ideas are difficult to understand and hence the teacher should always first present particular things and then lead to general things. Suppose the teacher is teaching continuous tense while teaching English, he should first of all give few examples and then on the basis of those make them generalize that this tense is used to denote an action that is going on at the time of speaking. Hence a teacher should proceed from particular to general.

6. From empirical to rational:-

Empirical knowledge is that which is based on observation and first and experience about which no reasoning is needed at all. It is concrete, particular and simple. We can feel and experience it. On the other hand rational knowledge is based upon arguments and explanations. For example suppose the students are to be taught that water boils on heating. They should first be made to heat the water and see it boiling. Then the teacher should explain that when water is heated, the molecules gain kinetic energy and there is thermal agitation of the molecules which make the water boil. This maxim is an extension of some of the previous maxims, namely proceed from simple to complex proceed from concrete to abstract and from particular to general.

7. From induction to deduction:-

The process of deriving general laws, rules or formulae from particular examples is called induction. In it if a statement is true in a special situation, it will also be true in other similar situations. It means drawing a conclusion from set of examples. For example when hydrogen reacts with boron, it gives Boron hydride, potassium reacts hydrogen, it gives potassium hydride, we come to the conclusion that all elements when reacts with hydrogen they from hydrides. While using this process in teaching, a teacher has to present particular examples or experiences and tell about similarity of their attributes. Deduction is just opposite of induction. In it, we derive a certain particular conclusion from general laws, rules or principles. For example in language teaching, before giving the definition of noun, the students are acquainted with the example of noun like man, chair, Delhi etc and then they are led to general definition of noun. So a good teacher always proceeds from induction and finishes at deduction.

8. From psychological to logical:-

Modern education gives more emphases on psychology of the child. The child`s psychological development is of utmost important than any other thing. A teacher while teaching should follow this maxim viz from psychological to logical. Psychological approach takes into consideration the pupil his interests, abilities, aptitudes, development level, needs and reactions. The teacher should keep in mind the psychological selection of the subject matter to be presented before the pupils. Logical approach considers the arrangement of the chosen content into logical order and steps. It is child cantered maximum. For example a teacher tells the story of a poem to students when they are not interested in reading, with this a teacher proceeds from psychological to logical sequence.

9. From Actual to Representative:

First hand experiences makes learning more vivid and efficient than to give them representative ones. A teacher while selecting the content for presentation should make all efforts possible to present it through actual, natural or real objects than from their improvised representative one's like pictures, models etc. For example to teach about 'Golden Temple Amritsar', a teacher should try his best to visit the actual place and that learning will be more vivid and the pupils will retain it for a long time inspite of teaching through sketches, model or a picture. Representative forms should be used at the higher classes than in lower classes.

10. From Whole to Parts:

This maxim is the offshoot of gestalt theory of learning whose main emphasis was to perceive things or objects as whole and not in the form of parts. Whole is more understandable, motivating and effective than the parts. In teaching, the teacher should first give a synoptic view of lesson and then analyze it into different parts. For example the teacher while teaching the pollination in plants, he should first take the flower then analyze it into different parts and give detailed information about each and every part like the sepals, petals, androecium, gynoecium etc. In this way, maximum learning is possible. It is actually the reverse of the maxim "analyses to synthesis".

11. **From definite to indefinite:**

A teacher should always start from definite because definiteness has its limited boundaries and jurisdiction than indefinite things. We always have confidence on definite and tested things. We learn easily indefinite things on the basis of definite things. Hence a teacher while teaching any content should first present definite things, ideas and then he can learn indefinite things easily. Definite things, definite rules of grammar help the learner to have good knowledge. Gradually he can be taught about indefinite things.

Qualities of a Good teacher

1. Good Teachers Are Strong Communicators.

When it comes to effective teaching, strong communication skills are a must, said **Dr. Daniel Tanguay**, senior associate dean of faculty and **education programs**.

Tanguay got his start as a high school math teacher and said that many students came to his class feeling afraid of math, discouraged by their prior experiences and too overwhelmed to approach the subject positively.

By communicating with students at the beginning of the year about how math applies to their favorite hobbies, sports and future careers, Tanguay said his students were able to approach the subject in a more enjoyable way that better supported their learning.

“I’m a firm believer in communication in all forms,” he said. “As a leader, communication is a tool for overcoming fear.”

2. Good Teachers Listen Well.

Great communication doesn't stop when the teacher is done talking. Listening well is one of the most important skills needed to be a teacher.

“Teachers that are skilled in listening and observing often pick up on what isn’t being said, such as any anxieties a student may have, and can then help the student build their skills and confidence levels," said student **Kristine Ducote**, who is earning her **bachelor's in criminal justice**.

Student **Latricia Maddox**, who is studying for a **bachelor's in business**, said that effective listening skills also help a teacher better understand their students and tailor lessons to reach them how they learn best.

“If an educator can truly hear a student, they can learn how to reach them where they are,” she said. “This will open the door for them to receive and learn the lesson that is being taught.”

3. Good Teachers Focus on Collaboration.

Working in education means you’re never truly working alone. From paraprofessionals and teaching assistants to other classroom teachers and school leaders, working as a teacher often means working effectively in a group. It's also important to keep an open mind and learn from other educators.

The key to success in this kind of environment, Tanguay said, is the ability to collaborate. "You really need to be able to fill various roles in order to collaborate effectively," he said. "If you already have someone on your team who is going to be the one to critique all of the suggestions made, then you don't need to join in on that. Instead, maybe you need to be the person who is going to come up with creative ideas. You need to have that flexibility."

4. Good Teachers Are Adaptable.

Effective teachers need to be able to work in a constantly evolving environment and adjust their teaching methods based on the age of their students, the resources available and changing curriculum, practices and requirements.

As a teacher since the 1980s, SNHU education professor and on campus undergraduate program chairman **Dr. Audrey Rogers** said she's seen tremendous changes in the education field throughout her career, particularly with the rise in access to the internet, computers and other technology. What is teaching going to look like in another 30 years? The only thing certain, Rogers said, is change.

"Change is a constant," she said. "Learning how to adapt and adjust, that's been one of the skills that's been most helpful in my career. It's about keeping my finger on the pulse of who my students are over time and all the trends, standards and new research, and being able to continually improve."

Adaptability is also one of the key skills needed to be a teacher who may be educating students of varying grade levels or different learning styles, Tanguay said.

"You have to be able to adapt based upon your audience," he said.

5. Good Teachers Are Engaging.

Being able to engage students with humor, creative lessons and a strong classroom presence is an important part of what makes someone a good teacher, Tanguay said.

"If you were to envision that teacher that you would want in your life, even now, you're going to want someone who is very engaging in front of the classroom," he said. "A good teacher will perform for their students to keep them going... It's not about sitting back and just lecturing, it's about engaging in the work."

What an engaging teacher looks like will vary depending on grade level and subject matter, Tanguay said.

In kindergarten, an engaging teacher might be one who gets down on the floor to do activities with their students on their level. In high school, an engaging teacher may be one who thinks outside the box, adds humor to their lessons and finds creative ways to bring learning into the real world.

6. Good Teachers Show Empathy.

Another key to engaging students and improving their learning is to treat each student as an individual, by being empathetic and understanding to what may be going on in their lives, Tanguay said.

“We need to take a moment to think back and think about what could be going on in this student’s life,” he said. “It’s so important to be observant, attentive, empathetic and always have a positive attitude.”

Rhonda Garrison, a student in SNHU's **psychology program**, said empathy and understanding from a teacher can not only help that teacher make a connection with a student, it can directly impact a student's learning in the classroom.

“Something that may be easy for one student may not be so easy for someone else,” she said. “Everyone learns differently, whether it be faster or slower than normal, learns better by writing, reading or hands-on. Teachers need to always keep this in mind and always pay close attention to ensure each student is on the track they need to be.”

7. Good Teachers Have Patience.

No matter what grade level you're teaching, your patience will be tested while working as an educator.

Whether you’re managing classroom behavior, working with colleagues with different views, or communicating student issues or progress with parents, patience is one of the most important skills to practice as a teacher.

“More often than not you actually have to have more patience with the parents than you do with the students,” Tanguay said. “Parents are coming in with their perceptions of what happened to them when they were students or previous experiences that may have been detrimental to their child... You have to be patient and understanding of them.”

8. Good Teachers Value Real-World Learning.

Teachers who bring their students’ learning into the real world are often some of the most engaging. But it’s important for teachers to bring their own learning into the real world, too.

One of the best preparations for effective teaching is to ensure that education students get plenty of classroom experience early on in their degree programs, Rogers said.

For **education majors** in SNHU's on campus program, this preparation includes embedded coursework that begins in a student's freshmen year. They spend time at a local school once a week to collaborate with teacher partners and apply their learning to the classroom. A year-long student teaching experience is also a powerful way to ensure soon-to-be teachers have the time to hone their teaching skills, Rogers said.

"Our students have that benefit of seeing the practical application (of) what they're learning in the moment they're learning it," she said.

9. Good Teachers Share Best Practices.

A willingness to share knowledge and experiences with others is one of the most important qualities of a good teacher, Rogers said.

Education is a hands-on field and often requires experimentation within the classroom to discover which methods of communicating with students work best. Part of being an effective teacher is sharing your findings and best practices with others in the field, Rogers said.

“I always challenge my students to think, ‘What is your contribution?’” she said. “Are you brave enough to post on Twitter about your ideas on technology integration in the classroom? Your willingness to share your practice, to keep an open door, to be transparent and to be observed are an important part of your teaching.”

10. Good Teachers Are Lifelong Learners.

One of the key skills needed to be a good teacher is a dedication to continued education and a love of learning.

Whether you’re learning more about your subject area, learning new methods of communication or even exploring how to bring more technology into your classroom, continuing to expand your own knowledge is key to expanding that of your students.

“Those dedicated to their subjects with a passion for learning make the best teachers," said student **Jennifer Gardner**, who is earning a **bachelor's in mathematics**. “They also need to have a desire to pass on that knowledge.”

Ducote said it’s important for teachers to never feel as though they’ve learned it all, and to remain open to new experiences.

“No matter your education level, you can learn something from everyone you encounter, including fellow educators as well as students,” she said. “Being willing to continually add tools to your toolbox – even unconventional ones at times – will keep things new and exciting, as well as giving you excellent skills.”

Learn the Characteristics of Effective Teaching

If you’re interested in starting a career in education, it’s important to first focus on your own learning. Whether you’re seeking a bachelor's degree in education, an education master’s degree or even a **Doctor of Education** (EdD), building a strong foundation of knowledge and real-world experiences is key to becoming a good teacher.

No matter where your career path takes you – whether to an elementary school, secondary school or even to the university level – your teaching can have a profound impact on the lives of students, and your education is the foundation for that work.

Unit 2: Taxonomy of educational objectives:

- Taxonomy of Educational Objectives.
- Blooms Taxonomy
- Revisions of Blooms Taxonomy
- Implication of Cognitive, Affective and Psychomotor Domain in Educational process.

- Bloom's Taxonomy of Educational Objectives

- One of the most widely used ways of organizing levels of expertise is according to Bloom's Taxonomy of Educational Objectives.[3] Bloom's Taxonomy (Tables 1-3) uses a multi-tiered scale to express the level of expertise required to achieve each measurable student outcome. Organizing measurable student outcomes in this way will allow us to select appropriate classroom assessment techniques for the course.
-
- There are three taxonomies. Which of the three to use for a given measurable student outcome depends upon the original goal to which the measurable student outcome is connected. There are *knowledge-based* goals, *skills-based* goals, and *affective* goals (affective: values, attitudes, and interests); accordingly, there is a taxonomy for each. Within each taxonomy, levels of expertise are listed in order ofincreasing complexity. Measurable student outcomes that require the higher levels of expertise will require more sophisticated classroom assessment techniques.
-
- The course goal in Figure 2--"student understands proper dental hygiene"--is an example of a *knowledge-based* goal. It is *knowledge-based* because it requires thatthe student learn certain facts and concepts. An example of a *skills-based* goal for this course might be "student flosses teeth properly." This is a *skills-based* goal because it requires that the student learn *how to do* something. Finally, an *affective* goal for this course might be "student cares about proper oral hygiene." This is an *affective* goal because it requires that the student's values, attitudes, or interests be affected by the course.

- **Table 1**: Bloom's Taxonomy of Educational Objectives for *Knowledge-Based Goals*

Level of Expertise	Description of Level	Example of MeasurableStudent Outcome
1. Knowledge	Recall, or recognition of terms,ideas, procedure, theories, etc.Translate, interpret, extrapolate, but not see full implications or transfer to other situations, closer to literal translation.	When is the first day of Spring?
3. Application	Apply abstractions, general principles, or methods to specific concrete situations. Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. Includes realizing the distinction between hypothesis and fact as well as between relevant and extraneous variables.	What would Earth's seasons be like if its orbitwas perfectly circular?
4. Analysis		Why are seasons reversedin the southern hemisphere?
5. Synthesis	Creative, mental construction ofideas and concepts from multiple sources to form complex ideas into a new, integrated, and meaningful	If the longest day of the year is in June, why is thenorthern hemisphere hottest in August?

-

- pattern subject to givenconstraints.
- **6. Evaluation** To make a judgment of ideas or
- methods using external evidence or self-selected criteriasubstantiated by observations or informed rationalizations.
-
- What would be the important variables for predicting seasons on a newly discovered planet?
-
-
- **Table 2:** Bloom's Taxonomy of Educational Objectives for *Skills-Based Goals*
- **Level of Expertise Description of Level Example of Measurable**
- **Student Outcome**
- **Perception** Uses sensory cues to guideactions
-
-
-
-
- **Set** Demonstrates a readiness to take action to perform the taskor objective
-
  - **Guided Response** Knows steps required to
  - complete the task or objective
-
- **Mechanism** Performs task or objective in asomewhat confident, proficient,and habitual manner
- Some of the colored samples you see will needdilution before you take their spectra. Using onlyobservation, how will youdecide which solutions might need to be diluted?Describe how you would go about taking the absorbance spectra of a sample of pigments?
- Determine the density of agroup of sample metals with regular and irregular shapes.
- Using the procedure described below, determine the quantity ofcopper in your unknown ore. Report its mean value and standard deviation.
- **Complex OvertResponse**
- **Performs task or objective in aconfident, proficient, and habitual manner**

- Use titration to determinethe K_a for an unknown weak acid.
- **Adaptation** Performs task or objective asabove, but can also modify actions to account for new orproblematic situations
-
- **Organization** Creates new tasks or objectives
- incorporating learned ones
- You are performing titrations on a series of unknown acids and find a variety of problems with the resulting curves, e.g.,only 3.0 ml of base is required for one acid while
- 75.0 ml is required in another. What can you doto get valid data for all the unknown acids?
- Recall your plating and etching experiences withan aluminum substrate.Choose a different metal

	substrate and design a process to plate, mask, and etch so that a pattern of 4 different metals is

Table 3: Bloom's Taxonomy of Educational Objectives for *Affective Goals*

Level of Expertise	Description of Level	Example of MeasurableStudent Outcome
Receiving	Demonstrates a willingness to participate in the activity	When I'm in class I am attentive to the instructor,take notes, etc. I do not read the newspaper instead.
Responding	Shows interest in the objects, phenomena, or activity by seeking it out or pursuing it forpleasure	I complete my homeworkand participate in class discussions.
Valuing	Internalizes an appreciation for (values) the objectives, phenomena, or activity	I seek out information in popular media related to my class.
Organization	Begins to compare different values, and resolves conflicts between them to form an internally consistent system ofvalues	Some of the ideas I've learned in my class differfrom my previous beliefs.How do I
Characterization by a Value or Value Complex	Adopts a long-term value system that is "pervasive, consistent, and predictable"	I've decided to take my family on a vacation to visit some of the places I learned about in my class.

- To determine the level of expertise required for each measurable student outcome, first decide which of these three broad categories (knowledge-based, skills-based, and affective) the corresponding course goal belongs to. Then, using the appropriate Bloom's Taxonomy, look over the descriptions of the various levels of expertise.
- Determine which description most closely matches that measurable student outcome. As can be seen from the examples given in the three Tables, there are different ways of representing measurable student outcomes, e.g., as statements about students (Figure 2), as questions to be asked of students (Tables 1 and 2), oras statements from the student's perspective (Table 3). You may find additional ways of representing measurable student outcomes; those listed in Figure 2 and in Tables 1-3 are just examples.

- Bloom's Taxonomy is a convenient way to describe the degree to which we want our students to understand and use concepts, to demonstrate particular skills, and to have their values, attitudes, and interests affected. It is critical that we determine the levels of student expertise that we are expecting our students to achieve because this will determine which classroom assessment techniques are most appropriate for the course.

Though the most common form of classroom assessment used in introductory college courses--multiple choice tests--might be quite adequate

- for assessing knowledge and comprehension (levels 1 and 2, Table 1), this type of assessment often falls short when we want to assess our students knowledge at the higher levels of synthesis and evaluation (levels 5 and 6).[4]

- Multiple-choice tests also rarely provide information about achievement of skills- based goals. Similarly, traditional course evaluations, a technique commonly used for affective assessment, do not generally provide useful information about changes in student values, attitudes, and interests.
-
- Thus, commonly used assessment techniques, while perhaps providing a means for assigning grades, often do not provide us (or our students) with useful feedback for determining whether students are attaining our course goals. Usually, this is due to a combination of not having formalized goals to begin with, not having translated those goals into outcomes that are measurable, and not using assessment techniques capable of measuring expected student outcomes given the levels of expertise required to achieve them. Using the CIA model of course development, we can ensure that our curriculum, instructional methods, *and* classroom assessment techniques are properly aligned with course goals.
-
- Note that Bloom's Taxonomy need not be applied exclusively after course goals have been defined. Indeed, Bloom's Taxonomy and the words associated with its different categories can help in the goals-defining process itself. Thus, Bloom's Taxonomy can be used in an iterative fashion to first state and then refine course goals. Bloom's Taxonomy can finally be used to identify which classroom assessment techniques are most appropriate for measuring these goals.

Anderson and Krathwohl
Bloom's Taxonomy Revised
Understanding the New Version of Bloom's Taxonomy
Revisions to Bloom's classic cognitive taxonomy by Anderson and Krathwohl and how to use them effectively
Background:
Who are Anderson and Krathwohl? These gentlemen are the primary authors of the revisions
to what had become known as Bloom's Taxonomy — an ordering of cognitive skills. (A
taxonomy is really just a word for a form of classification.) This taxonomy had permeated

teaching and instructional planning for almost 50 years before it was revised in 2001. And
although these crucial revisions were published in 2001, surprisingly there are still educators
who have never heard of Anderson and Krathwohl or their important work in relation to Bloom's
Cognitive Taxonomy. Both of these primary authors were in a perfect position to orchestrate
looking at the classic taxonomy critically. They called together a group of educational
psychologists and educators to help them with the revisions. Lorin Anderson was once a student
of the famed Benjamin Bloom, and David Krathwohl was one of Bloom's partners as he devised
his classic cognitive taxonomy.

Here in the United States, from the late 1950s into the early 1970s, there were attempts to dissect
and classify the varied domains of human learning – cognitive (knowing, or head), affective
(emotions, feelings, or heart) and psychomotor (doing, or kinesthetic, tactile, haptic or
hand/body). The resulting efforts yielded a series of taxonomies for each area. The
aforementioned taxonomies deal with the varied aspects of human learning and were arranged
hierarchically, proceeding from the simplest functions to those that are more complex. Bloom's
Cognitive Taxonomy had been a staple in teacher training and professional preparation for
almost 40 years before Anderson and Krathwohl instituted an updated version. An overview of
those changes appears below.

While all of the taxonomies above have been defined and used for many years, there came about
at the beginning of the 21st century in a new version of the cognitive taxonomy, known
commonly before as Bloom's Taxonomy. You can also search the Web for varied references on
the other two taxonomies — affective or psychomotor. There are many valuable discussions on
the development of all the of the hierarchies, as well as examples of their usefulness and
applications in teaching. However, it is important to note that in a number of these discussions,
some web authors have mislabeled the affective and psychomotor domains as extensions of
Bloom's work. These authors are in grave error. The original cognitive domain was described
and published in 1956. While David Krathwohl was one of the original authors on this

taxonomy
the work was named after the senior or first author Benjamin Bloom. The affective domain was
not categorized until 1964 and as David Krathwohl was the lead author on this endeavor, it
should bear his name, not Bloom's. Bloom had nothing to do with the psychomotor domain and
it was not described or named until the first part of the 1970s. There are 3 versions of this
taxonomy by 3 different authors — Harrow (1972); Simpson (1972); and Dave (1970) See full
citations below.
The Cognitive Domain:
The following chart includes the two primary existing taxonomies of cognition. Please note in
the table below, the one on the left, entitled Bloom's, is based on the original work of Benjamin
Bloom and others as they attempted in 1956 to define the functions of thought, coming to know,
or cognition. This taxonomy is almost 60 years old. The taxonomy on the right is the more recent
adaptation and is the redefined work of Bloom in 2000-01. That one is labeled Anderson and
Krathwohl.
The group redefining Bloom's original concepts, worked from 1995-2000. As
indicated above, this group was assembled by Lorin Anderson and David Krathwohl and
included people with expertise in the areas of cognitive psychology, curriculum and instruction,
and educational testing, measurement, and assessment. The new adaptation also took into
consideration many of Bloom's own concerns and criticisms of his original taxonomy.
As you will see the primary differences are not in the listings or rewordings from nouns to verbs,
or in the renaming of some of the components, or even in the re-positioning of the last two
categories. The major differences lie in the more useful and comprehensive additions of how the
taxonomy intersects and acts upon different types and levels of knowledge — factual,
conceptual, procedural and metacognitive. This melding can be charted to see how one is
teaching at both knowledge and cognitive process levels. Please remember the chart goes from
simple to more complex and challenging types of thinking.

