ACCOUNT

Mathod

B.ED.

Sem-1

UNIT 2 ACQUIRING OF TEACHING SKILLS AND PROFESSIONAL DEVELOPMENT

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  - Origin, History & Development
- Micro teaching cycle
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- Steps And Procedure In Micro Teaching
- Integration of teaching skills
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- Qualities of commerce teacher
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INTRODUCTION

In teacher education programme teaching occupies a vital place. Unless the teacher can be effective in the class room, the knowledge of theory and other things is of no use. Therefore, in order to improve the teaching skill new devices like micro teaching have come into the field. This unit helps you to understand the history of development of micro teaching, definitions given by various scholars on micro teaching, steps, advantages and disadvantages of micro teaching are shown. The success of the micro teaching depends on practice by the teacher trainees. The realization of the anticipated educational goals cannot be realized unless the teacher who is responsible for transacting the curriculum does not possess the insights, qualities, competencies and skills for effectively performing that exercise.

UNIT OBJECTIVES

After going through the unit, should be able to,

- ✓ Explain the history and development of micro teaching.
- ✓ Study the definition and meaning of micro teaching.
- ✓ List out the various steps in preparing micro teaching skill.
- ✓ State the advantages and disadvantages of micro teaching.
- ✓ List out the various skills which are essential for effective teaching.
- ✓ State the components of various sub skills.
- ✓ Explain the meaning of link practice.
- ✓ Write the lesson scripts for each skill.
- ✓ Explain the qualities and qualification required for a commerce teacher.
- ✓ Study the duties and responsibilities of a commerce teacher.

MICRO TEACHING

Micro-teaching was introduced in India in 1967. In India, the first book on Micro-teaching was written by N.L. Dosajh under the Caption 'Modification of Teacher Behaviour through Micro Teaching (1977).

It is a training procedure for teacher preparation aimed at simplifying the complexities of the regular teaching process. Micro teaching is a scaled down sample of teaching in which a teacher teaches a small unit to a small group of 5 to 10 pupils for a small period of 5 to 10 minutes. Such a situation offers a helpful setting for a teacher to acquire new teaching skills and to refine old ones. Micro teaching is a new design for teacher training, which provides trainees with feedback about their performance immediately after completion of lessons.

Teaching is a complex skill comprising of various specific teaching skills. During the teaching-learning process the teacher motivates, explains, demonstrates, questions the students, uses the black board, gives illustration etc,. Each of these activities relate to skills of teaching. These teaching skills are inter-related teaching behaviours and help in the realization of specific instructional objectives. These component teaching behaviours may be modified through adequate practice.

One of the new practices evolved for modifying the teacher behaviour in a step-by-step

process is micro teaching. Teacher behaviour can be modified through the exercise done

in micro teaching and thus a teacher may be able to improve the necessary teaching skills for becoming an effective teacher.

MEANING AND DEFINITION

Micro teaching provides opportunity to select one skill at a time and practice it through its scaled down encounter and then take other skills in a similar way. Micro teaching is a 'scaled down' teaching encounter in which a teacher trainee teaches a small unit to a group of 5 to 10 pupils for a small period of 5 to 10 minutes.

A few definition on Micro - teaching are:

D.W. Allen (1966): "Micro Teaching is a scaled down teaching encounter in class size and time".

Allen and Eve (1968): "Micro teaching is defined as a system of controlled practice that makes it possible to concentrate on specific teaching behaviour and to practice teaching under controlled conditions".

Objectives of Micro teaching:

The following are the major objectives of Micro - teaching :

1. To enable teacher trainees to learn and assimilate new teaching skills under controlled conditions.
2. To enable teacher-trainees to gain confidence in teaching, and to master a number of skills by dealing with a small group of pupils.
3. To make use of the academic potential of teacher-trainees for providing much needed feedback.
4. To derive maximum advantage with the available material, money and time.

Characteristics of Micro teaching:

The important characteristics of Micro - teaching are,

1. It is a scaled down teaching
2. It is less complex than regular teaching.

3. It involves lesser number of students, usually 5 to 10.
4. Its duration is short - about 5 to 10 minutes.

ORIGIN, HISTORY & DEVELOPMENT

Micro teaching technique was first adopted at Stanford University, USA in 1961 by Dwight W.Allen and his co-workers and is now followed in many countries with modified and improved techniques, Dwight Allen of Stanford University who coined the term micro-teaching. Keith Acheson, a research scholar in the Stanford University who discovered that video-tape recorder could be used to provide feedback of a demonstration lesson. He along with other students of the Stanford University started using video tape recorder for modifying the behaviour of teacher trainees. Now in U.S.A., U.K. and Netherlands did pioneering work in micro-teaching.

