

## Educational Technology

**Education (Major)**

**Semester – 4<sup>th</sup>**

**Paper: 4.01**

**Education (General)**

**Semester – 6<sup>th</sup>**

**Paper: 6.01**

**Unit-2**

**(Teaching Technology)**

### Meaning and Concept of Teaching Technology

Teaching technology is the application of philosophical, sociological and scientific knowledge to teaching for achieving some specific learning objectives. Teaching technology refer to the application of the laws and principles of science and philosophy for realising certain objective in education. Teaching technology include both content and communication. It is concerned with the task of systematisation of the process of teaching.

Teaching cannot merely be treated as a sum total of certain teaching skill. Although, it is true that being a skilled job it involved certain specific skill, yet a mere acquisition of these skills does not make an individual a teacher. A teacher has to play the role of technicians by learning the art and science of teaching. In this sense teaching must be regarded as a technology that a teacher should try to know and practice well if he or she wishes to be successful in his or her teaching. Like a proper technicians, he must be able to do his job effectively.

The teacher must be equipped with the technology skills like:--

- Communication skills
- Skill of interaction with the students
- Skill of making the students to learn and think independently
- Skill of evaluating and reinforcing pupil's learning behaviour etc.

Teaching technology is concerned with four concepts –

**Man power:** As a man power, it implies the role and function of teacher.

**Methods:** As a method, it implies the use of device like micro teaching, programmed learning etc.

**Materials:** As a material, it includes instructional materials, text books etc

**Media:** As a media, it includes different audio video apparatus.

## **Nature of Teaching Technology**

The nature of teaching technology is as follows:

- 1) It is purely psychological. Here the psychology of the learner is counted.
- 2) It is connected with the practical point of view.
- 3) The philosophical, sociological, psychological and scientific knowledge can be applied to the teaching process.
- 4) Its emphasis is on acquisition of objectives and not on the teaching content.
- 5) Its perfection is based on achieving the ultimate goal and not on arranging the content to be taught.
- 6) The nature of teaching technology is very much scientific and mainly concerned with the objectives to be achieved. Permanent behavioural changes are its ultimate goal.
- 7) It is by nature goal oriented. Permanent behavioural changes are considered more important to be achieved by the learner.
- 8) It provides control over the learning environment. It tries to give complete psychological set up to the learning environment.
- 9) It is student oriented by nature. Child is the central point in constructing the teaching technology.
- 10) Teaching process can be made effective with the help of teaching technology.

## **Operations of Teaching**

Teaching is one word but includes many activities. It is a complicated activity. To perform this task a systematic planning is necessary. There are different types of activities to be performed by the teacher in the whole process of teaching.

The whole procedure of teaching may be divided into three phases considering the different steps to be followed in each phase. To understand teaching properly we must consider all the activities what the teacher perform before teaching, during teaching and after teaching in the regular teaching process

The three phases of teaching are:

- A) The Pre-Active Phase
- B) The Inter-Active Phase
- C) The Post Active Phase

### **A) Pre Active Phase of Teaching**

Pre active phase of teaching means the planning stage or preparation stage of the teacher before he enters the class-room. This phase includes all those activities which a teacher performs before classroom teaching. A good planning helps the teacher to perform his task in a systematic and effective way. In this phase the teacher has to perform many tasks.

These tasks include activities like preparing lesson plan, the contents to be studied to teach the children. At this stage he need to analyse what text-book he will use, how he will group the students for teaching, when and what type of poor performance should be informed to the parents etc.

The following activities are included in the pre-active phase of teaching:

**1. Fixation of Educational Goal:** For any type of teaching, it is necessary to fix up certain goals. The teacher should determine the teaching objectives in a systematic way. He should ascertain the teaching objectives and what changes requires in the students by achieving those objectives. Again, these objectives are determined according to the psychology of the students and needs of the society and school. M.L. Stolurow (1965) called it the "Pre-tutorial" phase of teaching.

**2. Taking Decision about the Content:** After determining the objectives, the teacher makes decisions about the contents which is to be presented before the students. For this the teacher must give importance to

- a) The proposed curriculum
- b) The expected terminal behaviour
- c) The proposed knowledge to be taught
- d) How much motivation is necessary on the part of the pupil to attain effective results
- e) The method to be used to evaluate the knowledge of the learnes.