Taxonomies of the Cognitive Domain
Bloom's Taxonomy 1956
Anderson and Krathwohl's
Taxonomy 2001
1. Knowledge: Remembering or retrieving previously learned material. Examples of verbs that relate to this function are:
know identify
relate list
define recall
memorize repeat
record name
recognize acquire
1. Remembering:
Recognizing or recalling knowled
ge from memory. Remembering is
when memory is used to produce
or retrieve definitions, facts, or
lists, or to recite previously
learned information.
2. Comprehension: The ability to grasp or construct meaning from material. Examples of verbs that relate to this function are:
restate locate report
recognize explain
express
identify discuss
describe discuss
review infer
illustrate interpret
draw represent
differentiate
conclude
2. Understanding:
Constructing meaning from
different types of functions be
they written or graphic messages
or activities like interpreting,
exemplifying, classifying,
summarizing, inferring,
comparing, or explaining.
3. Application: The ability to use learned material, or to implement material in new and concrete situations. Examples of verbs that relate to this function are:

apply relate
develop translate
use operate
organize employ
restructure interpret
demonstrate illustrate
practice calculate
show exhibit
dramatize
3. Applying:
Carrying out or using a procedure through executing, or implementing. Applying relates to or refers to situations where learned material is used through products like models, presentations, interviews or simulations.
4. Analysis: The ability to break down or distinguish the parts of material into its components so that its organizational structure may be better understood. Examples of verbs that relate to this function are:
analyze compare
probe inquire
examine contrast
categorize
differentiate contrast
investigate detect
survey classify
deduce
experiment
scrutinize discover
inspect dissect
discriminate
separate
4. Analyzing:
Breaking materials or concepts into parts, determining how the parts relate to one another or how they interrelate, or how the parts relate to an overall structure or purpose. Mental actions included in this function are differentiating,

organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing, he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations.

5. Synthesis: The ability to put parts together to form a coherent or unique new whole. Examples of verbs that relate to this function are:

compose produce
design assemble
create prepare
predict modify tell
plan invent
formulate collect
set up generalize
document combine
relate
propose develop
arrange construct
organize originate
derive write
propose

5. Evaluating:
Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy, evaluating comes before creating as it is often a necessary part of the precursory behavior before one creates something.

6. Evaluation: The ability to judge, check, and even critique the value of material for a given purpose. Examples of verbs that relate to this function are:

judge assess
compare evaluate

conclude measure
deduce
argue decide
choose rate select
estimate
validate consider
appraise value
criticize infer
6. Creating:
Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way, or synthesize parts into something new and different creating a new form or product. This process is the most difficult mental function in the new taxonomy.
Table 1.1 – Bloom vs. Anderson/Krathwohl

(Diagram 1.1, Wilson, Leslie O. 2001)
Note: Bloom's taxonomy revised – the author critically examines his own work – After creating the cognitive taxonomy one of the weaknesses noted by Bloom himself was that there is
was a fundamental difference between his "knowledge" category and the other 5 levels of his
model as those levels dealt with intellectual abilities and skills in relation to interactions with
types of knowledge. Bloom was very aware that there was an acute difference between knowledge and the mental and intellectual operations performed on, or with, that knowledge. He
identified specific types of knowledge as:

- Terminology
- Specific facts
- Conventions
-

Trends and sequences
•
Classifications and categories
•
Criteria
•
Methodology
•
Principles and generalizations
•
Theories and structures
Levels of Knowledge – The first three of these levels were identified in the original work, but
rarely discussed or introduced when initially discussing uses for the taxonomy. Metacognition
was added in the revised version.
•
Factual Knowledge – The basic elements students must know to be acquainted with a discipline or solve problems.
•
Conceptual Knowledge – The interrelationships among the basic elements within a larger structure that enable them to function together.
•
Procedural Knowledge – How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.
•
Metacognitive Knowledge – Knowledge of cognition in general, as well as awareness and knowledge of one's own cognition. (29)
(Summarized from: Anderson, L. W. & Krathwohl, D.R., et al (2001) A taxonomy for learning,
teaching and assessing: A revision of Bloom's taxonomy of educational objectives. New York:
Longman.)
One of the things that clearly differentiates the new model from that of the 1956 original is that it
lays out components nicely so they can be considered and used. Cognitive processes, as related
to chosen instructional tasks, can be easily documented and tracked. This feature has the potential to make teacher assessment, teacher self-assessment, and student assessment easier or
clearer as usage patterns emerge. (See PDF link below for a sample.)
As stated before, perhaps surprisingly, these levels of knowledge were indicated in Bloom's
original work – factual, conceptual, and procedural – but these were never fully

understood or
used by teachers because most of what educators were given in training consisted of a simple
chart with the listing of levels and related accompanying verbs. The full breadth of Handbook
I, and its recommendations on types of knowledge, were rarely discussed in any instructive or
useful way. Another rather gross lapse in common teacher training over the past 50+ years is
teachers-in-training are rarely made aware of any of the criticisms leveled against Bloom's
original model.

Unit 3: Teaching Technique, Methods and Style:

- Meaning and concept of methods and techniques of teaching.
- Teaching Device- explanation, questioning, illustration and teaching aids
- Styles of teaching - Autocratic style: lecture, demonstration, tutorial and team teaching.
- Permissive style: brain storming, group discussion, panel discussion, project, seminar, workshop and symposium.
- Teaching techniques and skills – Micro teaching.

Teaching Technique, Methods and Style:

- Meaning, Concept, Methods and Techniques of Teaching.
- Teaching Device- explanation, questioning, illustration and teaching aids
- Styles of teaching-Autocratic style: lecture, demonstration, tutorial and team teaching.

MEANING, CONCEPT, METHODS AND TECHNIQUES OF TEACHING.

MEANING OF TEACHING:

Teaching in simple terms, is referred to as either an occupation or profession of a group known as teachers or an activity. Teaching is one of the instruments of education and is a special function is to impart understanding and skill. The main function of teaching is to make learning effective. The learning process would get completed as a result of teaching. So, teaching and learning are very closely related.

In simple way teaching is the concerted sharing of knowledge and experience, which is usually organized within a discipline and, more generally, the provision of stimulus to the psychological and intellectual growth of a person by another person or artifact.

CONCEPT OF TEACHING

Teaching is a process in which one individual teaches or instruct another individual. Teaching is considered as the act of imparting instructions to the learners in the classroom situation. It is an activity that causes the child to learn, acquire the desired knowledge and also desired way of living. It is disciplined social process in which teacher influences the behaviour of less experienced pupil and helps him/her develops according to the needs and ideas of the society. **John Dewey:** considers teaching as a manipulation of the situation, where the learner will acquire skills and insight with his own initiation.

When a person imparts information or skills to another, it is common to describe the action as teaching. Imparting may mean to share experiences or communicating information, for instance, lecture. Teaching is regarded as both an art and science. As an art, it lays stress on the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom to enable students to learn. As a science, it sheds light on the logical, mechanical, or procedural steps to be followed to attain an effective achievement of goals.

DEFINITION OF TEACHING:

Some of the definitions of teaching are as follows:

1. According to **H.C. Morrison (1934),** "Teaching is an intimate contact between a more mature and personality and a less mature one which is designed to further the education of the later".
2. According to **John Brubacher (1939),** "Teaching is an arrangement and manipulation of a situation in which there are gaps and obstructions which an individual will seek to overcome and from which he will learn in course of doing so".
3. According to **B.O Smith (1960),** "Teaching is system of actions intended to produce learning".
4. According to **N.L. Gage (1962),** "Teaching is form of interpersonal influence aimed at changing the behavior potential of another person".
5. **According to J. B Hough and James K. Duncan,** "Teaching is an activity with four phases, a curriculum planning phase, an instructing phase, and an evaluating phase".

CHARACTERISTIC OF TEACHING:-

Teaching is a social and cultural process, which is planned in order to enable an individual to learn something in his life. We can describe the characteristics of teaching in the following way:-

(1) Teaching is a complete social process which is undertaken for the society and by the society. With

every changing social ideas, it is not possible to describe exact and permanent nature of teaching.
(2) Teaching is giving information. Teaching tells students about the things they have to know and students cannot find out themselves. Communication of knowledge is an essential part of teaching.

(3) Teaching is an interactive process. Teaching is an interactive process between the student and the teaching sources, which is essential for the guidance, progress, and development of students.
(4) Teaching is a process of development and learning.
(5) Teaching causes a change in behavior.
(6) Teaching is both arts as well as science. Teaching is an art as it calls for the exercise of talent and creativity. Teaching as science involves a repertoire of techniques, procedures and skills that can be systematically studied, described and improved. A good teacher is one who adds creativity and inspiration to the basic repertoire.
(7) Teaching is face to face encounter.
(8) Teaching is observable, measurable and modifiable.
(9) Teaching is skilled occupation. Every successful teacher is expected to know the general methods of teaching-learning situations.
(10) Teaching facilitates learning.
(11) Teaching is both conscious and an unconscious process.
(12) Teaching is from memory level to reflective level.
(13) Teaching is a continuum of training, conditioning, instruction, and indoctrination.
14. Teaching is an effective interaction between teacher and students.

15. Teaching has various forms, like formal and informal raining, conditioning or indoctrination, etc.

16. Teaching is dominated by the skill of communication.

17. Teaching is a tripolar process; the three poles are, educational objectives, learning experiences and change in behaviour.

18. Teaching should be well planned, and the teacher should decide the objectives, methods of teaching and evaluation techniques.

19. Teaching is suggesting and not dictating.

20. Good teaching is democratic, and teacher respects the students, encourages them to ask questions, answer questions and discuss things.

21. Teaching provides guidance, direction and encouragement to the students.

22. Teaching is a cooperative activity and teacher should involve students in different classroom activities, such as organization, management, discussion, recitation and evaluation of results.

23. Teaching is kind and sympathetic, and a good teacher develops emotional stability among children.

24. Teaching is remedial, and the teacher must solve the learning problems of students.

25. Teaching helps children to make adjustments in life.

26. Teaching is a professional activity that helps to bring about harmonious development of children.

27. Teaching stimulates students' power of thinking and directs them towards self-learning.

28. Teaching can be observed, analyzed and evaluated.

29. Teaching is a specialized task and may be taken as a set of component skills for the realization of a specified set of instructional objectives.

ECHNIQUES AND STRATEGIES OF TEACHING

Effective teachers are always on the prowl for new and exciting teaching techniques and strategies that will keep their students motivated and engaged. Whether you're a new or experienced teacher, you may feel inundated by all of the new educational buzzwords, theories, and new strategies that are out there.

With all of the information available, it's hard to decide which teaching strategies are right for your classroom. Sometimes, the old tried-and-true ones that you have been using in your classroom just happen to work the best, and that's okay. Teaching strategies that are considered "new" may just not fit into your teaching style.

Here are a few teaching techniques and strategies that are a staple in most classrooms. Depending upon your style, preference, and your students, chooses the ones that suit your needs.

1. Differentiated Instruction: Learning Stations

Differentiated instruction strategies allow teachers to engage each student by accommodating to their specific learning style. According to **Howard Gardner's** Multiple Intelligences Theory, every person has a different mind, and therefore each person learns and understands information differently. Differentiating instruction offers a way to meet all students' needs. One helpful strategy to differentiate instruction is

learning stations. Learning stations can easily be designed to enable students with diverse learning needs to learn at their pace and readiness level. Teachers can set up each station where students will be able to complete the same task, but at the level and style that is specifically designed for them.

2. Cooperative Learning: The Jigsaw Method

Cooperative learning gives students the opportunity to work with others and see different points of view. Students learn more effectively when working together rather than apart, and it is also known to improve self-confidence in students. The **Jigsaw method** is especially effective because each student is responsible for one another's learning, and students find out quickly that each group member has something equally important to contribute to the group in order to make the task a successful one. Students are exposed to and use many skills throughout this strategy: communication, problem-solving skills, cognition, and critical thinking-all of which are essential for a successful academic career.

3. Utilizing Technology in the Classroom

Integrating technology into the classroom is a great way to empower students to stay connected in this technological era. Technology-rich lessons have been found to keep students motivated and engaged longer. Some examples of utilizing technology in the classroom are to create web-based lessons or multimedia presentations such as a video, animation, or some type of graphic, utilizing a tablet or an iPad, taking your class on a virtual field trip, participating in an online research project, or even creating a class website. Any of these technology integration strategies will have a positive impact on student learning.

4. Inquiry-Based Instruction

Inquiry-based learning implies involving students in the learning process so they will have a deeper understanding of what they are learning. We are born with the instinct to inquire-as babies we use our senses to make connections to our surroundings. Inquiry-based learning strategies are used to engage students to learn by asking questions, investigating, exploring, and reporting what they see. This process leads students to a deeper understanding of the content that they are learning, which helps them be able to apply these concepts in new situations. In order for our students to be able to be successful in the 21st century, they need to be able to answer complex questions and develop solutions for these problems. The inquiry-based learning strategy is a great tool to do just that.

5. Graphic Organizers

Graphic organizers are a simple and effective tool to help students brainstorm and organize their thoughts and ideas in a visual presentation. Simply put, they help students organize information so it is easier for them to comprehend. Graphic organizers can be used for any lesson, to structure writing, brainstorming, planning, problem solving, or decision making. The most popular organizers are the Venn diagram, concept map, KWL chart, and T Chart.

An experienced teacher knows that not every teaching strategy that you use will be an effective one. There will be some hits and misses, and depending upon your teaching style and the ways your students learn, you will figure out which strategies work and which do not. It may take some trial and error, but it doesn't hurt to try them all.

-TEACHING DEVICE: EXPLANATION, QUESTIONING, ILLUSTRATION AND TEACHING AIDS

EXPLANATION

What is Explanation?

An explanation is a statement or set of statements that clarifies the reasons, causes, context, or principles that underpin a particular phenomenon. The word derives from the Latin term **'Explicatus'** which means to provide reasoning for. Explanations are central to the discipline of science as one of the goals of the discipline is to provide explanations that lead to a deeper understanding of various phenomena. In plain English, explanations elucidate why things work, what something is, or how things happen. They often provide cause and effect relations, include a time sequence, and use action verbs. An explanation usually has five parts: (i) naming or specifying the concept, (ii) describing elements or components of the concept in an appropriate order, (iii) explaining how the elements relate or connect to each other, (iv) providing an example, and (v) summarizing with a concluding statement.

Types of Explanation:

There are many types of explanations, including deductive-nomological, functional, historical, psychological, reasoning, rationalization, consequential, causal, and argumentation. In line with the commonly acceptable deductive-nomological model, a scientific explanation has two parts: (i) the explanandum is the phenomenon that is to be explained and (ii) the explanus is the evidence, reasoning, or details to explain the phenomenon. According to **Hempel** (1965), "the explanus must be a logical

consequence of the explanandum" and "the sentences constituting the explanus must be true"(p. 248). So, the explanandum identifies the concept or phenomenon being explained, and the explanus provides the evidence or reasoning. For example, someone may ask a question about a weather phenomenon such as "what is a tornado?" which is an explanandum, and a reply could be "an intense low pressure system that has rapidly rotating air like a spout" which is an explanus. Another type of explanation is based on the notion of argumentation (Toulmin 1969). An argument has four components: (i) a claim which is an assertion or conclusion about a particular phenomenon, (ii) evidence which is the data that supports the claim, (iii) warrant which is the status of the evidence so that it is adequate and valued by others, and (iv) reasoning which is the line of thought linking the claim and evidence.

Explaining how the world works or why something happens is a key feature of the discipline. Students at universities and in schools should be encouraged to explain the subject matter in their own words as a way to develop conceptual clarity in their own understandings. When students plan for an explanation, they should take into account the purpose, audience, context, and medium so that what they are explaining becomes clearly understandable by others.

QUESTIONING

What is Questioning?

Questioning is an important activity in teaching. Questioning can be used to test the knowledge of the past, with questions requiring factual answers by asking who, what, where, and when. Designing is also aimed at stimulating student thinking. These kinds of questions need to be carefully considered as they relate to more serious matters such as consequences and to use questions of how and reason.

Questioning Techniques is one of the key components to creating effective teaching and learning processes is the method of questioning or questioning techniques used by teachers. Questioning by teachers in the teaching and learning process is one of the many interactions that occur in the classroom. Questioning techniques are one of the tools for achieving goals and stimulating students' mental activity. Questioning techniques is important because it can stimulate learning, develop the potential of students to think, drive to clear ideas, stir the imagination, and incentive to act. It is also one of the ways to help students to develop their knowledge more effectively. Teachers need to be aware that the quality of questions and the quality of the questioning when conducting teaching and learning sessions in the classroom are one of the key elements in determining the effectiveness and quality of their teaching sessions. To help students stimulate a high level of thinking, teachers must play a key role in applying the right techniques and skills to question students. Teachers should be aware of any changes that occur in the classroom, and those changes should be aligned with the objectives they want to achieve in the teaching and learning process. Teachers, therefore, need to plan carefully and take into account some of the following factors:

(i) Attention:

Questioning is one of the most effective ways to make the students pay attention in the classroom. About this, the question must be addressed to the whole classroom before a student is asked to answer.

Sometimes, some students who are not paying attention will ask the teacher to repeat the question. In this case, the teacher should not repeat the question posed when asked by the student to repeat it. If the teacher repeats the question, then, of course, the student will not pay attention, so to attract the students; the teacher should mention the question only once.

(ii)Voice:

One of the most important communication tools for a teacher is voice. When asking questions, teachers should make sure their voices are clear and that their tone is well-heard. The questions should be presented well and clear to the students and look forward to receiving answers. This is important to attract students to answer a question.

(iii) Pause: Pause After submitting a question, the teacher should be the one to pause talking for a moment and look at the whole class. Note the verbal cues that indicate that the student is ready to respond. After asking questions, students should be given time to think about the answers. The time given should not be too long because if it is too long, the interest in it will fade.

(iv) Content of Questions:

In asking a question, a teacher should plan the types of questions that will be asked in the classroom. In this case, it may not be necessary for these questions to be prepared in advance, but the 'axis question' needs to be designed. The axis questions should be arranged in a logical order to obtain continuity in the lesson. In a given lesson, the teacher should provide some questions like this to determine the desired direction. These questions should not be too long.

Levels of Questions

Questions that will be posed in the teaching and learning activity should be diversified by the levels of questioning. Benjamin S. Bloom, in his book, "Taxonomy of Education Objective (1956), divides the six levels of questions into the cognitive domain. It starts with the questions of recalling facts, which are the lowest levels through the most complex and abstract levels to the highest level, which is classified

The six levels of questions are as follows:

(i)Knowledge:

Knowledge-based questions are questions that can easily digest students' memory. These types of questions should be chosen by teachers, especially when presenting new topics or ideas for students.

(ii)Understanding: After being exposed to a concept and knowledge, teachers should ask questions that are comprehensible. This means that teaching and learning activities will take place in the dimension of understanding or understanding activities.

(iii)Application:

The following features of the questions involve the use of information provided to students. The application questions are intended to help students apply their knowledge through the information provided during the teaching and learning activities.

(iv)Analysis:

The feature of the analysis question is that this form of question works to separate ideas. At a higher level, students will be presented with analytical questions, and teachers need to be careful so that students can follow the content of the subject and apply all the skills to them.

(v)Synthesis:

Synthesis questions are questions that can help students to come up with a new idea through the initial information they are exposed to. These skills also require high skills in which teachers need to guide students until they can synthesize information.

(vi)Evaluation: At the highest level, evaluation based questions will be given to students. Evaluation means students should be able to make and maintain their justifications.

Thus, Questioning in teaching and learning sessions is one of the most important aspects of mastering knowledge. Teachers should focus on questioning techniques in the teaching and learning process to nurture students' interest and interest in learning. Questioning techniques will increase motivation and promote students' ability to think critically and creatively.

ILLUSTRATION

What is Illustration?

An illustration is a decoration, interpretation or visual explanation of a text, concept or process, designed for integration in print and digital published media, such as posters, flyers, magazines, books, teaching materials, animations, video games and films. An illustration is typically created by an illustrator.

Illustration means "making ideas clearer by giving examples or by using diagrams or pictures". An example is always one of a larger "set" or "class", e.g Mercury is an example of an element. Exemplification and illustration are common techniques in academic writing.

Functions of Illustrations:

Following are some of the functions of illustration:

(i)Attention:

Gaining the attention of students is precondition to any kind of learning. Illustrations, which attracts the attentions of students in effective way.