MICRO TEACHING CYCLE

Micro teaching is a training setting for the teacher trainee where complexities of the normal classroom teaching are reduced by:-

- Practicing one component skill at a time ,
- limiting the content to a single concept
- reducing the size to 5-10 pupils,

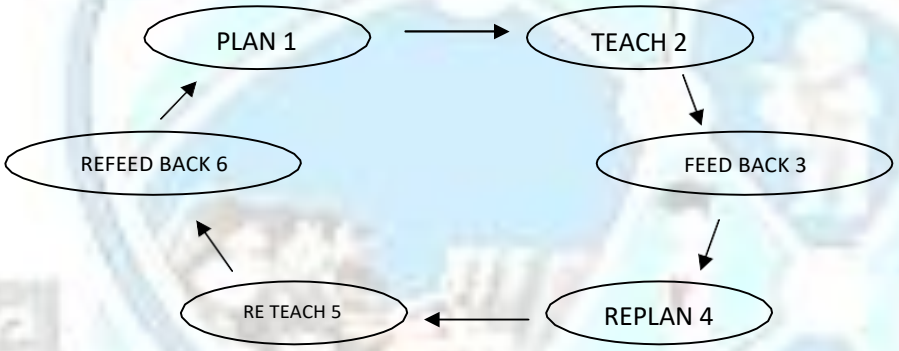
Micro teaching is a training technique and not a teaching technique. In other words it is a technique or design that is used for the training of teachers. It is not a method of classroom instruction or teaching like inductive-deductive, demonstration or question-answer method. It is micro or miniaturized teaching in the sense that, it scales down the complexities of real teaching. There is a provision of adequate feedback in micro teaching as it provides teacher trainees due information about their performances immediately after completion of their lesson.

In the Indian model of micro teaching developed by NCERT the standard setting for a micro class is already discussed under the steps and procedure of micro teaching. So the total time duration of a micro teaching cycle is 36 minutes.

This duration is divided as under:-

Teaching session	6 minutes
Feed-back session	6 minutes
Replan session	12 minutes
Reteach session	6 minutes
Refeedback session	6 minutes
Total	36 minutes

Micro-teaching Cycle



IMPORTANT SKILLS

The following are the important micro-teaching skills:

Skill Of Introducing A Lesson

When a teacher introduces a lesson, he gives a brief introduction about the lesson in order to pre-dispose the pupil's minds to it. This has to serve two main functions, namely refreshing and ensuring the pre-requisites and motivating the pupils to learn the new lesson. It can also act as the foundation for building up the new knowledge.

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Components of the skill :

1. *Use of previous knowledge:* To satisfy the maxim of teaching from known to unknown,

2. the teacher has to judiciously decide upon the pre-requisites that will be essential for properly presenting the new learning material. Then though questions or other tasks he has to ascertain whether these are available with the students. If gaps are identified these have to be filled by using appropriate strategies. This will act as an anchor for the presentation of new materials.

3. *Use of appropriate devices:* Many devices such as exposing, describing, narrating, illustrating, storytelling, role playing, presenting analogies, dramatization, using audio-visual materials, experimentation, demonstrations, etc., are used for motivating the pupils and to gradually lead them to the new learning material.

4. *Motivation, and*

5. *Continuity.*

Skill Of Reinforcement

The skill of reinforcement may be defined as the judicious and effective use of reinforces by a teacher for influencing the pupils' behaviour in the desired direction. There are two types of reinforcement, viz., positive reinforcement and negative reinforcement. The positive reinforces provide pleasant experiences and contribute towards strengthening the desirable responses or behaviours. The negative reinforces provide unpleasant experiences and are used for weakening or eliminating the undesirable responses or behaviours. For better results the use of the positive reinforcement is to be increased while that of the negative reinforcement is to be decreased or eliminated.

Components of the Skill

The components of the skill of reinforcement may be listed as below:

A. Desirable Behaviours

a. Use of Positive Verbal Reinforcers: Positive verbal reinforces refer to those verbal behaviours of the teacher that bring positive reinforcement increase the chances for the pupils to respond correctly. They may be divided into the categories like,

(i) The use of praise words such as 'good', 'very good', 'fine', 'yes', "well-done', 'excellent', 'right', etc.

(ii) The use of statements accepting pupils feelings like "Yes you have judged correctly. Now explain it in detail",

(iii) Repeating and rephrasing or summarizing pupil responses.

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b. Use of Positive Non-verbal Reinforcers: Positive non-verbal reinforcers refer to all those non-verbal (without words) behaviours of the teacher which bring positive reinforcement. They may be divided into the categories,

(i) Writing the pupils' responses of the pupils on the blackboard

(ii) Use of gestures and other non-verbal actions conveying pleasant feelings or approval of pupil responses like nodding of head, smiling, clapping, turning ears or moving towards the responding pupil.

c. Use of Extra Verbal Reinforces: This type of reinforces fall midway between positive verbal and non-verbal reinforces and consists of such remarks as 'hm-hm', 'uh-uh' or 'Aaah, etc.