**3. Sequencing the Content for Presentation:** It is during the pre active phase, the teacher should arrange the elements of content in a logical and psychological sequence to fix the subject-matter in the mind of the students. No content, whether it is big or small should be presented haphazardly.

**4. Decision Making and Developing Teaching Strategies:** Here the teacher makes decisions regarding teaching methods and strategies keeping in view of the nature of the subject content to be taught and level of the students. Teacher must think of proper strategies so that the learner can attain the teaching objectives easily.

**5. Distribution the Teaching Strategies:** Distribution of teaching strategies is a sophisticated task. Now, the teacher has to decide what method and strategies he should use at what time. In other words, the teacher should have clear answer in his mind to such questions like:

- a) What type of questions he will ask the pupils
- b) When and where will he use the audio visual aids or chart or map
- c) When and how will he use the black board
- d) When he will use the blackboard
- e) After what duration he will evaluate the knowledge of the learner by asking questions etc.

In short, pre-active phase emphasize that a teacher has to chalk out the details of his journey that he performs in the classroom with the students.

## **B) Interactive phase of teaching**

Interactive phase of teaching starts as the teacher enters the class-room. This phase include all the activities which a teacher carries over right from entering the classroom till the presentation of content. This is the presentation stage. This is the execution or implementation stage of the planned lesson. Here, both the teacher and the students are actually participating in teaching learning process. This is the stage where the teacher gets an opportunity to use and display his teaching talent, make a use of appropriate tools, strategies and so on. The following activities are included in the inter-active phase of teaching:

**1) Sizing Up of the Class:** As the teacher enters the classroom, first of all he perceives the size of the class. He looks over all the students at a glance and can select the pupils who can help in his teaching and who can create problem for him. He can make an overall idea about the learners of the class. In the same way pupils also see the personality of the teacher very quickly and have an idea about him. At this stage the teacher should also be conscious about his personality and try to look like a good teacher by possessing all the good qualities of a teacher. In a nut shell the teacher should appear as an efficient and impressive personality.

**2) Diagnosis of the Learner or Finding out the Nature of the Learner:** After having a feeling of class- size, the teacher makes efforts to know the entry behaviour or the previous knowledge of the learner in the following three areas-

- a) Abilities of the learner
- b) Interest and attitude of the learner
- c) Academic background of the Learner

**3) Action and Reaction Achievement:** In the teaching process there are two types of activities-

- a) Initiation or starting
- b) Response.

In the process of teaching these activities come into being as a process between the teacher and the learner. Both the activities occur between the teacher and the student through verbal interaction. Sometimes the teacher performs some activities and the learner responds and sometime vice versa. Through this process of interaction teaching proceeds. The activities to be performed by the teacher here are:

- a) Selection and presentation of stimuli
- b) Feedback and reinforcement.
- c) Deployment of teaching strategies.

**a) Selection and Presentation of Stimuli:** - Arousing motivation about learning is a process of teaching. To motivate the child the teacher must use some stimuli. The stimuli may be verbal or non verbal. The teacher must have knowledge of what type of motivation will prove effective for teaching in a particular topic and as such he should select the appropriate stimuli for teaching.

**b) Feedback and Reinforcement:** - feedback or reinforcement is that condition which increases the possibility for accepting a particular response in future. In other words those conditions which increase the possibility of a particular response are termed as feedback or reinforcement. these conditions may be of two types which are as follows-----

i) Positive reinforcement: - It creates conditions which increases the possibility of recurrence of desired behaviour or response

ii) Negative reinforcement: It creates conditions to decrease the possibility of repetition of undesired response. For example, this type of reinforcement we may use through punishment.

Reinforcement is used for three purposes-

i) To strengthen the response

ii) To change the response

iii) To correct the given response of the learner

**c) Deployment of Strategies:** the teaching activities are directly related to learning condition. Depending on the learning conditions of the learner the teacher has to deploy the teaching strategies. At the time of interaction between the teacher and the learner teacher can use reinforcement strategies to effect the activities of the pupils. Depending on the effective arrangement of the teaching strategies the teacher–pupil relation become impressive. The teacher controls the verbal and non-verbal behaviour of the learner during the classroom interaction through reinforcement strategies and the whole environment becomes favourable to present the content in an impressive way.