(ii) Retention: Retention usually refers to keeping information available in the long term memory, but the ability to retain information in working memory is equally important to learning and performance.
(iii) Understand: With the presence of illustrations lesson are easy to understand. Like in literature, the sequential illustrations helping the students to understand the story.
According to cognitive theory the first mage which grabs your attention have the chance to in your memory for a long term.

TEACHING AIDS:

What is Teaching Aids?

A teaching aid is a tool used by the teacher as a facilitator to the process of teaching and learning inside the classroom. It is one of the means by which we, as teachers bring life into the theoretical texts by bringing environment inside the classroom indirectly. Also, it is a means of personification to the concrete texts in the students' books. The final purpose remains as a means of relating teaching with the environment that students live in and communicate with.

A teaching aid is a means of bringing environment into class to give life to theoretical learning. It is a means to involve learners physically, mentally, emotionally and environmentally. A teaching aid can involve the learners physically through using his senses and acting, mentally through using his mind and thinking, emotionally through his excitement and environmentally through looking at pictures that express the daily life we live. Have you wondered what a teacher is? He is an audio-visual aid of teaching.

Types of Teaching Aids.

They include:

Cards, Charts, grids, Pictures, Drawing, photos, magazines, worksheets, mind-mapping. Technology, Video, digital material, data show, CDs, Electronic program, Dictionary, Websites, the computer, the internet, E-Book, Intelligent board, Blackboard, Realia, actual fields, Real situations, Online Dictionaries, Graffic Organizers, virtual tours of their latest exhibits, The real daily environmental things.

Kinds of active teaching aids:

. Visual Aids

. Audio Aids

. Audio - Visual Aids

1) **Visual Aids**

The aids which use sense of vision are called Visual aids.

For example :- actual objects, models, pictures, charts, maps, flash cards, flannel board, bulletin board, chalkboard, overhead projector, slides etc. Out of these black board and chalk are the commonest ones.

2) **Audio Aids**

The aids that involve the sense of hearing are called Audio aids. For example:- radio, tape recorder, gramophone etc.

3) **Audio - Visual Aids**

The aids which involve the sense of vision as well as hearing are called Audio- Visual aids. For example:- television, film projector, film strips,..

- STYLES OF TEACHING - AUTOCRATIC STYLE: LECTURE, DEMONSTRATION, TUTORIAL AND TEAM TEACHING.

What Is Autocratic Style of Teaching?

This style is known as autocratic or directive style of teaching. In this style, the entire authority is focused in the hands of the teacher. He decides all policies. He gives direction to subordinates and demand complete obedience from them (students). He creates the work situation for the subordinates and the later have to execute what they are told. Autocratic teaching possesses all the authority and assumes complete responsibility for the task entrusted.

Autocratic of teaching is a traditional style of teaching. These are teacher centred or content centred. **Here teacher is more active and learners are passive listeners.** No emphasis is given on learner abilities, capabilities, interests and personality. Autocratic styles of teaching are lecture method demonstration method, team teaching, tutorial etc.

In autocracy, the law is what an autocrate frames. When this socio-political philosophy is implemented in the school, a teacher behaves like an autocrate in the class. He inserts the knowledge into the minds of learners without heeding to their needs, interest, and abilities. He considers himself as an ideal and fully matured and treats the learners like rough clay.

LECTURE:

What is Lecture?

A lecture is an oral presentation intended to presents information or teaches people about a particular subject. Oxford Dictionary defines lecture method is talk giving specified to class long series speech.

Lecture method is the oldest method of teaching. It is based on the philosophy of Idealism. This method simply gives explanation of the topic to the students. The emphasis is on the presentation of the content.

It is the simplest method for teachers and does not require any arrangements.

In lecture method teacher explains the matter in simple and understandable manner. This method is particularly used in the secondary classes and above and can be used to motivate students, to clarify, to review and to expand contents. Lecture method is for imparting authentic, systematic and effective information about some events and trends. It gives the students training in listening. It develops good audience habits. It provides opportunities of correlating events and subjects and enables the linkage of previous knowledge with the new one.

DEMONSTRATION:

The word demonstration means to give demos or to perform the particular activity or concept. In demonstration method, the teaching-learning process is carried in a systematic way. Demonstration often occurs when students have a hard time connecting theories to actual practice or when students are unable to understand applications of theories. In order to make a success of demonstration method, three things are necessary.

(a) The object being displayed during demonstration should not be so small.

(b) During the demonstration, the clear language should be used so that pupils may understand concept easily.

(c) The pupils should be able to question teachers in order to remove their difficulties.

Characteristic of demonstration method

(1) The demonstration should be done in a simple way.

(2) In this strategy, attention is paid to all students.

(3) Goals and objections of demonstration are very clear.

(4) It is a well-planned strategy.

(5) Time is given for rehearsal before the demonstration.

Steps of Demonstration method

There are six steps of demonstration process.

(1) Planning and preparation

Proper planning is required for good demonstration. For this following points should be kept in mind.

- Through the preparation of subject matter.
- lesson planning
- Collection of material related to the demonstration.
- Rehearsal of demonstration.

In order to ensure the success of demonstration, the teacher should prepare lesson minutely and very seriously.

(2) Introducing the lesson

The teacher should motivate students and prepare them mentally for the demonstration.

The teacher should introduce the lesson to students keeping in mind the following things.

- individual differences
- Environment
- Experiences

(3) Presentation of subject matter

– In demonstration presentation of subject matter is very important. The principle of reflecting thinking should be kept in mind.

– The teacher should teach the student in such a way that their previous knowledge can be attached to their new knowledge.

(4) Demonstration

-The performance in the demonstration table should be ideal for the student.

-The demonstration should be neat and clean.

(5) Teaching Aids

-The teacher can use various teaching aids like models, blackboard, graphs etc. during demonstration.

(6) Evaluation

-In this last step, evaluation of the whole demonstration should be done, so that it can be made more effective.

TUTORIAL:

What is tutorial method of Teaching?

Tutorial teaching is a method, which delivered following the usual lecture. This is remedial teaching that is individualized or given to a specific group of students. The aim of the tutorial or remedial teaching is to help the students to improve their cognitive and other academic abilities.

TYPES OF TUTORIAL:

The tutorial classes can be classified into three following types:

Supervision Tutorials:

In this type of teaching, the teacher assigns problems or assignment to the student of above-average academic skills. Then the teacher asks the student to present the answer sheet to the teacher and his classmates. The audience can ask question-related to the paper presentation. If the student is unable to answer the queries of the students, then the teacher may intervene and answer the queries.

Group Tutorials:

This type of teaching is delivered to the students, who have low intelligence or more difficulty in understanding the content in the classroom lecture. Here, the teacher tries to provide remedial teaching, which helps the students to understand the lecture more easily.

Practical Tutorials:

This is a type of remedial teaching, which tries to make practical work easier for the students. This type of tutorials can be conducted after giving the lectures.

ADVANTAGES AND DISADVANTAGES OF TUTORIALS METHOD

Advantages of Tutorials Method

Following are the advantages of Tutorial Method

1. As individual differences are taken into consideration, it is supposed to be an effective and efficient way of teaching.
2. Teacher is like a doctor to diagnose the weaknesses of the learners and on the basis of these weaknesses, he provides specific treatment of teaching.
3. Teacher is helping and cooperative to the learners, thus, he gains the confidence of the learners in revealing their problems.

Disadvantages of Tutorials Method

1. Due to over-crowded classes, it is very difficult for the tutor to solve the problems of each student and in each and every subject.
2. The schedule allotted for teaching is so tight that remedial teaching is not possible at teach and every step.
3. Feeling of jealousy inculcates in the tutorial groups
4. Even in tutorial groups, equal opportunities are not provided to all the students. There are some students who dominate the tutorial group.
5. Teacher, sometimes becomes biased and does not show equal interest towards all the group members.

TEAM TEACHING:

What is Team Teaching?

Team teaching involves a group of instructors working purposefully, regularly, and cooperatively to help a group of students of any age learn. Teachers together set goals for a course, design a syllabus, prepare individual lesson plans, teach students, and evaluate the results. They share insights, argue with one another, and perhaps even challenge students to decide which approach is better.

Teams can be single-discipline, interdisciplinary, or school-within-a-school teams that meet with a common set of students over an extended period of time. New teachers may be paired with veteran teachers. Innovations are encouraged, and modifications in class size, location, and time are permitted. Different personalities, voices, values, and approaches spark interest, keep attention, and prevent boredom.

The team-teaching approach allows for more interaction between teachers and students. Faculty evaluates students on their achievement of the learning goals; students evaluate faculty members on their teaching proficiency. Emphasis is on student and faculty growth, balancing initiative and shared responsibility, specialization and broadening horizons, the clear and interesting presentation of content and student development, democratic participation and common expectations, and cognitive, affective, and behavioral outcomes. This combination of analysis, synthesis, critical thinking, and practical applications can be done on all levels of education, from kindergarten through graduate school.

Working as a team, teachers model respect for differences, interdependence, and conflict-resolution skills. Team members together set the course goals and content, select common materials such as texts and films, and develop tests and final examinations for all students. They set the sequence of topics and supplemental materials. They also give their own interpretations of the materials and use their own teaching styles. The greater the agreement on common objectives and interests, the more likely that teaching will be interdependent and coordinated.

Teaching periods can be scheduled side by side or consecutively. For example, teachers of two similar classes may team up during the same or adjacent periods so that each teacher may focus on that phase of the course that he or she can best handle. Students can sometimes meet all together, sometimes in small groups supervised by individual teachers or teaching assistants, or they can work singly or together on projects in the library, laboratory, or fieldwork. Teachers can be at different sites, linked by video-conferencing, satellites, or the Internet.

Breaking out of the taken-for-granted single-subject, single-course, single-teacher pattern encourages other innovations and experiments. For example, students can be split along or across lines of sex, age, culture, or other interests, then recombined to stimulate reflection. Remedial programs and honors sections provide other attractive opportunities to make available appropriate and effective curricula for students with special needs or interests. They can address different study skills and learning techniques. Team teaching can also offset the danger of imposing ideas, values, and mindsets on minorities or less powerful ethnic groups. Teachers of different backgrounds can culturally enrich one another and students.

Advantages of Team teaching:

Students do not all learn at the same rate. Periods of equal length are not appropriate for all learning situations. Educators are no longer dealing primarily with top-down transmission of the tried and true by the mature and experienced teacher to the young, immature, and inexperienced pupil in the single-subject

classroom. Schools are moving toward the inclusion of another whole dimension of learning: the lateral transmission to every sentient member of society of what has just been discovered, invented, created, manufactured, or marketed. For this, team members with different areas of expertise are invaluable.

Of course, team teaching is not the only answer to all problems plaguing teachers, students, and administrators. It requires planning, skilled management, willingness to risk change and even failure, humility, open-mindedness, imagination, and creativity. But the results are worth it.

Teamwork improves the quality of teaching as various experts approach the same topic from different angles: theory and practice, past and present, different genders or ethnic backgrounds. Teacher strengths are combined and weaknesses are remedied. Poor teachers can be observed, critiqued, and improved by the other team members in a nonthreatening, supportive context. The evaluation done by a team of teachers will be more insightful and balanced than the introspection and self-evaluation of an individual teacher.

Working in teams spreads responsibility, encourages creativity, deepens friendships, and builds community among teachers. Teachers complement one another. They share insights, propose new approaches, and challenge assumptions. They learn new perspectives and insights, techniques and values from watching one another. Students enter into conversations between them as they debate, disagree with premises or conclusions, raise new questions, and point out consequences. Contrasting viewpoints encourage more active class participation and independent thinking from students, especially if there is team balance for gender, race, culture, and age. Team teaching is particularly effective with older and underprepared students when it moves beyond communicating facts to tap into their life experience.

The team cuts teaching burdens and boosts morale. The presence of another teacher reduces student-teacher personality problems. In an emergency one team member can attend to the problem while the class goes on. Sharing in decision-making bolsters self-confidence. As teachers see the quality of teaching and learning improve, their self-esteem and happiness grow. This aids in recruiting and keeping faculty.

Disadvantages of Team Teaching:

Team teaching is not always successful. Some teachers are rigid personality types or may be wedded to a single method. Some simply dislike the other teachers on the team. Some do not want to risk humiliation and discouragement at possible failures. Some fear they will be expected to do more work for the same salary. Others are unwilling to share the spotlight or their pet ideas or to lose total control.

Team teaching makes more demands on time and energy. Members must arrange mutually agreeable times for planning and evaluation. Discussions can be draining and group decisions take longer. Rethinking the courses to accommodate the team-teaching method is often inconvenient.

Opposition may also come from students, parents, and administrators who may resist change of any sort. Some students flourish in a highly structured environment that favors repetition. Some are confused by conflicting opinions. Too much variety may hinder habit formation.

Salaries may have to reflect the additional responsibilities undertaken by team members. Team leaders may need some form of bonus. Such costs could be met by enlarging some class sizes. Nonprofessional staff members could take over some responsibilities.

-PERMISSIVE STYLE: BRAIN STORMING, GROUP DISCUSSION, PANEL DISCUSSION, PROJECT, SEMINAR, WORKSHOP AND SYMPOSIUM.

WHAT IS PERMISSIVE STYLE OF TEACHING?

Permissive teaching strategies are a type of student-centered teaching, because they are focused on letting the students run the show. The students choose what and how to learn, and are supported in their learning by the teacher. But the ultimate decisions about learning are made by the students.

To understand permissive teaching better, let's look at an example. Don is working with his class on learning about the Battle of Gettysburg. He can approach this many ways. The traditional way might be to give a lecture on the battle, or to give the students reading materials and questions to answer from the reading materials.

But in a permissive classroom, Don will approach the topic differently. For example, he might make several different articles about Gettysburg available to his students. He could have the students make their own list of questions that they want answered about the Battle of Gettysburg, and then have them choose articles to read that are likely to answer their questions.

Permissive teaching strategies are a type of **student-centered** teaching, because they are focused on letting the students run the show. The students choose what and how to learn, and are supported in their learning by the teacher. But the ultimate decisions about learning are made by the students.

Teachers in this category are often “too nice.” They want students to like them and they want to be helpful, so they are warm and supportive but not very good at setting limits. Permissive teachers may

focus on effort while de-emphasizing the quality of students' productions. Disruptive behavior may be ignored or handled with weak, soft-spoken "reprimands" or pleading. While warmth and support are good qualities, students still appreciate discipline even if they don't show it. The cost of the permissive style is a classroom that is out of control. Constructive learning does not flow well. While students may describe a permissive teacher as "nice and easy", when push comes to shove they do not feel that they can trust her to take care of problem situations.

Another con about the permissive style of management is that students need and many times want structure. This gives them a sense of what to do, and how to accomplish it. Students also desire to be disciplined. Contrary to what many believe, being disciplined actually gives the students a sense of comfort that the teacher actually cares and that it is not acceptable to do certain behaviors (Classroom Management Styles) . I stated above that freedom in the classroom will allow students to grow and sometimes become leaders. This can also take a turn for the worse. Students in a permissive style classroom can take the reins from the teacher and go the total opposite direction the teacher may have wanted. Students may think that they are doing the assignment or project right because the teacher did not lay out the rules and the objectives for a task. This is where giving the students too much freedom to make their own decisions can hurt the students and also the class as a whole.

BRAIN STORMING:

What is Brainstorming?

It is a group creativity technique that was designed to generate a large number of ideas for the solution of a problem. Problem solving is a process to choose and use the effective and beneficial tool and behaviours among the different potentialities to reach the target. It contains scientific method, critical thinking, taking decision, examining and reflective thinking. This method is used in the process of solving a problem to generalize or to make synthesis. It provides students to face the problems boldly and to deal with it in a scientific approach. It helps students to adopt the view of benefit from others ideas and to help each other.

According to **Oxford Dictionary**, "Brainstorming is a spontaneous group discussion to produce ideas and ways of solving problems".

According to **Alex Faickney Osborn**, Brainstorming is most effective in group than individual working alone in generating ideas.

It is relaxed, informal approached to problem solving with lateral thinking. No criticism of idea and free rein is given to people. Here people able to think more freely and move into new areas of thought and create numerous ideas and solutions.

Types of Brainstorming:

1. Individual Brainstorming
2. Group Brainstorming

Uses of Brainstorming:

1. Advertising campaigns.
2. Market strategy and methods.
3. Research technique
4. Writing documents and articles.
5. Management methods.

GROUP DISCUSSION:

What is a Group Discussion?

An average Group Discussion usually features 10 to 15 participants. The GD process begins by the announcement of the topic to the group, which is (usually) followed by a preparation time of 3 to 5 minutes. More than 5 minutes' preparation time may be given only if the GD is a case-study discussion, and has a long case statement.

At the end of the preparation time, the panel signals the group to commence the discussion, and from then on plays the role of a non-participating observer. This means that the discussion is not moderated or 'anchored' by a panelist. The group members must discuss the topic as they deem appropriate without any kind of suggestion from the panel. The panel expects no particular order of speakers to be followed or a minimum or maximum duration of speaking to be followed by individual participants.

The average duration of most GDs is 15 minutes (not including the prep time). In some exceptional cases, the GD may continue for up to 45 minutes. One must remember that the longer the GD goes on, the more seriously the panel looks at the quality of the content (facts, analysis, explanation and argument) of the participant.

The panel usually consists 3 or 4 panelists, who look at various aspects of the participants' content and delivery. Please remember that the panelists may end the GD whenever they want to, and also extend the GD for as much as they want to. Nobody among the participants is supposed to keep time for the group or act on the assumption that the GD will end after the 15th minute.

The GD ends in either of the two ways: first, the panel may abruptly stop the GD and announce the end of the process; second, they may ask a participant (or more than one participant) to summarise the GD. If you are asked to summarise, do remember what summary means – your summary cannot have anything in it that was not discussed during the GD. I especially stress this point as the participants who have been mostly quiet during the GD are usually asked to summarise it, and they tend to take this opportunity to air their views which are not presented during the discussion. The summary must be an objective recapitulation of the important points brought up during the discussion, and the conclusion of the discussion.

What are the various types of Group Discussions?

Most Group Discussions can be divided into 3 kinds:
A) Topical Group Discussions, which are based on current affairs or 'static' matters – for example, a GD on the topic of the recent demonetization of Rs 500 and Rs 1000 notes would be the former, whereas a GD on whether India should adopt a presidential model of democracy would be the latter, as it has no limitation of a time frame.
B) Case-studies, which present the group with a complex business situation that requires a decision to be made. Such cases usually have multiple problems embedded in the given situation, and both the individual participants and the group are required to analyse the situation, identify the problems, and suggest a way out.
C) Abstract Group Discussions, which are called so because they offer us no definite framework of the topic, and hence no definite direction to take in the discussion. Instead, the participants are required to interpret the topic in their own ways and demonstrate innovative thinking in doing so. Such topics could be single-worded, such as 'Blue', or a short cryptic sentence, or even an image. Contrary to popular perception, no one kind of GD is necessarily easier or more difficult than any other, as the quality of response in any case depends largely on the preparation of the individual and the way they generally think.

What is the evaluation criterion in a Group Discussion?

The evaluation of participants happens in two broad perspective: **Individual qualities and group skills**.

Individual qualities refer to the competencies that you may demonstrate in or outside the context of a group. They include the following:
A) Content: What you say during the discussion is looked into from two perspectives – relevance and comprehensiveness. It is possible that a participant has talked a great deal in a GD, but he or she may have deviated from the topic significantly, in which case the content is deemed largely irrelevant without the possibility of further evaluation. If the content has been relevant to the topic, the panel examines whether your treatment of the topic is superficial or in-depth, distinction we shall discuss in detail in the next few posts.
B) Analytical skills: The panel is of course interested in your facts, but they also like to see whether or not you can explore the 'why' and the 'how' of the subject matter. This is put to the sternest test in a case-study topic.
C) Reasoning skills: The panel looks at how you support your standpoints, and how you respond to those

of the others, how effectively you can 'strengthen or weaken' an argument, how logical you are in your overall approach to the topic.

D) Organisation skills: You may have the facts, the supports, the explanations, but are you able to present them in the right order so as to maximise the impact of your good content? The panel wants to examine this.

E) Communication skills: You may have exhibited all the skills stated above, but can you get your point across to someone in a simple (not simplistic) language they understand, with relevant illustrations they can identify with?

F) Creativity: Are you able to bring to the table a novel perspective on the topic? Can you look at a problem differently from ten other participants and suggest a path-breaking solution? Can you interpret an abstract topic in ways the others cannot? If yes, the panel looks at you as someone with one of the rarest of human qualities.

You may have observed that the above skills and qualities can also be directly applied in the evaluation of the response.

On the other hand, the **group skills** refer to those skills which can only be evaluated in the context of a group. They include the following:

A) Listening skill: The panel constantly observes whether or not every participant is listening to the discussion. In my experience, most participants are concerned only with speaking, and feel that they are done with the job as soon as they have spoken, which is contrary to the spirit of a discussion. There are many ways a panel may infer that a participant is a poor listener, such as a lack of eye contact with the group, or a poor summary at the end. It is one of the rarest skills, and a must for a would-be manager.

B) Leadership quality: In highly-charged discussions, one or two participants usually play the role of the anchor, in that they define the topic appropriately, offer the initial analysis of the keywords of the topic, and also try to hold the group together in pursuit of a common goal. Such individuals could demonstrate effective leadership, and score some extra points. However, one cannot score anything extra simply because one spoke first in the group, or was the loudest.

