

Education Technology

V. Natrajan*

Teaching or learning process need to be viewed with the following perspectives

- a. Pre-requisites level of teaching
- b. Motivation of the student
- c. Curriculum specification
- d. Characteristics of learning
- e. Learning outcomes precisely identified in behavioural terms
- f. Achievement test and assessment of learning outcomes.

Methods of teaching – learning are outlined as follows:-

METHODS OF TEACHING/LEARNING

LECTURE

‘A straight talk or exposition possibly using visual or other aids but without group participation other than through questions at the conclusion’ (Ministry of labour’s Glossary of Training terms.)

- Used extensively in university teaching
- Very difficult to prove its effectiveness
- Can be used for
 1. large groups
 2. introducing or summarizing topics covered in great detail by some other methods
 3. developing basic principles
 4. providing an economic method for demonstrating and showing to large groups, new techniques, expensive equipment, films.
 5. providing an intellectually stimulating experience.
- must be matched with ability level of students, (the lesser the ability the more visual the presentation)

- must form a part and never the whole of teaching/learning process
- forms
 - I. formal style, controlled languages, logical structure
 - II. informal style, conversational language
 - III. conversational style (with frequent questions/answers)
- can be live, recorded, T.V. film or audio tape
- must be matched to ability level, time, accommodation, facilities
- suited for purpose of motivation; inadequate for practice of intellectual abilities.

LESSON

‘A method of instruction in which the material to be presented is structured to ensure the participation of the learning group’ (Ministry of Labour’s Glossary of Training Terms)

- promotes efficient learning
- high degree of teacher ability
- participation is achieved by question-answer technique providing feedback.
- Continuous monitoring of student learning is done by
 - i) question – answer
 - ii) short objective type test items
 - iii) short answer essay type questions
- incomplete or progressive handout (blank spaces to be filled in by students progressively – correct answers given to them periodically – reinforcement, correction and remedy).
- must be planned (Lesson plan consists of details of specific, instructional objective, T/SA activities, aids to teaching/learning, time scheduling, testing or evaluation methods).
- involves use of audio – visual aids (pictures, charts, OHP transparencies, film strips, films, models – static as well as dynamic)

* Director, N.I.T.S. – New Delhi.

- enables basic psychological principles of learning to be built in :

Organise subject matter,

Organise intellectual abilities

Organise student activities (guide, provide for practice)

Evaluate

Motivate

- useful for learner behaviours of comprehension, application, evaluation, synthesis.

DISCUSSION

May be free or led

Forms:

1. formal, controlled by the teacher, through questions and answers (teachers – student interactions)
 2. informal, voluntary participation under guidance (teacher – student; student – student)
 3. short, structured, purposeful ‘buzz sessions’ with small groups (on the same specific questions) followed by reporting to whole class.
 4. purposeful, structured group discussion (followed by reporting to the whole class and general discussion)
 6. group discussion with points for discussion.
- suited for development of learner behaviours (communications, attitudes, values, social skills, evaluation and synthesis)

TUTORIAL

- forms : individual groups
- suited for development of application, evaluation, synthesis, expression, communication, interests, attitudes.
- closed as well as open-ended problem solving
- involving simple to complex tasks or abilities (in a problem solving situation involving new unfamiliar areas; it is possible to give hints / clues in the earlier tasks slowly withdrawing them in subsequent tasks / problems)
- mainly to diagnose, remedy learning

- also for routine problem solving skills

TEAM TEACHING

- Forms
 - a. shared / divided teaching (with or without interaction between the members)
 - b. symposium type – different members presenting / discussing different aspects)
 - c. panel discussion type (with members supplementing / interacting and also discussing with the class)
 - d. a major presentation to a large group followed by group work / discussing each group with a teacher (may first adopt an inter-disciplinary approach where applicable, followed by discussion on specialities)

DEMONSTRATION AND / OR EXPERIMENTING

- follow a set of directions or discovering
- teacher demonstrations help to co-ordinate theory with practice.
- suited for development of laboratory / practical / workshop skills, communication, attitudes (scientific), personal and social skills, interest, appreciations
- live demonstrations using models, prototypes, recorded demonstrations
- experimentation both verification (practice after theoretical background) and investigation (practice before theoretical background)
- suited for skill learning by practice either in stages or as a whole.
- examination / observation of specimens / models (with or without tools)

PROJECT

- (studies experiments, production or any other purposeful and planned activity)
- forms
 - a. guided individual projects (with a project brief giving details)
 - b. guided group projects
 - c. independent individual projects (thesis / dissertation)

- suited for development of cognitive and affective skills – almost all the behavioural outcomes of learning are involved.

SUPERVISED / INDEPENDENT STUDY

- Forms
 - a. guided and supervised study
 - b. guided but not supervised study
 - c. independent study (specific assignments)
 - d. independent study (one's own choice)
- development of good habits / skills of study, personal traits, values, higher order intellectual abilities.

USE OF STRUCTURED / SELF PACKED / PROGRAMMED INSTRUCTIONS MATERIALS

- Forms
 1. well structured (text books)
 2. unstructured (informal, conversation, dialogue form)
 3. structuring – Bibliography, P.I. materials)
 4. programming – short presentations / responses to item)
 5. programming (frame by frame) with response and feed back at each step.

ASSIGNMENTS

- Forms
 1. class (development of application, evaluation, synthesis abilities)
 2. home (development of copying, presentation)
 3. laboratory (development of skills)
 4. field (development of research skills, communication, expression)

SEMINARS

- Forms
 1. paper presentation seminar
 2. symposium type

3. panel discussion

- suited for development of applications, evaluation, synthesis, personal traits, interests, attitudes, values communication, expression, social skills.
- controlled by teacher / expert

CASE STUDY

- useful to examine a real or contrived event or problem and diagnose reasons which led up to it or remedies for solving it.
- useful for practice in solving 'human' problems and also for attitude development.
- suited for development of research skills, inference ability.

ROLE PLAYING

- act or play the role for which they are being trained (teachers, salesman, interviewers)
- suited to build up personality traits, personal skills, attitude, values.

SYNDICATE METHOD

- a problem situation is presented to number of students, in separate small groups, arrive at solutions. These are then presented to the whole group in a plenary session.
- suited to build up personality traits, social skills, attitudes, values.

BUSINESS GAMES

- students play the roles of managers in a company the details of which they are given. The effect of their decisions are relayed back to them by a team of assessors and they take further action in the light of these effects.

WORKSHOP METHOD

- combining theoretical presentation / discussion by teachers, use of appropriate aids, group discussion and work, productive effort, group presentation and general discussion review.

Assignment / Practice

- A. Purpose : The purpose of this assignment is to get participant to decide the methods of

Teaching / Learning he/she will adopt to get a group of students achieve objectives set forth.

B. Material : The material to use is the list of methods of Teaching / Learning outlining the preceding pages and set of objectives already prepared.

C. Procedure

- a. you are to go through the material already outlined and comprehend the methods.
- b. you are to select, keeping in mind the list of objectives, particular methods of Teaching / Learning
- c. you are to write a very brief note about each method you select, how you will adopt and how you will evaluated the method(s).

d. you are to send this to the headquarters.

The teacher needs to employ innovations and experiments in methods of instructions. Efforts should be to evolve enquiring attitude, practical application of knowledge and blending of empathetic attitude towards fellow men.

While having defined structure and process of education programme, there is a need for outcome measurement. This should be inclusive of knowledge and comprehension, evaluation of data, application of skills, behavioural or attitudinal aspects and life style changes.

While assessing outcome, proficiency in communication skills, competence in problem solving and formulation of a research project would add to credits to be secured by the trainees.