In the development of teaching strategies, three areas should be considered important. These are---

i) Presentation of the subject matter

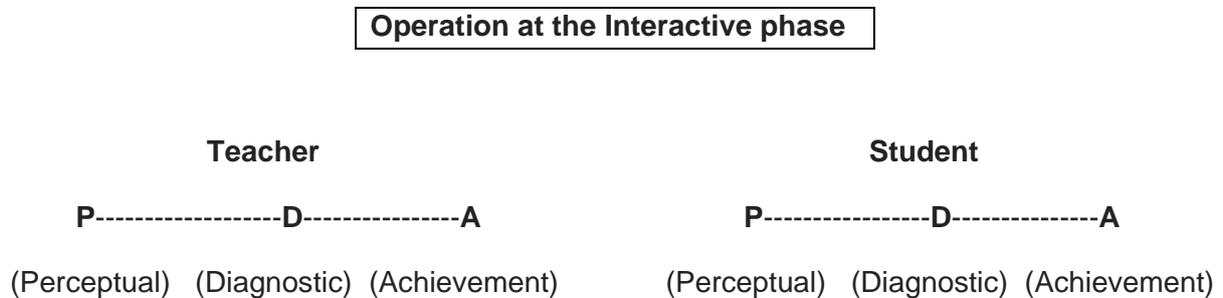
ii) Level of learning for which the class strategy is designed

iii) Level of context of the learners, their background knowledge necessary to learn this particular topic , needs , motivation, attitudes, cooperation and opposition.

In the interactive stage, these activities carried on not only by the teacher, but also carried on by the students. The students also feel about the teacher and diagnosis his personality as a teacher. In order to be impressed themselves and to improve the teaching, they deploy the various strategies by selecting the different stimuli.

### Operation of the Interactive Phase:

The second phase of teaching is concerned with the implementation and carrying out what has been planned or decided at the planning stage. It is the stage of actual teaching. We can present the activities of the interaction through the following chart



**Perception:** Interaction process demands an appropriate perception on the part of the teachers as well as the students. When a teacher enters a class, his first activity is concerned with a perception of the classroom climate. He tries to weight himself, his abilities for teaching against the class group. Similarly students also tries to have perception of the abilities, behaviour and personality characteristics of the teacher.

**Diagnosis:** A teacher tries to access the achievement level of his students with regard to their abilities, interest and aptitude. The teacher can ask several questions to know how far students know about the topic.

**Reaction Process:** Under this stage teacher observes the students that how they respond to the teacher's questions. The students had to learn the proper way of reacting and responding to the various stimuli and teaching techniques present to it. This phase is responsible for establishing appropriate verbal and non verbal class room interaction between teacher and pupils

### Post active phase of teaching

The post - active phase starts after the completion of the teaching task . In this phase the teacher asks some questions to the pupils verbally or in writing form. The purpose of asking the question is to be measure the behaviour of the pupils correctly whether they have achieved the desired objective or not. The teacher should perform the following activities in the post-active phase of teaching:

- (i) Defining the exact dimensions of change caused by teaching.
- (ii) Selecting appropriate teaching devices and techniques,
- (iii) Changing the strategies in terms of evidence gathered.

**(i) Defining the Exact Dimensions of Change Caused by Teaching:** At the end of teaching the teacher defines the criterion behaviour of the learner. For this the teacher needs to compare the existing behavioural changes with the expected behavioural changes of the learner, if he finds that maximum number of pupils achieve the desired behavioural changes, he feels self-satisfied that his teaching strategies and tactics worked effectively with the pupils.

**(ii) Selecting Appropriate Teaching devices and Techniques:** In this phase the teacher selects the appropriate testing devices and techniques to compare the actual behavioural change of the learner with the desired behavioural change. These testing devices must be reliable and valid and be able to evaluate the cognitive and non-cognitive aspects of the learner.

**(iii) Changing the Strategies in Terms of Evidence Gathered:** The teacher should change the teaching strategies or tactics if he feels it necessary after gathering knowledge about the performance of pupils and attainment of objectives. On the basis of the result of evaluation of the learner he comes to know where modification of teaching strategies is necessary with his own instructional drawbacks. Teaching activities of the teacher can be diagnosed with the help of evaluation of the pupils' achievement and necessary and effective modification and change can be made in them.

In conclusion may be said that to achieve the teaching objectives the three aspects of teaching activities (cognitive, cognitive and effective) should be arranged in such a way that the thinking and working system of pupil develop and by recognising reality they can coordinate their external experiences with inner organs.

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(Prepared with inputs from: *Educational Technology*: Dr. Meena Kumari Goswami, *Technological Foundation of Education*: R.A.Sharma)