C) Body language: While assessing the body language, the panel primarily looks at eye contact and hand movements. The speaker must maintain a consistent eye contact with the entire group as he or she speaks, and the listeners must reciprocate. If the either doesn't happen, you allow the panel to infer whatever they wish to – from a lack of confidence to a lack of interest in the GD to the lack of concern for others. Hand movements are to your speech what punctuation is to your writing. If used wisely they beautifully enhance the effect of your words; if used unwisely they attract unnecessary attention and distract the listener from your words. I recommend that you simply 'free' your hands. Do not engage them with

something pointless such as playing with the pen, or tapping on the desk, or running through your hair (common among female participants). The body has an intelligence of its own. Just leave your hands alone and focus on the topic. The hands will start moving naturally. Please remember that body language cannot be faked. A skilled observer will quickly see through such deception. Just focus on the task at hand and the body will obediently follow. The panel may also pay attention to your voice modulation. A monotonous pitch may reduce the impact of even the most powerful words unless you are a Tommy Lee Jones! Vary the pitch of your voice in order to create emphasis wherever needed.
D) Group Behaviour: This is usually assessed in a broad distinction – assertive or aggressive. Avoid the latter no matter what. Assertiveness is a rational display of conviction of one's thoughts, while aggressiveness is a display of domination through subtle intimidation. Assertiveness allows room for flexibility – which is a desired trait – while aggressiveness leads to irrational rigidity of viewpoint. Please remember that B-schools are looking for sensitive individuals, not skinhead bouncers.

Now that you know how you will be evaluated, focus on specific areas of improvement during your practice GDs. Identify with the help of your trainer the strengths and weaknesses. Set clear goals for yourselves, and do not lose the sight of them during your practice.

PANEL DISCUSSION:

What is Panel Discussion?

The panel discussion for the first time was used by Henry Adber Street in 1929. He organized a discussion for small group to definite period for the audience. At the end of the discussion audience also participated. The important questions were put from the topic and then the expert from the panel answer the questions and certain points are clarified which are not included in the discussion. Several other persons had used this technique.

Generally these types of panel discussion are organized on television and radio.

Objectives of Panel Discussion:

1. To provide information and new facts.
2. To analyse the current problem different angle.
3. To identify the values.
4. To organize for mental recreation.

Advantage of Panel Discussion:

1. This technique encourages social learning.
2. Trough this technique higher cognitive and effective objectives are achieved.
3. It is used to develop the ability of problem solving and logical thinking.
4. It develops the interests and right type of attitude towards the problem.

5. It develops the capacity to respect others ideas and feelings and ability of tolerances.

PROJECT:

What is Project?

The project method is a modern contribution to educational theory and practice. It is a result at John Dewey's Philosophy of education and is a natural extension of the problem solving method. But the credit for initiating this method goes to Prof. William H.Kilpatrick who has defined it as a whole-hearted purposeful activity, proceeding in a social environment''. Dr. J.A. Stevenson who perfected it as a method of teaching says, ''A project is a problematic act carried to completion in its natural setting.'' Ballard gives another definition when he says, ''A project is a bit of real life that has been important into the school''. According to C.V. Good, ''A project is a significant unit activity, having educational value and aimed at one or more definite goals of understanding. It involves investigation and solution of problems. It is planned and carried to completion by the pupils and the teacher in a natural life-like manner''.

If we analyse the above definitions, we shall find that project method lays great emphasis on actual activity of the students. In this method, the curriculum, content and techniques of teaching are considered from the student's point of view.

Basic principles or features of project Method:

1) The principle of purpose: No aimless activity can be taken up in Project method. Activity should be purposeful and interesting.

2) The principle of activity: A child is active by nature. The Project Method provides ample opportunities to people to think and plan things independently and then carry out the project in cooperation with others,

3. The principle of experience:

The project method enables the child to work in groups. He thus learns to cooperate with others and to share his interest and purposes,

4) The principle of reality:

In this method, students are provided with opportunities to exercise their power in real life situation.

5) The principle of freedom: In project method, the choice of activity should be spontaneous and no forced imposition is desired, it should be left to the students in an atmosphere on freedom. Students choose their activity according to his own capacity and a felt purpose.

6. The principle of utility:

The knowledge gained through activity must be useful and practical. Experiences gained through projects ensure utility because they are carried out under natural settings.

Students can feel that their effort does not go waste and the activity must end in something concrete from the educational point of view.

Steps involved in the project Method:

1. Providing a situation: A project is never to be forced upon pupils. The teacher's job is to provide a situation according to the interest and aptitude of the pupils which may give them a spontaneous urge to carry it out.

2. Selecting a project: After a situation has been provided, the next step is the selection of a good project. Only such a project should be selected as may satisfy some real need of the pupils. The project must be chosen according to the capacities of the pupils.

3. Planning: Once a suitable project has been selected, the next step is to prepare a plan for its execution. Entire planning is to be done by the pupils under the guidance of the teacher, after a good deal of discussion. Each student should be encouraged to participate in the discussion, and offer his suggestion.

4. Execution: When the plan is ready, the teacher should encourage the pupils to go ahead and put the plan into practice. He should ask the pupils to assign duties and distribute work among themselves according to their individual capacity and interest. Pupils should work in co-operation with one another till the project is complete.

5. Judging and evaluating: After the project is executed, students should be asked to review their work, they should identify their mistakes if any, and find out whether they proceeded in the right direction according to plan.

6. Recording: Students should be asked to maintain a project book in which they should put down a complete record of all the activities related with the project. This record will include the selection of the project, its planning, discussions held, duties assigned, references and books consulted, information gathered, difficulties felt, experiences gained, guidance sought etc. Important points for future reference and guidance are also to be noted down.

ADVANTAGES OF THE PROJECT METHOD:

1) It is based on the laws of learning: It is in accordance with the psychological laws of learning i.e., the law of readiness, the law of exercise and the law of effect. The law of readiness requires the pupil's mind ready for acquiring knowledge.

The planning and selection of the project, prepares the child's mind for the work.

The law of exercise requires the child to practice whatever he has learnt. This method is not only meant for learning by doing but for learning by living. The actual execution of the project gives effective experience. The law of effect requires that learning should be accompanied by satisfaction and purpose. By actually being involved in the project execution, the student gets pleasure and satisfaction.

2) This method is economical: The students select their own project according to their interest and capacity. So it gives the best results in the shortest possible time and least wastage of money and energy.

3. It provides training for democratic way of life: Pupils work with each other under this method for a common purpose. Thus they acquire foresight, power of judgement, independence of thought and action, initiative, responsibility, resourcefulness, tolerance, self-respect, etc. All these are useful social habits leading to good training in citizenship and democratic way of life.

4. Dignity of labour: Since the pupils are required to do all types of work by themselves, it upholds dignity of labour.

5. **Correlation Knowledge**: Correlation Knowledge is gained through this method in a correlated manner in a natural setting and not in water–tight compartments.

6) No cramming or rate memory: Children learn by doing themselves. No finished product is supplied to them. A problem solving attitude develops within the students and they don't have to memorize matters forcefully in an abstract form.

7) It imparts education in real life situation: Projects are related to everyday needs and experiences of the child and so knowledge is gained in real, practical situations.

8) Individual skill and interests are aroused: Students having wide varieties of skills and interests can select projects of their own choice. Very rarely is their any student who finds no challenge in any project whatsoever.

9) Incidental learning: In order to attain fair accuracy and success in the project, pupils seek answers and solutions to many questions and problems and thus come across a lot of incidental learning.

LIMITATIONS OF PROJECT METHOD:

1) Knowledge comes in a haphazard way in project Method: Systematic arrangement of subject matter is not possible because students proceed initially with a problem related to the subject matter and in the course of solving the problem, knowledge results in a natural, practical setting.

2. It sometimes creates heavy load on the teacher: The teacher has to act as a guide of the project and take leadership in conducting all stages of actions involved in the project like selecting a project, planning, guiding execution, evaluating, recording etc.

3) It may result in disorganization of School schedule:

It is not possible to follow any fixed schedule while implementing the project work. Students sometimes may have to work outside school campus. Thus frequent deviation from normal school time-table takes place.

4) It may involve a lot of expenditure: For successful completion of a project, a lot of materials and fund is required which may not be affordable by all schools.

5) Balanced learning for all students may not be possible: A few bright students may be inclined to take all the responsibility upon themselves as they are more capable than others while weaker students may remain.

6. Comparatively inactive in a mixed group: Even after having a few limitations, the project method gives ample opportunity to all students to come out of the monotonous classroom lectures, become active and work in a team to solve academic problems in a natural atmosphere.

SEMINAR:

What is Seminar?

A seminar as an instructional technique involves generating situation for a group to have guided interaction among themselves on a theme which is generally presented to the group by one or more members. The person presents the theme thoroughly before hand. This would mean selection of relevant materials at its organization. The collected material is put in the form of paper which is circulated among the participants in advance or before paper reading. It provides the structure of the theme to facilitate its communication.

Thus seminar is an instructional technique of higher learning which involves paper reading on a theme and followed by the group discussion to clarify the complex aspects of the theme.

OBJECTIVES OF SEMINAR:

1. To develop the higher cognitive abilities.
2. To develop the ability of responding in this manner would involve higher cognitive abilities.
3. To develop the ability of keen observation experiences, felling and to present **the theme effectively.**
4. To develop the ability to seek clarification and defend the ideas of others efficiently.

TYPES OF SEMINAR

1. **Mini Seminar:** A seminar organized to discuss a topic in class is known as mini seminar. The purpose of mini seminar is to train the students for organizing the seminar and play different roles.
2. **Main Seminar:** Such seminar is organized at departmental level or institutional level on a major theme.
3. **National Seminar:** A national seminar is organized by an association or organization.
4. **International Seminar:** International Seminar is organized by UNESCO and other international organizations.

ADVANTAGES OF SEMINAR:

1. Due to the process of stimulation of thinking brought about through interaction, seminar developed different higher cognitive abilities.

2. The effect of seminar attributes the norms of behavior for the group in the seminar situations.
3. The natural way of learning trough seminar establishes an important place for this technique at all level of instruction.
4. Seminar ha great instructional value as it makes the instruction learner centred and provides for learning through enquiry which is based on a very natural characteristics of inquisitiveness in human.

WORKSHOP:

What's a workshop?

Workshop is defined as an assembled group of people of 10 to 25 persons who share a common interest or problem. They meet together to improve their skill of a subject through intensive study, research, practice and discussion.

In workshop there must be complete and active involvement by the participants. The whole point of attention is to work and learn from practical experience. Workshop offers each member an opportunity to make his or her own contribution. Participants are expected to work as a reporter or a leader.

Workshops are also sometimes more diverse in terms of attendees than other events. You'll find people from different departments and fields attending workshops together, and you may find non-academics such as journalists or people in business will attend too. The best workshops have a specific, action-oriented purpose, and aim to generate some concrete answers to current problems in the field. Workshops are a good opportunity to learn new skills and to familiarize yourself with a topic you don't know well.

Objective of Workshop:

1. To achieve a higher cognitive objectives and develop psychomotor skills.

2. To learn the new innovations and practice of education.

3. To solve problems in the area of teaching education.

4. To develop the proficiency for planning and organizing teaching and instructional activities.

5. To provide a broader understanding of a topic and theme.

SYMPOSIUM:

What's a symposium?

Symposium is defined as a teaching technique that serves as an excellent method for informing the audience, crystallizing their opinion and preparing them for arriving at decision regarding a particular issue or a topic.

Symposium is a discussion method in which different viewpoints on a single aspect of a topic is discussed.

Symposium is a series of speeches on single aspect of a topic.

Objectives of Symposium:

1. To identify and understand various aspects of a theme.
2. To develop the ability arrive a decision and provide judgment for a problem.
3. To develop values and feelings regarding a problem.
4. To provide understanding to the students or listeners on a theme or problem to specifically develop certain values and feelings.
5. To enable listeners from policies regarding a theme or a problem.
6. To investigate a problem from several point of view.
7. To boost students abilities to speak in the group.
8. To encourage the students to study independently.

Advantages of Symposium:

3. Symposium can be used to address a large group or class.
4. This method can be frequently used to present broad topics for discussion at conventions and organization of meetings.
5. In symposium, the principle of organization is high as the speeches are prepared beforehand.
6. It gives a deeper insight into a topic.
7. It directs the student's t continuous independent study.
8. This method is can be used in political meeting.

Disadvantages of Symposium:

1. Symposium does not provide adequate opportunity for all the students to participate actively. It has limited audience participation.
2. The speech is limited to 10 to 20 minutes.
3. Question and answer session is limited to 3 to 4 minutes.
4. It has possibility of overlapping of subjects.

- TEACHING TECHNIQUES AND SKILLS–MICROTEACHING.

MICRO TEACHING

What is Micro Teaching?

Micro Teaching is a procedure in which a student-teacher or trainee teacher practices teaching with a reduced number of students in a reduced period of time with an emphasis on a narrow and specific teaching skill.

Definition of Micro Teaching

There are many definitions of microteaching given by scholars. Some of the micro-teaching definitions are:

D.W Allen (1996): According to D.W Allen "Microteaching is a scaled-down teaching encounter in class size and time".

R.N Bush (1968): "Micro Teaching is a teacher education technique which allows the teachers to apply clearly defined teaching skills to carefully prepared lessons in a planned series of five to ten minutes to encounter with real students, often with an opportunity to observe the result on Video Tape."

L.C Singh (1977): Microteaching is a scaled-down teaching encounter in which a teacher, a small unit to a group of 5 students for a small period of 5 to 20 minutes. Such a situation offers a helpful setting for an experienced or unexperienced teacher to acquire new teaching skills and to refine old ones.

N.K. Jangira and Azit Singh (1982): "Micro teaching is a training set for the student-teacher where complexities of the normal classroom teaching are reduced by:"

- Practicing one component skill at a time.

- Reducing the size of 5 to 10 pupils.
- Limiting the content to a single concept.
- Reducing the duration of the lesson to 5 - 10 minutes.

B.K. Passi and M.S Lalita (1976): "Microteaching is a training technique that requires student teachers to teach a single concept using specified teaching skills to a small number of students in a short duration of time".

M.C. Alleese and Unwin (1970): "The term micro-teaching is most often applied to the use of closed-circuit television to give immediate feedback to a trainee teacher's performance in a simplified environment."

OBJECTIVES OF MICRO TEACHING

Some of the Aims and Objectives of Microteaching are:

- To enable teacher trainees to learn and assimilate new teaching skills under controlled conditions.
- The second objective is to enable teacher trainees to master a number of teaching skills.
- The last one is to enable teacher trainees to gain confidence in teaching.

CHARACTERISTICS AND FEATURES OF MICRO TEACHING

The main characteristics of microteaching are:

1. It is a highly individualized training device and an experiment in the field of teacher education which has been incorporated in the practice of teaching schedule.
2. The students are providing immediate feedback in terms of peer group feedback, tape recorder, or CCTV.
3. Micro teaching is a student teaching skill training technique and not a teaching technique or method.
4. Practice one skill at a time.
5. Reducing the class size to 5 to 10 pupils or students.
6. Limiting the content to a single concept.
7. Microteaching is micro in the sense that it scales down the complexities of real teaching.
8. Micro teaching advocates the choice and practice of one skill at a time.

Steps of Micro Teaching

The microteaching program involves the following 9 Steps:

- Step 1: Orientation
- Step 2: Discussion of Teaching Skill
- Step 3: Selection of a particular teaching skill
- Step 4: The practice of the Skill
- Step 5: Proving the feedback
- Step 6: Re-Planning
- Step 7: Re-teaching
- Step 8: Re-feedback
- Step 9: Repetition of the micro-teaching cycle

Step 1: Orientation

In this step particular skill to be practiced is explained to the teacher trainees in terms of the purpose and components of the skill with suitable examples. At the beginning the student teachers should be given the necessary theoretical background about micro teaching by having a free and fair discussion of aspects like those given below:

- Concept of micro-teaching
- significance of using microteaching
- The procedure of micro teaching
- Requirements and Strategies for adopting micro-teaching techniques.

Step 2: Discussion of Teaching Skill

In this step, the teacher trainee gives the **demonstration** of the skill of micro teaching in simulated conditions to the teacher trainees. In this step, the knowledge and understanding of the following aspects are to be developed.

- Analysis of teaching into component teaching skills.
- The discussion of the rationale and role of these teaching skills in teaching.
- Discussion about the component teaching behaviors comprising various teaching skills.

Step 3: Selection of a particular teaching skill

In this step, the teacher trainee plans a short lesson plan on the basis of the demonstrated skill for his or her practice. They are also provided with necessary orientation and processing material for the practice of that skill.

Step 4: The practice of the Skill

In this step, the trainee teachers **teach the lesson to a small group of students**. His / Her Lesson is supervised by the supervisor and peers where possible. The student-teacher may also have his lesson taped on a video or audiotape.

Step 5: Proving the feedback

On the basis of the observation of a lesson, the supervisor gives feedback to a teacher trainee. The supervisor reinforces the instances of effective use of the skill and draws the attention of the teacher trainee to the various points where he could not do well. Whenever possible the help may also be taken from the various gadgets like audiotapes, videotapes, and closed-circuit televisions.

Step 6: Re-Planning

After getting the feedback given by the supervisor the teacher trainee re-plans the lesson plan in order to use the skill in a more effective manner in the second trail.

Step 7: Re-teaching

In this step, the revised lesson is taught to another comparable group of students. In this session of 6 minutes, the student-teacher re-teaches his micro lesson on the basis of his prepared plan or rearranged setting.

Step 8: Re-feedback

In this, the supervisor observes the re-teach lesson and gives re-feedback to the teacher trainee with convincing arguments and reasons.

Step 9: Repetition of the microteaching cycle

This is the last step of micro-teaching in which the **"teach-re-teach" cycle** may be repeated several times till adequate mastery level is achieved by the trainee.

Micro Teaching Cycle

There are 6 steps that are generally involved in the micro-teaching cycle. These Six Steps are:

1. Plan
2. Teach
3. Feedback
4. Re-plan
5. Re-teach
6. Re-feedback

Plan

It is the **first step** in the micro-teaching cycle. The plan involves the **selection of the topic** and related content of such a nature in which the use of components of the skill under practice may be made easily and conveniently. The topic is analyzed into different activities of the teacher and students. These activities are planned in such a logical sequence where the maximum application of the components of skill is possible.

Teach

Teaching involves the attempts of the teacher trainee to use the components of the skills in suitable situations of teaching-learning as per his / her planning of activities. If the situation is different and it is not as visualized as per the demand of the situation in the class. He / She should have the courage and confidence to handle the situation arising in the class effectively.

Feedback

The term feedback refers to **giving information** to the teacher trainee about his performance. The information includes the points of strength as well as weaknesses relating to his/her performance. This helps the teacher trainee to improve his / her performance in the desired direction.

Re-Plan

The teacher trainee re-plans his lesson, incorporation the points of strength and removing the points which are not skillfully handled during a teaching in the last attempt either on the same topic suiting to the teacher trainee for improvement.

Re-Teach

Re-Teaching involves teaching to the same group of students if the topic is changed or to a different group of students if the topic is the same. This is done to remove boredom or monotony of the pupil. The teacher trainee teaches the class with renewed courage and confidence to perform better than the last attempt.

Re-Feedback

It is the **most important component** of micro-teaching which is used for behavior modification of teacher trainees in the desired direction in each and every skill practice.

What is the time duration for the micro teaching?

- **Teaching Time Duration -** 6 Minutes
- **Feedback Duration -** 6 Minutes
- **Re-planning -** 12 minutes
- **Re-teaching -** 6 minutes
- **Re feedback -** 6 minutes

Principles of Micro Teaching

The principles underlie the concept of microteaching are:

- Capabilities
- Intrinsic Motivation
- Goals are to be realistically set

- Goals are to be realistically set
- One element in one time
- Active Participation
- Information and Knowledge
- Immediate Feedback
- Experience in various skills

Capabilities

The first principle of microteaching is that the capabilities of the learner must be considered when a decision of what to teach is made. In this principle, the trainee is given the opportunity to select a lesson content in an area of his greatest competence so that he may feel at ease with the subject matter.

Intrinsic Motivation

The learner must be motivated, intrinsically. Intrinsic motivation in the context of micro-teaching is created through the cognitive and effective discrepancy between his ideas, self-concept a teacher, and his real teaching.

Goals are to be realistically set

In this principle of microteaching, an attempt is made to modify only modifiable behavior which trainee wants to change.

One Element in One Time

Only one element of modifiable behavior is to be worked on at a time. In pursuance of this principle, in any micro teaching session, a trainee practice one skill at a time and moves to the next only after he has achieved mastery over it.

Active Participation

In microteaching, active participation by the students is necessary in order to modify his behavior substantially. According to this principle, in any micro-teaching situation, a trainee teacher engages actively in practicing a skill in which he wants to be perfect.

Information and Knowledge

Knowledge and information about one's performance help the learner. According to this principle, if any micro teaching session, a trainee teacher is provided knowledge and information about his / her own performance by the supervisor with or without the help of audio and videotapes. The transfer of learning will become better if the learner gets the feedback related to his performance.

Immediate Feedback

Immediate feedback informs the trainee teacher of their effective practice. So according to this principle, in any microteaching setting, a trainee teacher is provided immediate feedback regarding his performance, thereby eliminating any chance of wrong practice.

Experience in various skills

In micro teaching, students are provided experience in various skills over a considerable length of time.

Advantages of Micro Teaching

1. Microteaching helps us in developing and mastering important teaching skills.
2. It is very effective in modifying the behavior of the teacher.
3. Another advantage is that it employs real teaching situations for developing skills.
4. As micro teaching is scaled-down teaching, it reduces the complexity of the teaching process.
5. It helps us in getting deeper knowledge regarding the art and science of teaching.
6. It is an individualized teacher training technique.
7. It helps us in accomplishing specific teacher competencies.

Disadvantages of Micro Teaching

1. First Demerit of microteaching is that it is skill-oriented; contents are not emphasized.
2. There is a special classroom setting required for micro teaching.
3. Only a few specific skills are covered.
4. It deviates from the normal classroom teaching.
5. The number of opportunities for re-teaching and re-planning for a large number of trainee teachers is not possible.
6. It is a time-consuming teaching technique.
7. Many administrative problems arise while arranging micro lessons.

Unit 4: Classroom transaction:

- Developing lesson plan.
- Herbartian steps of lesson planning
- Developing teaching aids
- Methods of teaching different subjects – social science, mathematics, science, language

Concept of Developing Lesson Plan:

A lesson plan is the instructor's road map of what students need to learn and how it will be done effectively during the class time. Before you plan your lesson, you will first need to identify the learning objectives for the class meeting. Then, you can design appropriate learning activities and develop strategies to obtain feedback on student learning.

Every teacher is required to prepare a lesson plan because this is considered as guide for the day's lessons. Lesson planning is important because it gives the teacher a concrete direction of what she/he wants to take up for the day. Research has shown that student learning is correlated to teacher planning. One major explanation is that when plan is ready, teachers can focus on its implementation. When teachers do not have to think so much about what they need to do next they are able to focus on other parts of the lesson.

Lesson planning is important because it helps teachers ensure that the day-to-day activities that go on in their classrooms are providing students with an adequate level of long –term progress toward the goals outlined in their scope and sequence, as well as their individual education plans when necessary.

An effective lesson plan includes several elements: learning objectives, quality questions, supplies and activities. It is important to have the learning objectives in mind because those should drive the development and implementation of all activities in the classroom. Quality questions are inquiries that the teacher plans to direct at the students over the course of the lesson. Sometimes these questions are rhetoric in nature, but more often they are designed to help the student think at a higher level than simple memorization and comprehension. It is important to come up with a plan for assessment to determine whether the class has met its targets.

Lesson planning is a complex yet essential part of the teaching process that changes over time as teachers gain more hands-on experience.

A successful lesson plan addresses and integrates these three key components:

- Objectives for student learning
- Teaching/learning activities
- Strategies to check student understanding

Specifying concrete objectives for student learning will help you determine the kinds of teaching and learning activities you will use in class, while those activities will define how you will check whether the learning objectives have been accomplished.

Organized panning is always plays a quite sustainable role in the execution of any task in our life. It is not only caters to the proper utilization of the aims or purpose of doing that task but also helps in proper utilization of the time and energy on the part of human and material resources. It is equally true for the process of teaching- learning. The teachers who planned their work properly prove quite efficient and effective in teaching. A subject teacher should always pay due consideration to the wise planning of his teaching and instructional work during the whole session. He may have three types of schemes for such panning.

1. Yearly Lesson planning
2. Unit lesson planning
3. Daily lesson planning

DEFINITION LESSON PLAN

1. According to ***Bossing***, "Lesson plan is the title given to a statement of the achievement to be realized and the specific means by which these are to be attained as a result of the activities engaged in during the period".

2. According to ***Binging and Binging*** "Daily lesson planning involves defining the objectives, selecting and arranging the subject matter and determining the method and procedure".

3.According to **Stands** – A lesson is "A plan of action"

NEED AND IMPORTANCE OF LESSON PLANNING

 Through lesson planning the subject is organized properly.

 It keeps the teacher free from the faults of thoughtless teaching.

 It makes the proper atmosphere for learning process.

 The teacher also gets a clear idea about when they should start evaluation and when they should proceed to the next lesson.

- Lesson plans helps in organized teaching and saves time.
- Lesson plans allow the teacher to apply appropriate strategy.
- Teacher will be more prepared and confident while teaching the lesson.

1. **Suitable Environment:** In a lesson plan objectives are fixed and the teaching strategies, techniques and material aid etc. are decided beforehand. When a proper teaching environment is created, the teaching task goes in a much planned way.
2. **Based on previous knowledge:** In preparing lesson plans, the teacher presents new knowledge as the basis of previous knowledge of the pupils. This enables the pupils to gain the knowledge very conveniently on one side, the teacher succeeds in acquiring his objective on the other side.
3. **Psychological teaching:** The teacher uses proper teaching strategies, techniques and instruments keeping in mind the interests, aptitudes, needs, capacities and abilities of the pupils for teaching them when the lesson plans are prepared. This makes the teaching more psychological.
4. **Limitation of subject matter:** In a lesson plan, the subject matter becomes limited. This enables the teacher to give up irrelevant things. He only remembers definite and limited matter and its presentation before the pupils become easy. The pupils also receive the knowledge in a systematic and organized way.
5. **Determination of activities:** In a lesson plan, the teachers and pupils activities are pre-decided according to the class level. This makes the teaching activities meaningful and purposeful.
6. **Preparation of material aids:** At the time of preparing a lesson plan, the teacher decides what facts are to be clarified by what strategies, techniques and instruments and what aid is to be used at what time. This prepares the necessary and effective aids before starting the teaching task.
7. **Developing of teaching skill:** The lesson plan acts as an important means for developing teaching skills in the pupil-teacher.
8. **Use of Theoretical knowledge:** Whatever the pupil-teachers get theoretical knowledge during their training period, that knowledge.
9. **Teaching with confidence:** The preparation of a lesson plan makes the subject and other allied subjects more clearly to the teachers. This arouses self confidence among them. When a teacher gets developed the feeling of self-confidence, then he presents the new knowledge to the pupils with more enthusiasm and pleasure.
10. **Discipline in class:** By preparing lesson plan, the teacher becomes aware of what, when and how much is to be done in the class. This absorbs all the pupils in their respective tasks. Hence, it results in appreciable classroom discipline.
11. **Time sense:** Lesson plan is prepared allotting to the duration of the periods.

12. **Teaching from memory level to reflective level:** In an ideal lesson plan, development and thought provoking questions should be asked. Also there should be an effort to stretch the teaching from memory level to reflective level.

CHARACTERISTICS OF GOOD LESSON PLANNING

Learning to plan is just like any other skill. It takes time and practice. At first lesson planning may seem like a time consuming process but by creating detailed lesson plans as a beginner teacher one is able to develop routines that can become more automatic over time.

1. **Objective based:** The lesson plan must be based on one or the other objective. While writing this, objectives should be written and defined clearly because its main objective is to achieve some goal.
2. **Decision about appropriate material aids:** The material aid an important means of the teacher. Hence correct decision regarding the charts, graphs, pictures, diagrams and maps should be taken while preparing ideal lesson plan and these should be marked at proper places which a teacher is to use them while teaching.
3. **Based on previous knowledge:** An ideal lesson plan should be based on the previous knowledge of the pupils. This will avoid difficulty in acquiring new knowledge by the pupils.
4. **Division of lesson plan in units:** Lessons are of three types (a) knowledge lesson (b) skill lesson (c) appreciation lesson. In an ideal lesson plan all the relevant steps of these three types of lesson plan should be determined. Each lesson should be divided into suitable units so that the pupils may understand the lesson gradually.
5. **Simplicity of activities:** In an ideal lesson plan, the simplicity of the lesson plan and clarity of thoughts should be according to the mental level of the pupils.
6. **Determination of activities:** In an ideal lesson plan, the activities of a teacher and the pupils should be determined before-hand.
7. **Home work:** There should a provision of home work in an ideal lesson plan. This will enable the pupils to learn the appreciation of the acquired knowledge.
8. **Self-evaluation:** A good lesson plan must have a suitable plan for self-criticism. The teacher should put some questions to him and find out the answer and there by judge the effectiveness of the lesson writing.
9. **Use of illustration:** Examples should be used which have relevance with the daily life of the peoples.
10. **Use of blackboard:** The blackboard summary of each and every unit should be written on the blackboard.

I have always realized that when you start teaching it is 90% planning and 10% management. But for an experienced teacher, it is 10% planning and 90% management. If, having developed a set of effective management skills and teaching routines, having experienced how to be resourceful with very

little, and above all having learned to trust your learners, you are ready to fly on your own. It's then that you will experience the (almost) unbearable lightness of teaching.

HERBARTIAN (Johann Friedrich Herbart) STEPS OF LESSON PLANNING

(German educator **Johann Friedrich Herbart (1776–1841),** an influential on American school of pedagogy of the late 19th century as the field worked towards a science of education. Herbart advocated for instruction that introduced new ideas in discrete steps. About a quarter-century after his death, Herbart's ideas were expanded in two German schools of thought that were later embodied in the method used at a practice school in Jena, which attracted educationists from the United States. Herbartianism was later replaced by new pedagogies, such as those of John Dewey**.)**

Herbart emphasized only four steps, i.e. *clarity, association, system and method*, his followers modified the four steps.

Thus, the five steps are termed as Herbartian five steps of teaching.

Preparation/Introduction

Some questions are asked from the pupils in order to test their previous knowledge so that curiosity may arouse in them for learning of new knowledge. By testing their previous experiences pupils are prepared for acquiring new knowledge.

Statement of aim

Here, the topic becomes clear to the pupils and the teacher himself is supposed to write the topic on black-board in clear words.

Presentation

The lesson is developed with the cooperation of the pupils. Opportunities are provided to pupils to learn themselves by stimulating their mental activity. The teacher tries to receive most of the point from the pupils by questioning so that the new knowledge may get related to the previous knowledge.

Comparison and Association

In this, the facts, events and application taught are related mutually by comparison to enable the pupils to understand the taught material. The teacher establishes a relationship between two subjects and also between the facts and events of one subject and the facts and events of other subject. The compares them so that the new knowledge may get stabilized and clarified in the minds of the pupils.

Generalization

Herbart termed this step as 'system'. After explaining the main lesson, the pupils are provided with opportunities to think. They formulate such principles and rules which may be used in various situations of the future life.

Application

In Application it is observed whether the acquired knowledge may be applied to the new situations. The teacher verifies this by asking recapitulate question or by providing opportunities to apply the acquired knowledge in the new situations. This stabilizes the new knowledge and validity of the rules may also be proved.

HERBARTIAN LESSON PLAN MODEL

Date……..

Class……

Period……

Subject……

Topic……..

1. General Objectives

These objectives are formulated by the teacher in his subject keeping in view the entering behaviors of the learners. For example: 1. to develop the knowledge of grammar among the students.

2. *Specific Objective*

These objectives are formulated on the basis of general objectives and considering the nature of the topic and level of students. These are specified in terms of knowledge, skill or appreciation. These objectives are written in behavioral terms. For Example: (i) Students will be able to recall the definition of noun. (ii) Students will be able to enumerate the examples of noun.

3. Introduction.

Here, the teacher employs his insight and experiences for liking new knowledge with the previous knowledge of the students. The topic is not introduced directly but it is usually emitted by the students' responses by asking introductory questions.

1. *Teaching Aids*

Audio-visual aids are selected according to the proposed topic.

2. *Previous knowledge*

Students' previous knowledge is mentioned. For example: Students are familiar with figure of speech. They know that nouns are naming words.

3. ***Statement of Aim***

The teacher gives his statement of teaching topic by incorporating the students' responses. For Example: "Today, we will study about the noun and its kinds."

7. Presentation The teacher prepares the developing questions after introducing the topic. The question are arranged in logical sequence, i.e., from simple to complex, considering the structure of the topic.

8. ***Explanation***

The teacher is supposed to explain the answers of the given developing question. As whole of the content-matter is in the question-answer form.

9. ***Black board Summary***

The teacher has to prepare the black-board summary of his teaching point and explanations.

10. ***Review Questions***

The purpose of these questions is to practice the students' learning and to evaluate their performance whether they have comprehended the teaching unit or not. These review questions are asked only after rubbing the black-board summary. For example:

Q. a. What is the definition of Noun?

Q. b. Give some examples of Noun…..

11. ***Home assignments***

At the end of the lesson plan, home assignment is given to the students on the same teaching unit. The purpose of home work is to practice, to organize and to study the topic for better understanding and retention.

ADVANTAGES

1. ***Organized Teaching***

Each step has been organized in a logical order which provides an opportunity to the fresh teacher to become aware of future mistakes. Originality is never affected and the teaching goes on in a very organized way.

2. ***Acquiring thoughts as apperception.***

Herbart believed that when the new thought related to the thoughts lying in unconscious mind of the pupils are presented, the thoughts of unconscious mind come to the conscious mind, establish relationship

with the new thought and again go to the unconscious mind. Herbart termed this material process of acquiring thoughts as apperception.

3.Use of Inductive and Deductive Methods

While presenting the new knowledge, help of various examples is sought through generalization and rules are derived. It is an inductive method. In the step application, these rules are to be executed, this is a deductive method. Thus, both indicative and deductive methods are used in this five steps approach.

4. Recapitulation

Such question is asked while recapitulating which, on answering, result in the learning and application of the acquired knowledge in new situations.

5. ***Correlation Possible***

Herbart considered entire knowledge as a single unit. The knowledge of the pupils is acquired in a single unit. This allows to establishing a correlation between previous and new knowledge and between all subjects of the curriculum.

DISADVANTAGES

1. Mechanical Method of Teaching

The use of these steps takes away the freedom of the teacher as he cannot incorporate his independent thought in any step. This reduces his originality. Hence, Herbartian approach is a mechanical method of teaching.

2. ***No Place for Individual Differences***

While using Herbartian approach. Similar questions are asked to the entire. This overlooks individual differences.

3.Useful in Knowledge Lesson only

Herbartian approach is useful in the knowledge lesson only, not in appreciation and skill lessons.

4.Teacher More Active

In Herbartian approach, the teacher has to be more active. It is more desirable if the pupils remain more active than the teachers. As this teaching method is not activity-centered, pupils don't get any motivation for learning.

5.No need of Generalization

Generalization is not needed while teaching language, geography, history, music and arts etc. Thus, all the five steps are not needed while teaching.

6. ***Uninteresting***

This approach stresses upon the teaching of all the subjects of curriculum in a similar sequence overlooking the interests, attitudes, abilities, and capacities of the pupils according to their mental development. The entire teaching becomes monotonous. The pupil does not show any interest in acquiring new knowledge. Thus, Herbart"s teaching method is not interesting.

7.Difficulty of Correlation.

Considering the knowledge as a complete unit, Herbart emphasized correlation between different subjects for the unity in the mental life of the pupils, but following these five steps teachers impart the knowledge of different subjects to the pupils differently. They seek to establish a correlation between various subjects in order to bring integration in the mental life of the pupils which is essentially difficult, if not impossible. So, in nutshell it can be concluded that Herbartain Five-Step Approach, is an impressive and psychological teaching method. It includes both inductive and deductive methods. A correlation among all the subjects of the curriculum is possible by its use. There is a provision of recapitulation in the step under application.

However, some educationists point out that this method is useful only for knowledge lessons. Generalization is not needed in every lesson. Herbart's method is mechanical. There is no place for individual differences. It does not motivate the pupils to learn by doing. The correlation between the different subjects is essentially difficult. **Glower** points out that in Herbartian approach; emphasis is laid on teaching only instead of learning. This reduces the freedom of the teacher. Pupils also become passive. Neither is their character formed nor do they reach their desired goals. However, the pupil-teachers should follow this approach with necessary changes keeping its merits in view.

HERBARTIAN (Johann Friedrich Herbart) STEPS OF LESSON PLANNING

(German educator **Johann Friedrich Herbart (1776–1841),** an influential on American school of pedagogy of the late 19th century as the field worked towards a science of education. Herbart advocated for instruction that introduced new ideas in discrete steps. About a quarter-century after his death, Herbart's ideas were expanded in two German schools of thought that were later embodied in the method used at a practice school in Jena, which attracted educationists from the United States. Herbartianism was later replaced by new pedagogies, such as those of John Dewey**.)**

Herbart emphasized only four steps, i.e. *clarity, association, system and method*, his followers modified the four steps.

Thus, the five steps are termed as Herbartian five steps of teaching.

Preparation/Introduction

Some questions are asked from the pupils in order to test their previous knowledge so that curiosity may arouse in them for learning of new knowledge. By testing their previous experiences pupils are prepared for acquiring new knowledge.

Statement of aim

Here, the topic becomes clear to the pupils and the teacher himself is supposed to write the topic on black-board in clear words.

Presentation

The lesson is developed with the cooperation of the pupils. Opportunities are provided to pupils to learn themselves by stimulating their mental activity. The teacher tries to receive most of the point from the pupils by questioning so that the new knowledge may get related to the previous knowledge.

Comparison and Association

In this, the facts, events and application taught are related mutually by comparison to enable the pupils to understand the taught material. The teacher establishes a relationship between two subjects and also between the facts and events of one subject and the facts and events of other subject. The compares them so that the new knowledge may get stabilized and clarified in the minds of the pupils.

Generalization

Herbart termed this step as 'system'. After explaining the main lesson, the pupils are provided with opportunities to think. They formulate such principles and rules which may be used in various situations of the future life.

Application

In Application it is observed whether the acquired knowledge may be applied to the new situations. The teacher verifies this by asking recapitulate question or by providing opportunities to apply the acquired knowledge in the new situations. This stabilizes the new knowledge and validity of the rules may also be proved.

HERBARTIAN LESSON PLAN MODEL

Date……..

Class……

Period……

Subject……

Topic……..

1. General Objectives

These objectives are formulated by the teacher in his subject keeping in view the entering behaviors of the learners. For example: 1. to develop the knowledge of grammar among the students.

2. ***Specific Objective***

These objectives are formulated on the basis of general objectives and considering the nature of the topic and level of students. These are specified in terms of knowledge, skill or appreciation. These objectives are written in behavioral terms. For Example: (i) Students will be able to recall the definition of noun. (ii) Students will be able to enumerate the examples of noun.

4. Introduction.

Here, the teacher employs his insight and experiences for liking new knowledge with the previous knowledge of the students. The topic is not introduced directly but it is usually emitted by the students' responses by asking introductory questions.

4. ***Teaching Aids***

Audio-visual aids are selected according to the proposed topic.

5. ***Previous knowledge***

Students' previous knowledge is mentioned. For example: Students are familiar with figure of speech. They know that nouns are naming words.

6. ***Statement of Aim***

The teacher gives his statement of teaching topic by incorporating the students' responses. For Example: "Today, we will study about the noun and its kinds."

7. Presentation The teacher prepares the developing questions after introducing the topic. The question are arranged in logical sequence, i.e., from simple to complex, considering the structure of the topic.

8. ***Explanation***

The teacher is supposed to explain the answers of the given developing question. As whole of the content-matter is in the question-answer form.

9. ***Black board Summary***

The teacher has to prepare the black-board summary of his teaching point and explanations.

10. ***Review Questions***

The purpose of these questions is to practice the students' learning and to evaluate their performance whether they have comprehended the teaching unit or not. These review questions are asked only after rubbing the black-board summary. For example:

Q. a. What is the definition of Noun?

Q. b. Give some examples of Noun…..

11. ***Home assignments***

At the end of the lesson plan, home assignment is given to the students on the same teaching unit. The purpose of home work is to practice, to organize and to study the topic for better understanding and retention.

ADVANTAGES

1. ***Organized Teaching***

Each step has been organized in a logical order which provides an opportunity to the fresh teacher to become aware of future mistakes. Originality is never affected and the teaching goes on in a very organized way.

2. ***Acquiring thoughts as apperception.***

Herbart believed that when the new thought related to the thoughts lying in unconscious mind of the pupils are presented, the thoughts of unconscious mind come to the conscious mind, establish relationship with the new thought and again go to the unconscious mind. Herbart termed this material process of acquiring thoughts as apperception.

3.Use of Inductive and Deductive Methods

While presenting the new knowledge, help of various examples is sought through generalization and rules are derived. It is an inductive method. In the step application, these rules are to be executed, this is a deductive method. Thus, both indicative and deductive methods are used in this five steps approach.

4. Recapitulation

Such question is asked while recapitulating which, on answering, result in the learning and application of the acquired knowledge in new situations.

5. ***Correlation Possible***

Herbart considered entire knowledge as a single unit. The knowledge of the pupils is acquired in a single unit. This allows to establishing a correlation between previous and new knowledge and between all subjects of the curriculum.

DISADVANTAGES

1. Mechanical Method of Teaching

The use of these steps takes away the freedom of the teacher as he cannot incorporate his independent thought in any step. This reduces his originality. Hence, Herbartian approach is a mechanical method of teaching.

2. ***No Place for Individual Differences***

While using Herbartian approach. Similar questions are asked to the entire. This overlooks individual differences.

3.Useful in Knowledge Lesson only

Herbartian approach is useful in the knowledge lesson only, not in appreciation and skill lessons.

4.Teacher More Active

In Herbartian approach, the teacher has to be more active. It is more desirable if the pupils remain more active than the teachers. As this teaching method is not activity-centered, pupils don't get any motivation for learning.

5.No need of Generalization

Generalization is not needed while teaching language, geography, history, music and arts etc. Thus, all the five steps are not needed while teaching.

6. ***Uninteresting***

This approach stresses upon the teaching of all the subjects of curriculum in a similar sequence overlooking the interests, attitudes, abilities, and capacities of the pupils according to their mental development. The entire teaching becomes monotonous. The pupil does not show any interest in acquiring new knowledge. Thus, Herbart"s teaching method is not interesting.

7.Difficulty of Correlation.

Considering the knowledge as a complete unit, Herbart emphasized correlation between different subjects for the unity in the mental life of the pupils, but following these five steps teachers impart the knowledge of different subjects to the pupils differently. They seek to establish a correlation between various subjects in order to bring integration in the mental life of the pupils which is essentially difficult, if not impossible. So, in nutshell it can be concluded that Herbartain Five-Step Approach, is an impressive and psychological teaching method. It includes both inductive and deductive methods. A correlation among all the subjects of the curriculum is possible by its use. There is a provision of recapitulation in the step under application.

However, some educationists point out that this method is useful only for knowledge lessons. Generalization is not needed in every lesson. Herbart's method is mechanical. There is no place for individual differences. It does not motivate the pupils to learn by doing. The correlation between the different subjects is essentially difficult. **Glower** points out that in Herbartian approach; emphasis is laid

on teaching only instead of learning. This reduces the freedom of the teacher. Pupils also become passive. Neither is their character formed nor do they reach their desired goals. However, the pupil-teachers should follow this approach with necessary changes keeping its merits in view.

HERBARTIAN (Johann Friedrich Herbart) STEPS OF LESSON PLANNING

(German educator **Johann Friedrich Herbart (1776–1841),** an influential on American school of pedagogy of the late 19th century as the field worked towards a science of education. Herbart advocated for instruction that introduced new ideas in discrete steps. About a quarter-century after his death, Herbart's ideas were expanded in two German schools of thought that were later embodied in the method used at a practice school in Jena, which attracted educationists from the United States. Herbartianism was later replaced by new pedagogies, such as those of John Dewey**.)**

Herbart emphasized only four steps, i.e. *clarity, association, system and method*, his followers modified the four steps.

Thus, the five steps are termed as Herbartian five steps of teaching.

Preparation/Introduction

Some questions are asked from the pupils in order to test their previous knowledge so that curiosity may arouse in them for learning of new knowledge. By testing their previous experiences pupils are prepared for acquiring new knowledge.

Statement of aim

Here, the topic becomes clear to the pupils and the teacher himself is supposed to write the topic on black-board in clear words.

Presentation

The lesson is developed with the cooperation of the pupils. Opportunities are provided to pupils to learn themselves by stimulating their mental activity. The teacher tries to receive most of the point from the pupils by questioning so that the new knowledge may get related to the previous knowledge.

Comparison and Association

In this, the facts, events and application taught are related mutually by comparison to enable the pupils to understand the taught material. The teacher establishes a relationship between two subjects and also between the facts and events of one subject and the facts and events of other subject. The compares them so that the new knowledge may get stabilized and clarified in the minds of the pupils.

Generalization

Herbart termed this step as 'system'. After explaining the main lesson, the pupils are provided with opportunities to think. They formulate such principles and rules which may be used in various situations of the future life.

Application

In Application it is observed whether the acquired knowledge may be applied to the new situations. The teacher verifies this by asking recapitulate question or by providing opportunities to apply the acquired knowledge in the new situations. This stabilizes the new knowledge and validity of the rules may also be proved.

HERBARTIAN LESSON PLAN MODEL

Date……..

Class……

Period……

Subject……

Topic……..

1. General Objectives

These objectives are formulated by the teacher in his subject keeping in view the entering behaviors of the learners. For example: 1. to develop the knowledge of grammar among the students.

2. *Specific Objective*

These objectives are formulated on the basis of general objectives and considering the nature of the topic and level of students. These are specified in terms of knowledge, skill or appreciation. These objectives are written in behavioral terms. For Example: (i) Students will be able to recall the definition of noun. (ii) Students will be able to enumerate the examples of noun.

5. Introduction.

Here, the teacher employs his insight and experiences for liking new knowledge with the previous knowledge of the students. The topic is not introduced directly but it is usually emitted by the students' responses by asking introductory questions.

7. *Teaching Aids*

Audio-visual aids are selected according to the proposed topic.

8. *Previous knowledge*

Students' previous knowledge is mentioned. For example: Students are familiar with figure of speech. They know that nouns are naming words.

9. *Statement of Aim*

The teacher gives his statement of teaching topic by incorporating the students' responses. For Example: "Today, we will study about the noun and its kinds."

7. Presentation The teacher prepares the developing questions after introducing the topic. The question are arranged in logical sequence, i.e., from simple to complex, considering the structure of the topic.

8. *Explanation*

The teacher is supposed to explain the answers of the given developing question. As whole of the content-matter is in the question-answer form.

9. *Black board Summary*

The teacher has to prepare the black-board summary of his teaching point and explanations.

10. *Review Questions*

The purpose of these questions is to practice the students' learning and to evaluate their performance whether they have comprehended the teaching unit or not. These review questions are asked only after rubbing the black-board summary. For example:

Q. a. What is the definition of Noun?

Q. b. Give some examples of Noun…..

11. *Home assignments*

At the end of the lesson plan, home assignment is given to the students on the same teaching unit. The purpose of home work is to practice, to organize and to study the topic for better understanding and retention.

ADVANTAGES

1. *Organized Teaching*

Each step has been organized in a logical order which provides an opportunity to the fresh teacher to become aware of future mistakes. Originality is never affected and the teaching goes on in a very organized way.

2. *Acquiring thoughts as apperception.*

Herbart believed that when the new thought related to the thoughts lying in unconscious mind of the pupils are presented, the thoughts of unconscious mind come to the conscious mind, establish relationship

with the new thought and again go to the unconscious mind. Herbart termed this material process of acquiring thoughts as apperception.

3.Use of Inductive and Deductive Methods

While presenting the new knowledge, help of various examples is sought through generalization and rules are derived. It is an inductive method. In the step application, these rules are to be executed, this is a deductive method. Thus, both indicative and deductive methods are used in this five steps approach.

4. Recapitulation

Such question is asked while recapitulating which, on answering, result in the learning and application of the acquired knowledge in new situations.

5. ***Correlation Possible***

Herbart considered entire knowledge as a single unit. The knowledge of the pupils is acquired in a single unit. This allows to establishing a correlation between previous and new knowledge and between all subjects of the curriculum.

DISADVANTAGES

1. Mechanical Method of Teaching

The use of these steps takes away the freedom of the teacher as he cannot incorporate his independent thought in any step. This reduces his originality. Hence, Herbartian approach is a mechanical method of teaching.

2. ***No Place for Individual Differences***

While using Herbartian approach. Similar questions are asked to the entire. This overlooks individual differences.

3.Useful in Knowledge Lesson only

Herbartian approach is useful in the knowledge lesson only, not in appreciation and skill lessons.

4.Teacher More Active

In Herbartian approach, the teacher has to be more active. It is more desirable if the pupils remain more active than the teachers. As this teaching method is not activity-centered, pupils don't get any motivation for learning.

5.No need of Generalization

Generalization is not needed while teaching language, geography, history, music and arts etc. Thus, all the five steps are not needed while teaching.

6. ***Uninteresting***

This approach stresses upon the teaching of all the subjects of curriculum in a similar sequence overlooking the interests, attitudes, abilities, and capacities of the pupils according to their mental development. The entire teaching becomes monotonous. The pupil does not show any interest in acquiring new knowledge. Thus, Herbart"s teaching method is not interesting.

7.Difficulty of Correlation.

Considering the knowledge as a complete unit, Herbart emphasized correlation between different subjects for the unity in the mental life of the pupils, but following these five steps teachers impart the knowledge of different subjects to the pupils differently. They seek to establish a correlation between various subjects in order to bring integration in the mental life of the pupils which is essentially difficult, if not impossible. So, in nutshell it can be concluded that Herbartain Five-Step Approach, is an impressive and psychological teaching method. It includes both inductive and deductive methods. A correlation among all the subjects of the curriculum is possible by its use. There is a provision of recapitulation in the step under application.

However, some educationists point out that this method is useful only for knowledge lessons. Generalization is not needed in every lesson. Herbart's method is mechanical. There is no place for individual differences. It does not motivate the pupils to learn by doing. The correlation between the different subjects is essentially difficult. **Glower** points out that in Herbartian approach; emphasis is laid on teaching only instead of learning. This reduces the freedom of the teacher. Pupils also become passive. Neither is their character formed nor do they reach their desired goals. However, the pupil-teachers should follow this approach with necessary changes keeping its merits in view.

HERBARTIAN (Johann Friedrich Herbart) STEPS OF LESSON PLANNING

(German educator **Johann Friedrich Herbart (1776–1841),** an influential on American school of pedagogy of the late 19th century as the field worked towards a science of education. Herbart advocated for instruction that introduced new ideas in discrete steps. About a quarter-century after his death, Herbart's ideas were expanded in two German schools of thought that were later embodied in the method used at a practice school in Jena, which attracted educationists from the United States. Herbartianism was later replaced by new pedagogies, such as those of John Dewey**.)**

Herbart emphasized only four steps, i.e. *clarity, association, system and method*, his followers modified the four steps.

Thus, the five steps are termed as Herbartian five steps of teaching.

Preparation/Introduction

Some questions are asked from the pupils in order to test their previous knowledge so that curiosity may arouse in them for learning of new knowledge. By testing their previous experiences pupils are prepared for acquiring new knowledge.

Statement of aim

Here, the topic becomes clear to the pupils and the teacher himself is supposed to write the topic on black-board in clear words.

Presentation

The lesson is developed with the cooperation of the pupils. Opportunities are provided to pupils to learn themselves by stimulating their mental activity. The teacher tries to receive most of the point from the pupils by questioning so that the new knowledge may get related to the previous knowledge.

Comparison and Association

In this, the facts, events and application taught are related mutually by comparison to enable the pupils to understand the taught material. The teacher establishes a relationship between two subjects and also between the facts and events of one subject and the facts and events of other subject. The compares them so that the new knowledge may get stabilized and clarified in the minds of the pupils.

Generalization

Herbart termed this step as 'system'. After explaining the main lesson, the pupils are provided with opportunities to think. They formulate such principles and rules which may be used in various situations of the future life.

Application

In Application it is observed whether the acquired knowledge may be applied to the new situations. The teacher verifies this by asking recapitulate question or by providing opportunities to apply the acquired knowledge in the new situations. This stabilizes the new knowledge and validity of the rules may also be proved.

HERBARTIAN LESSON PLAN MODEL

Date……..

Class……

Period……

Subject……

Topic……..

1. General Objectives

These objectives are formulated by the teacher in his subject keeping in view the entering behaviors of the learners. For example: 1. to develop the knowledge of grammar among the students.

2. ***Specific Objective***

These objectives are formulated on the basis of general objectives and considering the nature of the topic and level of students. These are specified in terms of knowledge, skill or appreciation. These objectives are written in behavioral terms. For Example: (i) Students will be able to recall the definition of noun. (ii) Students will be able to enumerate the examples of noun.

6. Introduction.

Here, the teacher employs his insight and experiences for liking new knowledge with the previous knowledge of the students. The topic is not introduced directly but it is usually emitted by the students' responses by asking introductory questions.

10. ***Teaching Aids***

Audio-visual aids are selected according to the proposed topic.

11. ***Previous knowledge***

Students' previous knowledge is mentioned. For example: Students are familiar with figure of speech. They know that nouns are naming words.

12. ***Statement of Aim***

The teacher gives his statement of teaching topic by incorporating the students' responses. For Example: "Today, we will study about the noun and its kinds."

7. Presentation The teacher prepares the developing questions after introducing the topic. The question are arranged in logical sequence, i.e., from simple to complex, considering the structure of the topic.

8. ***Explanation***

The teacher is supposed to explain the answers of the given developing question. As whole of the content-matter is in the question-answer form.

9. ***Black board Summary***

The teacher has to prepare the black-board summary of his teaching point and explanations.

10. ***Review Questions***

The purpose of these questions is to practice the students' learning and to evaluate their performance whether they have comprehended the teaching unit or not. These review questions are asked only after rubbing the black-board summary. For example:

Q. a. What is the definition of Noun?

Q. b. Give some examples of Noun…..

11. ***Home assignments***

At the end of the lesson plan, home assignment is given to the students on the same teaching unit. The purpose of home work is to practice, to organize and to study the topic for better understanding and retention.

ADVANTAGES

1. ***Organized Teaching***

Each step has been organized in a logical order which provides an opportunity to the fresh teacher to become aware of future mistakes. Originality is never affected and the teaching goes on in a very organized way.

2. ***Acquiring thoughts as apperception.***

Herbart believed that when the new thought related to the thoughts lying in unconscious mind of the pupils are presented, the thoughts of unconscious mind come to the conscious mind, establish relationship with the new thought and again go to the unconscious mind. Herbart termed this material process of acquiring thoughts as apperception.

3.Use of Inductive and Deductive Methods

While presenting the new knowledge, help of various examples is sought through generalization and rules are derived. It is an inductive method. In the step application, these rules are to be executed, this is a deductive method. Thus, both indicative and deductive methods are used in this five steps approach.

4. Recapitulation

Such question is asked while recapitulating which, on answering, result in the learning and application of the acquired knowledge in new situations.

5. ***Correlation Possible***

Herbart considered entire knowledge as a single unit. The knowledge of the pupils is acquired in a single unit. This allows to establishing a correlation between previous and new knowledge and between all subjects of the curriculum.

DISADVANTAGES

1. Mechanical Method of Teaching

The use of these steps takes away the freedom of the teacher as he cannot incorporate his independent thought in any step. This reduces his originality. Hence, Herbartian approach is a mechanical method of teaching.

2. ***No Place for Individual Differences***

While using Herbartian approach. Similar questions are asked to the entire. This overlooks individual differences.

3.Useful in Knowledge Lesson only

Herbartian approach is useful in the knowledge lesson only, not in appreciation and skill lessons.

4.Teacher More Active

In Herbartian approach, the teacher has to be more active. It is more desirable if the pupils remain more active than the teachers. As this teaching method is not activity-centered, pupils don't get any motivation for learning.

5.No need of Generalization

Generalization is not needed while teaching language, geography, history, music and arts etc. Thus, all the five steps are not needed while teaching.

6. ***Uninteresting***

This approach stresses upon the teaching of all the subjects of curriculum in a similar sequence overlooking the interests, attitudes, abilities, and capacities of the pupils according to their mental development. The entire teaching becomes monotonous. The pupil does not show any interest in acquiring new knowledge. Thus, Herbart"s teaching method is not interesting.

7.Difficulty of Correlation.

Considering the knowledge as a complete unit, Herbart emphasized correlation between different subjects for the unity in the mental life of the pupils, but following these five steps teachers impart the knowledge of different subjects to the pupils differently. They seek to establish a correlation between various subjects in order to bring integration in the mental life of the pupils which is essentially difficult, if not impossible. So, in nutshell it can be concluded that Herbartain Five-Step Approach, is an impressive and psychological teaching method. It includes both inductive and deductive methods. A correlation among all the subjects of the curriculum is possible by its use. There is a provision of recapitulation in the step under application.

However, some educationists point out that this method is useful only for knowledge lessons. Generalization is not needed in every lesson. Herbart's method is mechanical. There is no place for individual differences. It does not motivate the pupils to learn by doing. The correlation between the different subjects is essentially difficult. **Glower** points out that in Herbartian approach; emphasis is laid

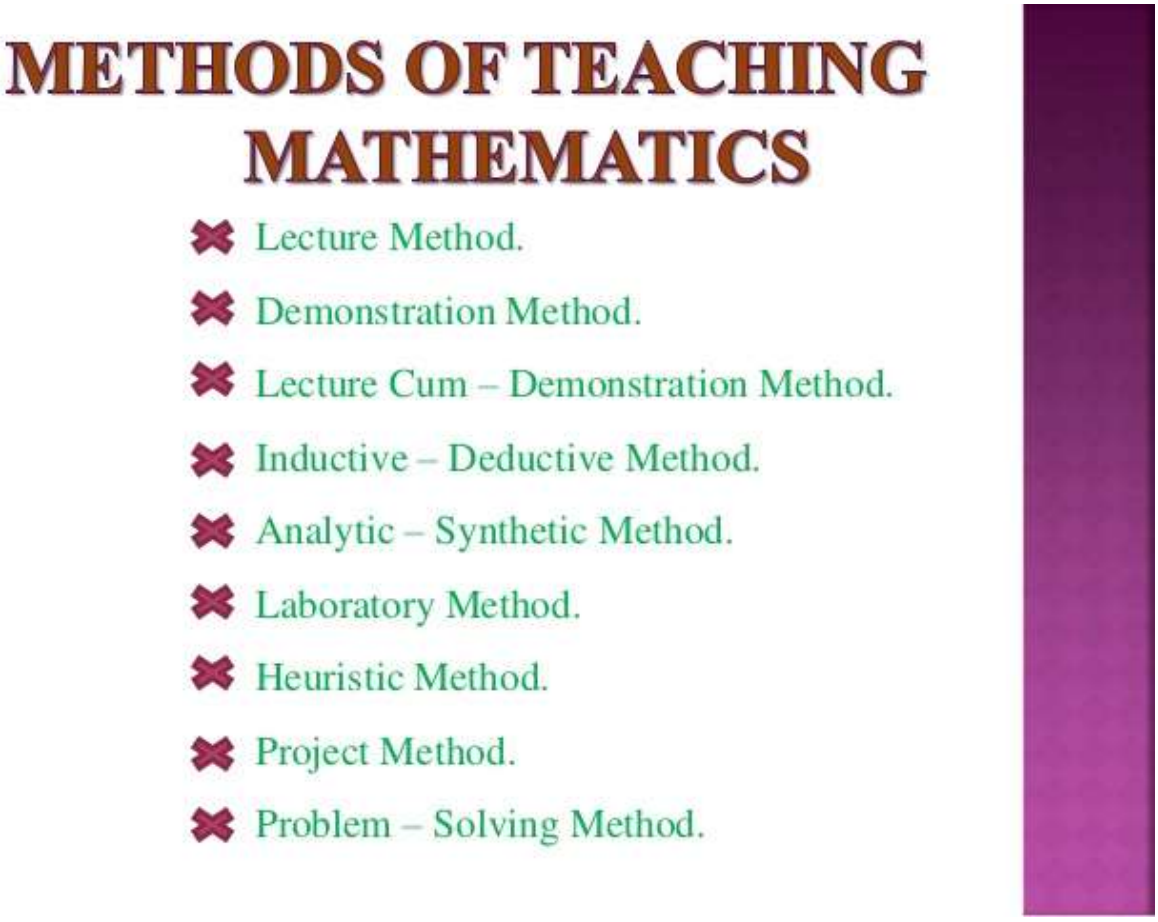
on teaching only instead of learning. This reduces the freedom of the teacher. Pupils also become passive. Neither is their character formed nor do they reach their desired goals. However, the pupil-teachers should follow this approach with necessary changes keeping its merits in view.

-METHODS OF TEACHING MATHEMATICS:

Meaning of Mathematics

Mathematics is the science that deals with the logic of shape, quantity and arrangement. Mathematics is all around us, in everything we do. It is the building block for everything in our daily lives, including mobile devices, architecture (ancient and modern), art, money, engineering, and even sports.

Since the beginning of recorded history, mathematic discovery has been at the forefront of every civilized society, and in use in even the most primitive of cultures. The needs of mathematics arose based on the wants of society. The more complex a society, the more complex the mathematical needs.



A) LECTURE METHOD

A lecture is an oral presentation intended to presents information or teaches people about a particular subject. Oxford Dictionary defines lecture method is talk giving specified to class long series speech.

- Teacher explains the matter in simple and understandable manner.
- The method is particularly used in the secondary classes and above.
- This method can be used to motivate students, to clarify, to review and to expand contents.
- Lecture method is for imparting authentic, systematic and effective information about some events and trends
- It gives the students training in listening
- It develops good audience habits
- It provides opportunities of correlating events and subjects
- It enables the linkage of previous knowledge with the new one

MERITS OF LECTURE METHOD

- A well prepared and a well delivered lecture can make social mathematics interesting.
- Lecture gives the teacher an opportunity to come into immediate contact with the pupils
- Lecture gives the pupils training in listening and taking rapid notes
- Lecture saves time and energy
- Good lectures stimulate brighter student
- It facilitate rapport between the teacher and the taught
- It is more useful for brilliant students
- It helps the implementation of others

DEMERITS OF LECTURE METHOD

- Makes students inactive
- There is a very little scope for pupil activity
- May include irrelevant material
- Discourage self-effort by the students
- Every teacher is not expert enough to deliver lecture
- The pupil lose opportunity to make self-study
- Lecture can soon result in monotony
- Lecturing is against the principle of 'learning by doing'

- ❖ An average students may not be able to fix up their attention to a lecture of 40-45 minutes

B. DEMONSTRATION METHOD

The word demonstration means to give demos or to perform the particular activity or concept. In demonstration method, the teaching-learning process is carried in a systematic way. Demonstration often occurs when students have a hard time connecting theories to actual practice or when students are unable to understand applications of theories. In order to make a success of demonstration method, three things are necessary.

(a) The object being displayed during demonstration should not be so small.

(b) During the demonstration, the clear language should be used so that pupils may understand concept easily.

(c) The pupils should be able to question teachers in order to remove their difficulties.

Characteristic of demonstration method

(1) The demonstration should be done in a simple way.

(2) In this strategy, attention is paid to all students.

(3) Goals and objections of demonstration are very clear.

(4) It is a well-planned strategy.

(5) Time is given for rehearsal before the demonstration.

Steps of Demonstration method

There are six steps of demonstration process.

(1) Planning and preparation

Proper planning is required for good demonstration. For this following points should be kept in mind.

- Through the preparation of subject matter.

- lesson planning
- Collection of material related to the demonstration.
- Rehearsal of demonstration.

In order to ensure the success of demonstration, the teacher should prepare lesson minutely and very seriously.

(2) Introducing the lesson

The teacher should motivate students and prepare them mentally for the demonstration.

The teacher should introduce the lesson to students keeping in mind the following things.

- individual differences
- Environment
- Experiences

The lesson can also be started with some simple and interesting experiments. Very common event or some internal story.

The experiment should be able to hold the attention of students.

(3) Presentation of subject matter

– In demonstration presentation of subject matter is very important. The principle of reflecting thinking should be kept in mind.

– The teacher should teach the student in such a way that their previous knowledge can be attached to their new knowledge.

(4) Demonstration

-The performance in the demonstration table should be ideal for the student.

-The demonstration should be neat and clean.

(5) Teaching Aids

-The teacher can use various teaching aids like models, blackboard, graphs etc. during demonstration.

(6) Evaluation

-In this last step, evaluation of the whole demonstration should be done, so that it can be made more effective.

MERITS OF DEMONSTRATION METHOD

(1) It helps a student in having a deeper understanding of the topic.

(2) It helps students remain active in teaching -learning process.

(3) It leads to permanent learning.

(4) It accounts for the principles of reflective thinking.

(5) It helps to create interest for topics among students.

(6) It helps in arousing the spirit of discovery among students.

(7) It imparts maximum learning to students.

DEMERITS OF DEMONSTRATION METHOD

(1) Students cannot benefit with direct and personal experiences as teacher carry out the demonstration.

(2) It can be costly as it requires costly materials.

(3) It can be a time-consuming method.

(4) It is not based on learning by doing.

(5) This method does not provide training for the scientific method.

(6) There is a lack of experienced teachers to carry out the demonstration.

It is the most suitable method for teaching the secondary classes. If a teacher feels that the demonstration is taking much time than he would have to take the help of students. Similarly, a small group of students

can be invited to the demonstration table. Students can also demonstrate the experiment. This might help in removing objection regarding non-availability of learning by doing approach.

C. INDUCTION METHOD

Induction means "proving a universal truth or theorem by showing that if it is true in any particular case". The rules and formula are established after extensive study of experiences, experiments examples. Here always the rule is particular to general. For example, Jadu dies, Madhu dies, so Jadu and Madhu are human being. All human beings are mortal. In mathematics 1+2=3 and 2+1=3 so, universally if you add two and one thing it will three.

MERITS OF INDUCTION METHOD

1. It is a scientific method.
2. Develop critical observation and logical thinking of children.

a. It is psychological method.
b. Guide the child to do the work themselves.
c. Suitable for lower class.
d. New principle of teaching mathematics.

DEMERITS OF INDUCTION METHOD

e. It is slow process.
f. Only an experienced and able teacher can use this method.
g. Ability or capacity of problem solving cannot develop.
h. It is beneficial for only brilliant student only.
i. Result drawn by this method is not always true.

D. DEDUCTIVE METHOD

This method is opposite to inductive method. In this method deductive method is used. In this method any formulas or problem of mathematics can be solved general to particular. Here any variables can be drawn from general rule to example. This method is effective in mathematical calculations like algebra, geometry and trigonometry. For example all human being dies so Ram, Rahim also dies. If in a specific case 4+4=8 everywhere if add four things twice it will eight. Just opposite to Inductive method.

MERITS OF DEDUCTION METHOD

- Mathematics becomes very easy and comfortable.
- The speed of gaining knowledge increases.
- No difficult for both teacher and students.
- More knowledge in less time.
- Laws, principles and formulas can easily be checked.

- Do not exercise quick and easily.
- Short as well as practical.

DEMERITS OF DEDUCTION METHOD

- Not based on psychological principle.
- Student's works like machine.
- Knowledge gained is unstable.
- There is no scope of developing powers like logical thinking and investigation.
- Not suitable for lower class.
- Teaching learning process becomes uninteresting and dull.

DIFFERENCE BETWEEN INDUCTIVE & DEDUCTIVE METHOD

S.No	Inductive Method	Deductive Method
1.	Particular to General	General to particular.
2.	A habit of discovery is developed.	A habit of discovery is not developed.
3.	Best method of teaching	Best method of learning.
4.	Suitable for lower classes.	Suitable for higher classes.
5.	Develop self – confidence & self – reliance.	Not Develop self – confidence & self – reliance.
6.	Discovery of new knowledge	Use the knowledge gained by others.

7.	Scientific method.	Not scientific method.
8.	Develop scientific attitude.	Not develop scientific attitude.
9.	Emphasis on original & creative work.	Emphasis on problem - Solving.
10.	Teaching – learning process become interested.	Teaching – learning Process become dull.
11.	Slow method.	Fast method.
12.	Psychological method	Unpsychological method.
13.	Understanding Centered	Memory – Centered

E. ANALYTIC METHOD

The word analytic is derived from the world "analysis" which means "breaking up" or "separate things that are together". Analysis starts with "what we have to find out & traces the connection between it & data". In this method we start from "what is to be determined" or "what is to be proved". It is also called "method of discovery".

USED IN THE FOLLOWING CONDITION:

- To prove any theorem.
- When construction work is to be done in the geometry.
- To find out the solution for arithmetic problem.

MERITS OF ANALYTICAL METHOD

-Based on psychological principles.

-Explanatory procedure

-Creates creativity and originality in child

-Develops analytic and reasoning power

-Develops scientific attitude

-Analysis is the process of thinking

-Develops self-confidence and logical abilities in the children

-Knowledge gained by this method is more solid and durable

- Based on formative method and inductive reasoning

DEMERITS OF ANALYTICAL METHOD

-This is lengthy method.

-It is not possible to acquire speed and efficiency.

-Every teacher cannot use this method successfully.

-Whole syllabus cannot complete in certain period.

- Analytical method is possible only when we have knowledge of known facts and unknown conclusion.

F. SYNTHESIS OF METHOD

Synthesis method is reverse to the analytical method. Synthesis means "to join separate parts". This method is of formation, recording and presenting concisely the discovered solution omitting the trial and errors. Synthesis without analysis is dogmatic, but synthesis is offer analysis has a place in the lass-room. Synthesis methods proceed "from known to unknown" or start with hypothesis and end with conclusion.

MERITS OF SYNTHESIS OF METHOD

- It is a short and quick method
- It glorifies the memory of the child.
- It formulates records and presents concisely the discovered facts.
- It omits the trials and errors like in analysis.

- The solution in a concise from.
- It is informative method.
- It takes less time.

DEMERITS OF SYNTHESIS OF METHOD

- It leads to rote memory.
- No scope for discovery.
- It creates many doubts in the mind of child.
- It does not give full satisfaction to the child.
- No opportunity for developing thinking, reasoning and other mental abilities.

G. LABORATORY METHOD

In teaching mathematics laboratory method is one of the most important methods. By using laboratory method teaching mathematics becomes more interesting and meaningful. Students get opportunity to acquaint themselves with the facts through direct experiences individually.

MERITS OF LABORATORY METHOD

- Based on psychological principles of learning by doing.
- Acquire knowledge is more meaningful and durable.
- Developing the habit of discovery and self study.
- Develop scientific attitude.
- Develop positive attitude towards mathematics.
- Develop self confidence.
- Learn how to use different equipments.
- Develop problem solving technique.

DEMERITS OF LABORATORY METHOD

- This is slow method.
- Not fit for lower classes.
- Takes more time to teach.
- Can be used for small class only.
- Requires laboratory equipped with different apparatus which is very expensive.
- Particular topic can be taught by using laboratory method, not fit for teach all the subjects.

H. HEURISTIC METHOD

The word 'Heuristics' is believed to be the originated from Greek word 'Heurisco' which means I find out. The profounder of heuristic method was **Prof. Hennery Edward Armstrong**. This method is based on scientific and mathematical attitude, where students can work like a researcher and solve the problems.

MERITS OF HEURISTIC METHOD

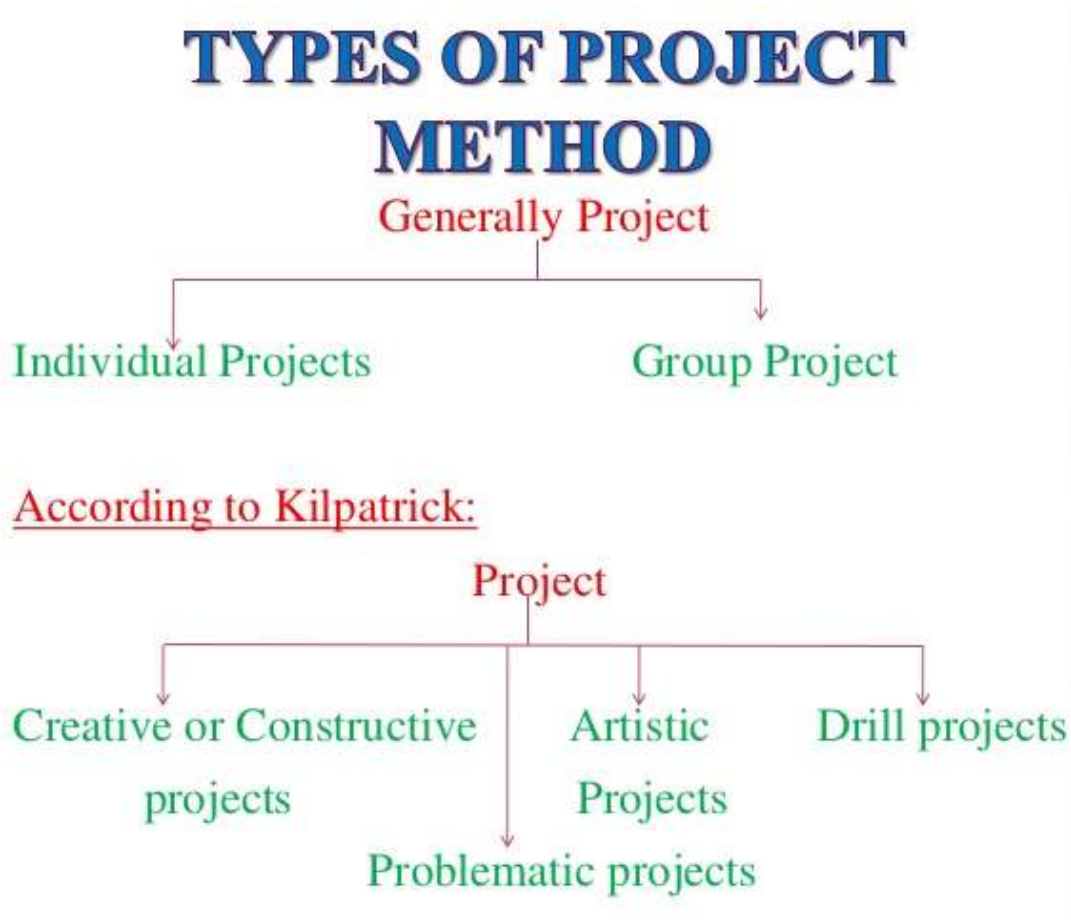
- This method is psychological method.
- Based on the principle of activity.
- Develop the mental and thinking power of students.
- Develops self confidence, self reliance and scientific attitude.
- Develops ability of observation and spirit of enquiry to solve the problems.
- The knowledge obtained by this method is more stable.

DEMERITS OF HEURISTIC METHOD

- It is not suitable for lower classes.
- It is very slow method.
- It is very expensive method.
- It is very lengthy method.
- Lack of text books written on heuristic method.
- Formation method rather than informational.

I. PROJECT METHOD

Project method was developed by American educationist **Kilpatrick**. This method is based on pragmatic philosophy of education. This method consists chiefly of building a comprehensive unit around an activity which may be carried out on in the school or outside the school. It involves a variety of activities. In this method where student's works co-operatively.



MERITS OF PROJECT METHOD

- Based on various psychological laws and principles.
- The children remain active throughout the execution of the project.
- Based on principle of activity, reality, effect and learning by doing.
- Develop co-operative feeling and group interaction.
- The gained knowledge becomes solid and durable.
- It is democratic and scientific in nature.
- Develops discovery attitude.

DEMERITS OF PROJECT METHOD

- It takes more time.
- It is not economical.
- It is very difficult to complete the whole syllabus by project method within the prescribed time.
- Textbooks and written learning materials are not available.
- There is no provision of drill and practice skills reacquired in mathematics.

J. PROBLEM SOLVING METHOD

Through this method the teacher teaches the pupil how to think this technique to a vast number of problematic situations. This method helps the children to solve the problems from different angles. The life is full of problems, successful man equipped with adequate knowledge and reasoning power to tackle these problems. It may be a purely mental difficulty or it may be physical, and it may involve the manipulation of data.

DEFINITION OF PROBLEM SOLVING

According to Gagne, "Problem solving is a set of events in which human being was rules to achieve some goal".

Ausubel stated, "Problem solving involves concept formation and discovering learning".

MERISTS OF PROBLEM SOLVING METHOD:

-This method is psychological and scientific in nature.

-Helps in developing good study habits and reasoning powers.

-Helps in maintaining discipline in the class.

-Teachers become familiar through this method.

-Students can enable to learn how to act in new situation.

DEMERISTS OF PROBLEM SOLVING METHOD:

-Not suitable for lower class.

-Lack of suitable books and references.

-It is not economical.

-Waste of time and energy.

-Expert teacher is required here.

-Teacher find it difficult to cover the prescribed syllabus.

METHODS OF TEACHING SCIENCE

Meaning of Science

We can't live happy life without Science. The science has become integral part of our life. Science has also influenced educational enterprise & hence it is also the integral part of our educational system. Learning of science has become unavoidable part of general education.

Following are some of the methods of teaching science:

1. Enquiry Approach Method

2. Problem Solving Method

3. Lecture-Cum-Demonstration Method

4. Demonstration Method

5. Laboratory Method

6. Observation Method

7. Project Method

1. Enquiry Approach Method

If you want to develop spirit of enquiry in the child use 'Enquiry Approach' while teaching science. Enquiry Approach begins with a puzzling event like 'blowing out of an electric bulb in the class'. Children enquire when there are explanations to be given/ obtained. After the puzzling event (problem) is presented to the children, they may ask the teacher (you) some relevant questions. You should not give the children the readymade answers.

Let them enquire. You may answer the children's question with a 'yes' or 'no'. Each question may be in the form of small hypotheses. Such teacher-student interaction may continue till the children begin to formulate hypotheses about what happened in the puzzling event. Then, the children verify these hypotheses after searching through reference material, and doing little experiments:

Advantages of Enquiry Method

- Children are proactive and work under the guidance of their teacher.
- They learn to formulate hypotheses, and also to verify the hypotheses.
- They are trained to learn on their own.

Disadvantages of Enquiry Method

- This method is slow and time consuming.
- Not suitable for the children of all age groups.
- Require practice for teachers to teach science by this approach.

2. Problem Solving Method

Problem Solving Approach for teaching science is a technique which provides children an opportunity to solve scientific problems quite independently or through guided approach by following systematic steps.

When you want use this approach to teach a science topic, you will have start your lesson with a problem. The children then, will think of some possible solutions of the problem (hypotheses) based on their previous knowledge. To test this hypotheses, children are engaged in self study, mutual discussion (learner- learner interaction, and teacher-learner interaction), and practical work. They test their hypotheses one by one, and finally they are able to find out the best possible solution for the problem i.e. conclusion.

Advantages and Disadvantages

Advantages

1. Students do their own learning under the guidance of their teacher.

2. They learn to propose and structure problems.

3. They learn to collect varied pieces of information relevant to the problem from different sources.

4. They learn to formulate hypotheses.

5. They learn to test the hypotheses, and collect the evidence to prove or disprove the identified hypotheses.

6. They learn to solve problems of their everyday life.

7. They are very closely familiar with various objects and phenomena around them, their applications and relationships instead of having mere knowledge.

8. They establish a healthy and favorable relationship with their teachers and peers, and

9. They develop scientific attitude and scientific temper.

Disadvantages

1. This approach is very slow, long and time consuming. Therefore, if we always use this approach, we cannot complete the syllabus.

2. There is too much emphasis on practical work which may give a wrong concept of the nature and philosophy of science in general. Learning science is a joyful process but too much practical work make it dull and routine type of affair:

3. Most of the teachers are perhaps not able to teach by this approach, as they have not experienced practical teaching of science by this approach.

4. Not suitable for learning for all age groups.

3. Lecture-Cum-Demonstration Method

In essence, a lecture consists of one person talking to many about a topic or theme. The talk may be augmented by the use of demonstration being performed by the teacher, then we call it a lecture-cum-demonstration. The main purposes of a lecture-cum-demonstration are:

a) To convey information

b) To generate understanding

c) To stimulate interest.

Advantages of Lecture-Cum-Demonstration Method

a) A lot of knowledge can be imparted in less time.

b) Theory and practical aspects can be taken up side-by-side.

c) Examples can be illustrated verbally as well as in front of the eyes of the students.

d) In small group, Lecture-cum-Demonstration method can be used for developing problem solving skills and scientific attitude.

Disadvantages of Lecture-Cum-Demonstration Method

a) Student involvement is quite less. This method is essentially teacher centred.

b) It is not always possible to hold students attention while using this method.

c) The teacher cannot receive immediate feedback as to the effectiveness of the lesson.

4. Demonstration Method

Demonstration means 'to show'. In lecture method, the teacher just talks but in demonstration method, he shows or illustrates certain phenomena, concept, or principles. Demonstration provides concrete experiences to students. Thus, it helps to understand abstract ideas to students.

Advantages

1. There is a possibility of using more sophisticated apparatus, which generally students cannot handle in Laboratory.

2. More difficult experiments may be undertaken.

3. More hazardous experiments may be attempted.

4. Expenses may be minimized compared to laboratory method.

5. There is a possibility of demonstrating manipulative and allied practical skills.

6. There is a possibility to draw attention of all the students of the class simultaneously.

7. It takes less time compared to laboratory and other innovative methods like en

8. This method is more efficient in way compared to laboratory method as a teacher is more competent than students to handle apparatus.

9. All students can see the same operation and techniques simultaneously.

10. Teacher is in a position to explain each and every step and to ensure that all students see and interpret all the work in the same manner.

Disadvantages

1. All students do not do the experiment with their own hands. It is a substitute for laboratory work.

2. When the demonstration is complex or there are too many demonstrations in one lesson, students feel difficulty in understanding the basic concepts, principles and skills.

3. Various details of the apparatus, significant reactions and other essential steps undertaken by the teacher in drawing conclusions are not necessarily visible to all the students of the class equally well.

4. It deprives students of many of the advantages of laboratory method such as handling of the apparatus and other materials as well as making their own interpretations.

5. Laboratory Method

In laboratory method, students perform laboratory experiments by their own hands individually or in small groups, under the supervision and guidance of their science (Physics, Chemistry, Biology) teacher. So, here students are more active and involved as compared to Lecture-Demonstration method, where teacher was performing experiments and most of the students in the class were just passive observers. The role of the teacher when using this method is that of a facilitator. The teacher goes to different individuals or small groups, observes them what they are doing, corrects them if they are doing something wrong, and he is always available to students when they really need him for any guidance.

Unless, students perform experiments themselves, they will never get to know what science really is? In this method, they get an opportunity to do experiments individually in small groups.

Advantages

1. Promotes learning by doing.

2. Provide opportunity to handle material by their own hands.

3. Learn to follow directions carefully.

4. Help to learn skills to performing experiments, recording observations and results, summarizing data and drawing conclusions.

5. Provide opportunity for critical thinking, scientific attitude and scientific temper.

6. Provide opportunity of training in scientific method and investigatory science projects.

Disadvantages

1. More expensive as separate equipments is to be provided to each student.

2. Difficult to schedule in the school time table as double periods are to be provided in groups.

3. More time consuming compared to Lecture-Cum-Demonstration method as students are unskilled workers and are not as competent to handle apparatus as their teachers.

6. Observation Method:-

In this method, the student observes and acquires knowledge. Through we cannot call this as a specific method of science teaching but as a matter of fact almost all science begins with observation the students observe nature, in groups, in lab at school at home or in gardens. The result of this process information of a concept of nature which in permanent in mind. The training of pupils in observation is really strong his mind with suitable experiences all thoroughly classified and digested. Science provides remarkable

training in observation and reasoning. The learner's reasons from the once established facts and form concepts about further observed phenomena.

Merit of Observation Method:-

1. The work of the teacher becomes interesting.
2. The students see think give logic and thoughtful answers.
3. The students learn the similarities and dissimilarities of objects clearly and easily.
4. The knowledge acquired in permanent.
5. Students develop interest in subject.
6. Students become self-dependent, self-reliant and self-confident.
7. The problem of home-work in solved.
8. The relation between teacher and taught becomes intimate and healthy.

Limitations of Observation Method:-

1. It is too much to expect children observe and retain knowledge.

The students are in nature sometimes and their knowledge and thinking power in limited.

2. It is not suitable for all the topic of science.

3.This method is information. The practical part of it remains underdeveloped.

4.It is not economical from time point of view.

5. This method is also not economical as it requires a lot of preparation and maintenance from school point of view. Where a student can observe many things.

7. Project Method

A project is a purposeful activity. It may be preparation of a mod static or working, a chart or performing an experiments. Here are examples of some good science projects improved bullock cart, solar cooker-cum-solar power generator, computer controlled car, a simple device to prove Newton's third law of motion, working model of the solar system, determination of the time of a falling body, a device for conversion of waste mechanical energy to electrical energy, sewage treatment and re-use of water, extraction of oil from rice bran, very cheap symbiotic bacteria rhizobium substantial for expensive nitrogenous fertilizers, cheap record player, digital clock, kitchen flask, milk plant, multipurpose cherkah, food feeding machine for physically handicapped, low cost tricycle for handicapped children and so on.

When your students make or work on a project they explore and use lot of scientific knowledge. They do their own learning. You, as a teacher are there to facilitate and guide them whenever they need you.

Advantages

1. It creates interest in science.

2. It develops understanding of various scientific concepts and generalizations.

3. It promotes curiosity and develops scientific temper, interest and appreciation.

4. It develops abstract and concrete scientific skills.

5. It develops scientific hobbies for the right use of leisure time later on in life.

5. It develops self-confidence, co-operation, leadership and emotional stability.

Disadvantages

1. This is the most difficult method as it requires more planning and effort for execution for the teacher, if she1 he is not trained, can face problem in using this method.

2. It is very time consuming.

3. It needs proper coordination as different groups of students will be working on different projects.

4. It requires more materials and equipments.

5. Not suitable for large classes.

METHODS OF TEACHING LANGUAGE

Meaning of Language:

Language, a system of conventional spoken, manual (signed), or written symbols by means of which human beings, as members of a social group and participants in its culture, express themselves. The functions of language include communication, the expression of identity, play, imaginative expression, and emotional release.

Henry Sweet, an English phonetician and language scholar, stated: "Language is the expression of ideas by means of speech-sounds combined into words. Words are combined into sentences, this combination answering to that of ideas into thoughts".

The American linguists **Bernard Bloch** and **George L. Trager** formulated the following definition: "A language is a system of arbitrary vocal symbols by means of which a social group cooperates".

Following are some of the methods of teaching language:

1: The Direct Method

In the direct method, all teaching occurs in the target language, encouraging the learner to think in that language. The learner does not practice translation or use their native language in the classroom. Practitioners of this method believe that learners should experience a second language without any interference from their native tongue.

Instructors do not stress rigid grammar rules but teach it indirectly through induction. This means that learners figure out grammar rules on their own by practicing the language. The goal for students is to develop connections between experience and language. They do this by concentrating on good pronunciation and the development of oral skills.

This method improves understanding, fluency, reading, and listening skills in our students. Standard techniques are question and answer, conversation, reading aloud, writing, and student self-correction for this language learning method.

2. Grammar-Translation

With this method, the student learns primarily by translating to and from the target language. Instructors encourage the learner to memorize grammar rules and vocabulary lists. There is little or no focus on speaking and listening.

This method's two primary goals are to progress the learner's reading ability to understand literature in the second language and promote the learner's overall intellectual development. Grammar drills are a common approach. Another popular activity are translation exercises that emphasize the form of the writing instead of the content.

Although the grammar-translation approach was one of the most popular language teaching methods in the past, it has significant drawbacks that have caused it to fall out of favour in modern schools. Principally, students often have trouble conversing in the second language because they receive no instruction in oral skills.

3: Audio-Lingual

The audio-lingual approach encourages students to develop habits that support language learning. Students learn primarily through pattern drills, particularly dialogues, which the teacher uses to help students practice and memorize the language. These dialogues follow standard configurations of communication.

There are four types of dialogues utilized in this method:

- Repetition, in which the student repeats the teacher's statement exactly
- Inflection, where one of the words appears in a different form from the previous sentence (for example, a word may change from the singular to the plural)

- Replacement, which involves one word being replaced with another while the sentence construction remains the same
- Restatement, where the learner rephrases the teacher's statement

This technique's name comes from the order it uses to teach language skills. It starts with listening and speaking, followed by reading and writing, meaning that it emphasizes hearing and speaking the language before experiencing its written form.

Many of the current online language learning apps and programs closely follow the audio-lingual language teaching approach. It is a nice option for language learning remotely and/or alone.

4: Structural Approach

Proponents of the structural approach understand language as a set of grammatical rules that should be learned one at a time in a specific order. It focuses on mastering these structures, building one skill on top of another, instead of memorizing vocabulary. This is similar to how young children learn a new language naturally.

An example of the structural approach is teaching the present tense of a verb, like "to be," before progressing to more advanced verb tenses, like the present continuous tense that uses "to be" as an auxiliary.

The structural approach teaches all four central language skills: listening, speaking, reading, and writing. It's a technique that teachers can implement with many other language teaching methods. Easier to grasp grammatical concepts are taught before the more difficult ones.

5: Total Physical Response (TPR)

The total physical response method highlights aural comprehension by allowing the learner to respond to basic commands, like "open the door" or "sit down." It combines language and physical movements for a comprehensive learning experience.

In an ordinary TPR class, the teacher would give verbal commands in the target language with a physical movement. The student would respond by following the command with a physical action of their own. It helps students actively connect meaning to the language and passively recognize the language's structure.

Many instructors use TPR alongside other methods of language learning. While TPR can help learners of all ages, it is used most often with young students and beginners. It's a nice option for an English teaching method to use alongside some of the other ones on this list.

An example of a game that could fall under TPR is **Simon** Says. Or, do the following as a simple review activity. After teaching classroom vocabulary, or prepositions, instruct students to do the following:

- Pick up your pencil.
- Stand behind someone.
- Put your water bottle under your chair.
- Etc.

6: Communicative Language Teaching (CLT)

- These days, CLT is by far one of the most popular approaches and methods in language teaching. Keep reading to find out more about it.
- This method stresses interaction and communication to teach a second language effectively. Students participate in everyday situations they are likely to encounter in the target language. For example, learners may practice introductory conversations, offering suggestions, making invitations, complaining, or expressing time or location.
- Instructors also incorporate learning topics outside of conventional grammar so that students develop the ability to respond in diverse situations.
- CLT teachers focus on being facilitators rather than straightforward instructors. Doing so helps students achieve CLT's primary goal, learning to communicate in the target language instead of emphasizing the mastery of grammar.
- Role-play, interviews, group work, and opinion sharing are popular activities practiced in communicative language teaching, along with games like scavenger hunts and information gap exercises that promote interaction among students.
- Most modern-day ESL teaching textbooks like Four Corners, Smart Choice, or Touchstone are heavy on communicative activities.

7: Natural Approach

- This approach aims to mimic natural language learning with a focus on communication and instruction through exposure. It de-emphasizes formal grammar training. Instead, instructors

concentrate on creating a stress-free environment and avoid forced language production from students.

- Teachers also do not explicitly correct student mistakes. The goal is to reduce student anxiety and encourage them to engage with the second language spontaneously.
- Classroom procedures commonly used in the natural approach are problem-solving activities, learning games, affective-humanistic tasks that involve the students' own ideas, and content practices that synthesize various subject matter, like culture.

8: Task-Based Language Teaching (TBL)

With this method, students complete real-world tasks using their target language. This technique encourages fluency by boosting the learner's confidence with each task accomplished and reducing direct mistake correction.

Tasks fall under three categories:

- Information-gap or activities that involve the transfer of information from one person, place, or form to another.
- Reasoning-gap tasks that ask a student to discover new knowledge from a given set of information using inference, reasoning, perception, and deduction.
- Opinion-gap activities, in which students react to a particular situation by expressing their feelings or opinions.
- Popular classroom tasks practiced in task-based learning include presentations on an assigned topic and conducting interviews with peers or adults in the target language. Or, having students work together to make a poster and then do a short presentation about a current event. These are just a couple of examples and there are literally thousands of things you can do in the classroom.
- It's considered to be a modern method of teaching English. I personally try to do at least 1-2 task-based projects in all my classes each semester. It's a nice change of pace from my usually very communicative focused activities.
- One huge advantage of TBL is that students have some degree of freedom to learn the language they want to learn. Also, they can learn some self-reflection and teamwork skills as well.

9: Suggestopedia Language Learning Method

This approach and method in language teaching was developed in the 1970s by psychotherapist **Georgi Lozanov**. It is sometimes also known as the positive suggestion method but it later became sometimes known as desuggestopedia.

Apart from using physical surroundings and a good classroom atmosphere to make students feel comfortable, here are some of the main tenants of this second language teaching method:

- Deciphering, where the teacher introduces new grammar and vocabulary.
- Concert sessions, where the teacher reads a text and the students follow along with music in the background. This can be both active and passive.
- Elaboration where students finish what they've learned with dramas, songs, or games.
- Introduction in which the teacher introduces new things in a playful manner.

10: The Silent Way

- The silent way is an interesting ESL teaching method that isn't that common but it does have some solid footing. After all, the goal in most language classes is to make them as student-centred as possible.
- In the Silent Way, the teacher talks as little as possible, with the idea that students learn best when discovering things on their own. Learners are encouraged to be independent and to discover and figure out language on their own.
- Instead of talking, the teacher uses gestures and facial expressions to communicate, as well as props, including the famous Cuisenaire Rods. These are rods of different colours and lengths.
- Although it's not practical to teach an entire course using the silent way, it does certainly have some value as a language teaching approach to remind teachers to talk less and get students talking more!

11: Functional-Notional Approach

- This English teaching method first of all recognizes that language is purposeful communication. The reason people talk is that they want to communicate something to someone else.
- Parts of speech like nouns and verbs exist to express language functions and notions. People speak to inform, agree, question, persuade, evaluate, and perform various other functions. Language is also used to talk about concepts or notions like time, events, places, etc.
- The role of the teacher in this second language teaching method is to evaluate how students will use the language. This will serve as a guide for what should be taught in class. Teaching specific

grammar patterns or vocabulary sets does play a role but the purpose for which students need to know these things should always be kept in mind with the functional-notional Approach to English teaching.

- **DEVELOPING TEACHING AIDS**

- **Meaning of Teaching Aids**
- Teaching aids are tool and equipment used in teaching as a supplement in class room instruction to enhance the interest of students. Teaching materials are important catalysts of effective instructions. Besides the traditional teaching methods, there are wide varieties of teaching aids available to the teacher. They help students to improve reading and other skill.
- In the present age of sciences and technology, the process of teaching and learning also depends on the latest technology. Teaching becomes interesting when a teacher uses different teaching materials because it directly involves student in the teaching- learning process. It makes lessons enjoyable and memorable. Teaching materials are key factor in creating effective teaching and learning environments. These aids directly address to the five senses so the chances of forgetting become less and process of learning becomes more effective.
- The use of teaching materials in any classroom environment is important because it has gained much more attention around the world. As a result, effective materials become need of the time. To teach a lesson using text book is regarded artificial because it cannot connect the students to the topic directly. To teach a new topic, different teaching materials should be used in order to enhance learners' learning process so that the learner may be able to communicate the learned things in real life. Educational technology now encourages the use of teaching materials in teaching because of their positive effects on students.
  As we all know that today's age is the age of science and technology. The teaching learning programmes have also been affected by it. The process of teaching - learning depends upon the different type of equipment available in the classroom.
- **Types of Teaching Aids:**
  There are many aids available these days. We may classify these aids as follows-
  1.Visual Aids

  2.Audio Aids
  3.Audio-Visual Aids
  1) **<u>Visual Aids</u>**
  The aids which use sense of vision are called Visual aids. For example :- actual objects, models, pictures, charts, maps, flash cards, flannel board, bulletin board, chalkboard, overhead projector,

slides etc. Out of these black board and chalk are the commonest ones.

2) **Audio Aids**

The aids that involve the sense of hearing are called Audio aids. For example:- radio, tape recorder, gramophone etc.

3) **Audio-Visual Aids**

The aids which involve the sense of vision as well as hearing are called Audio- Visual aids. For example:- television, film projector, film strips etc.

- **Some other teaching aids are:**
-
- **Mobile Technology**: Mobile technology is everywhere. Mobile learning is relatively less expensive opportunity. It is convenient as it is accessible from anywhere. In the classroom it can replace traditional mode of teaching which create boredom. A mobile device provides information inside or outside the class so there is all time connection between friends and teacher. It gives new opportunities to both teacher and student.
- **Language games**: It develops the basic skills i.e. listening, speaking, reading and writing. It also develops self confidence and communication skill of the students.
- **Language Lab**: It is modern teaching method used as audio or audio visual aids. Variety of listening and speaking skills are exposed to the students. It is provided with computer, video, electronic testing, word games, quizzes, debates etc.
- **News Paper**: It develops students reading skill. Selection of newspaper material is also very important because it strengthen creative writing, knowledge of structure and grammar. A teacher can make it interesting by giving different task to the students.
- **Some Modern Teaching Aids/Technologies used in the class room.**
- (1) White board – mini lessons.
- (2) Digital book
- (3) Videos
- (4) Internet
- (5) Power point

-
- (6) Online games
- **Need and Importance of Teaching Aids**
- In teaching, teaching aids/ materials are important because every individual has tendency to forget but proper use of these aids, help to remember lessons permanently. All teachings aids can be effectively used in class to motivate the students to learn better.
- One other important factor about teaching materials is that the Teaching materials should meet students' needs as every person has its own level of understanding. As **Cunningsworth** says, "Students particularly more sophisticated adults and teenagers need to feel that the materials from which they are learning have to be connected with the real world and at the same time they must be related positively to the aspects of their inner make up such as age, level of education, social attitudes, the intellectual ability and level of emotional maturity."
- Teaching aids are especially important to enhance learning environment because they develop the proper images in their mind and create an interesting atmosphere for the students to make learning easy and clear. It helps to increase the vocabulary and simplify the course because teacher can deliver lectures easily and explain the concepts of chapters/lessons.
- Teaching aids enable all students of the class to participate actively and they can relate the topic to real life situations. So, following are some of the special needs of teaching aids:
- 1) Every individual has the tendency to forget. Proper use of teaching aids helps to retain more concepts permanently.
  2) Students can learn better when they are motivated properly through different teaching aids.
  3) Teaching aids develop the proper image when the students see, hear taste and smell properly.
  4) Teaching aids provide complete example for conceptual thinking.
  5) The teaching aids create the environment of interest for the students.
  6) Teaching aids helps to increase the vocabulary of the students.
  7) Teaching aids helps the teacher to get sometime and make learning permanent.
  8) Teaching aids provide direct experience to the students.
-

  Teaching aids play a very important role in Teaching- Learning process.
- **Importance of Teaching Aids are as follows:-**

  1) <u>Motivation</u>: Teaching aids motivate the students so that they can learn better.
  2) <u>Clarification</u>: Through teaching aids, the teacher clarifies the subject matter more easily.
  3) <u>Discouragement of Cramming:</u> Teaching aids can facilitate the proper understanding to the students which discourage the act of cramming.

4) <u>Increase the Vocabulary</u>: Teaching aids helps to increase the vocabulary of the students more effectively.

5) <u>Saves Time and Money:</u> Use of proper teaching aids, saves lots of time and money also. It saves time from long and boring explanatory class and helps the students to understand the complex subjects easily.

6) <u>Classroom Live and active</u>: Teaching aids make the classroom live and active.

7) <u>Avoids Dullness:</u> Teaching aids are effective to increase memory of dull student's. What they learn with the help of these aids imprints in their mind. It also makes their learning permanent. Supportive teaching materials provide advantages to remember the subject matter better.

8) **<u>Direct Experience</u>:** Teaching aids provide direct experience to the students. In formal set up of teaching learning process whatever teaching aids the teachers are using in the classrooms, that is giving direct experience to the students as supporting materials for the course content.

-
- 9. Teaching aids make lessons more enjoyable, clear and comprehensible for students. They can be used at all levels of learning process to enrich vocabulary and knowledge.

- 10. Teaching aids motivates the students so that they can learn a topic easily without having any difficulty.
- 11. Teaching aids can facilitate the better understanding of the subject which discourages the act of confusion. It makes the subject and every aspect of lesson very clear and makes them successful in learning process.

- 12. Activities used during the teaching of a subject make their learning process like a game and students enjoy the learning process. The more use of supportive materials increase the learning activities and chances of success.

- 13. Use of teaching aid is absolutely effective because it make the whole process simple, productive and enrich the learning activities.
-
- 14. These aids also increase student's interest and motivate them to learn a topic better.

- 15. These aids also provide a natural learning atmosphere and help them to actively involve in the learning, teaching and experiencing process.

- 16. Use of teaching aids in the class can heighten students desire of learning. All the students

participate in the learning process vividly. It enables the students to express their concepts effectively.

- 17. Teaching aids make the class room live and active and avoid dullness because of involvement of every student. It provides direct experience to the students.

- **Strategies of using Teaching aids in the classrooms:**
- For the proper use of teaching aids strategies should be prepare as it is the most effective way of doing something better. Simple rules should be followed by the teacher and student in the class for the development of students learning skills.
- 1. The students should know to handle the teaching aids themselves.
- 2. Variety of teaching matters should be available in the class.
- 3. Student should feel at ease in the classroom which helps them to learn more in shorter time.
- 4. Teaching aids should be according to ability, back ground and class room situations.
- 5. Two or more teaching method should be integrated to bring variety, attractive presentation and appealing content.
- 6. Students self confidence should be elevate to learn faster.
- 7. Relevant and useful aids should be introduced in the classroom.
- 8. Help students to make efficient use of the teaching aids which help them to self discover.
- 9. Help them to draw attention on linguistic features so that they become aware of a gap between first and second language.
- 10. Students should given opportunities to communicate in second language which develop their knowledge.
- 11. Help students to rehearse information, repetition, retrieve the subject from short term memory. It helps them to learn eventually as a result of using them.

- 12. Different learning styles such as audio, video, traditional, experiential should be used at a same time.

- 13. Students' belief, motives and emotions should be discussed in the class room as it affects the learning rates.
- 14. Different learning styles such as audio, video, traditional, experiential should be used at a same time.
- 15. Students' belief, motives and emotions should be discussed in the class room as it affects the learning rates.
- 16. Students should ask to note the important points and related teaching aids with the concerning subject. They should always be able to identify relevant teaching aids.
- 17. Feedback must be taken from the students.
- **DEVELOPING (DESIGNING) EFFECTIVE TEACHING AIDS**
- Teaching aids are an important part of teaching programme. Effective teaching depends on meaningful, relevant and motivating aids and these conditions are met when aids are developed according to students' needs, interest and expectations. We can also say that teachers should effort to develop the most effective and appropriate teaching aids for their students. Materials designer suggest the combination of both reasoning and artistic processes. In this respect, Low (cited in Johnson, 1989) states that "designing appropriate materials is not a science: it is a strange mixture of imagination, insight, and analytical reasoning"
- **Advantage of teacher designed aids (Merits)**
- A teaching aids designer should be reflective, resourceful and receptive. Teachers who adopt their own teaching aids are willing to take risks and make decisions related to their particular learning environment.
- Some commercial aids are very costly, so it forces teachers to develop them own teaching aids which can be the best option as they are less costly.
- Aids developed by teachers are usually suit the students need. Modern teaching methodology emphasizes the importance of individuals need in teaching. In language class there are mix ability students so a teacher designed aids give the opportunity to select right text for particular learner to ensure the levels of success. This can be change during the course if necessary. They can choose different topics, situations skills or combination of materials according to developing needs of individual.
- Teacher designed aids can also add a personal touch in teaching which increases motivation and involvement in learning. These are readily available and reduce dependence or other materials.

- **Disadvantages of teacher designed aids (Demerits)**
- There are some downsides in teacher designed aids. Generally course books are well organized according to the steps of teaching. It can be boring but it gives a kind of security while teacher designed materials may lack clear direction.
- They may also lack quality. Due to lack of experience or understanding they may contain errors.

Techno City, Khanapara, Kling Road, Baridua, 9th Mile,
Ri-Bhoi, Meghalaya-793101
Phone: 9508 444 000, Web : www.ustm.ac.in