B. Undesirable Behaviours

a. Use of Negative Verbal Reinforces: Negative verbal reinforces refer to those verbal behaviours of the teacher that bring about negative reinforcement i.e. decreasing the chances for the pupils to respond. Such reinforces may be categorized as under:

(i) The use of discouraging words like 'no', 'wrong', 'incorrect', 'stop it' etc.
(ii) The use of discouraging cues and voice tones as 'humph' in sarcastic voice,
(iii) The use of discouraging statements like, 'I do not like what you are doing', "Do something else', 'That is not good', etc.

b. Use of Negative Non-verbal Reinforces: Negative non-verbal reinforces are those non-verbal behaviours of the teacher that bring negative reinforcement. The examples of such behaviour are frowning, raising the eye-brows, hand and disapproving stares, tapping foot impatiently and walking around etc.

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raising the eye-brows, hand and disapproving stares, tapping foot impatiently and walking around etc.

e. Inappropriate or Wrong use of Reinforces: Only the proper and right use of reinforces will bring encouraging results. The following use of the reinforces should be avoided by the teacher:

(i) Using reinforces when not needed
(ii) Not using reinforces when needed
(iii) Using the reinforces in a less or excess amount than desired.
(iv) Encouraging or Reinforcing only a few responding pupils.

In the light of the meaning of the above discussed behaviours, a teacher is required to practice the occurrence of all the desired behaviours and avoidance of the undesired ones.

Skill Of Stimulus Variation

Continued use of particular teacher behaviour may induce disinterest and inattention among learners on account of so many physiological and psychological factors. The variation or change in the teacher behaviour or stimulus variation helps to solve this problem. The skill of stimulus variation may be defined as a set of behaviours for bringing desirable change or variation in the stimuli used to secure and sustain pupils' attention towards classroom activities.

Components of the skill :

The skill of introducing change or variation in the attention capturing stimuli in a classroom comprises of the following component behaviours:

(i) Movements: Moving objects are capable of capturing more attention than the non-moving or static ones. The teacher should learn to make well-planned meaningful movements for securing and sustaining pupils' attention.

(ii) Gestures: Gestures are non-verbal cues, provided in the oral message given by the teacher for enhancing the value of this message. They are usually made with the help of facial expressions and with the movements of eye, hand, head and body. Extending the hands in a typical shape to indicate how big or small an object is a typical example of this component.

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(v) Change in voice: This attention capturing behaviour of the teacher concerns with the art of bringing appropriate variation or change in the tone, pitch or speed of his/her voice.

(vi) Focusing: It refers to the behaviours that help in focusing pupils' attention on a particular object, word, idea, rule or generalization. Such behaviours may take the following forms:

- The use of verbal statements like, 'Look here in this triangle', 'It is important to note that.' etc.
- The use of gestures
- The use of both verbal statements and gestures

(vii) Change in interaction styles: The communication process going inside the classroom is termed as interaction. There are three main styles of this interaction as given below:

- Teacher-pupils or teacher-group interaction (Teacher conveys and gets response from the class or group as a whole.)
- Teacher-pupil interaction (Teacher communicates with an individual pupil.)
- Pupil-pupil interaction (Teacher involves many pupils in a dialogue without doing direct discussion.)

For bringing effectiveness in his teaching, a teacher should learn the art of bringing variation in interaction styles.

(viii) Pausing: Pausing refers to the behaviour related to introducing silence during talk. A pause of approximately three seconds is regarded as quite effective in securing and sustaining pupils' attention.

(ix) Aural-visual switching: This behaviour refers to the introduction of the change or variation in the use of medium, e.g. (i) from aural to visual (ii) from visual to aural or a combination of aural and visual.

(x) Physical involvement of the students: This behaviour involves the introduction of change or variation in the types, forms and styles of the physical involvement of the pupils in the class. Sometimes, they may be engaged in dramatizing and other times in writing on the black board, participating in the demonstration or handling some instrument or aid material, etc.

Skill Of Explaining

Explanation is nothing but a few interrelated appropriate statements. Thus the skill of explaining may be defined as the use of interrelated appropriate statements by the teacher for making the pupils understand the desired concept, phenomenon or principle.

Components of the Skill

The skill of explaining a concept or phenomenon consists' of two types of behaviour desirable and undesirable.

Desirable Behaviours:

(i) **Using appropriate beginning and concluding statements:** Beginning statement is an opening statement announcing what is going to be explained by the teacher- it prepares the pupils mentally to receive the explanation. On the other hand, concluding statements are made after the end of the explanation in order to summarize or conclude the whole explanation.

(ii) **Using explaining links:** Explaining links in the form of words and phrases are meant for establishing continuity in the statements used for the explanation. The link words are, therefore, hence, thus, consequently, since, because, so that, in spite of, as a result of, the function of, the purpose of, the cause of, due to, that is why, 'this is how, in order to, in order that, on the other hand, why, while.

(iii) **Covering essential points:** The explanation given for the understanding of a given concept or principle should be as complete as possible, it should aim for covering all the essential points.

(iv) **Testing Pupils' understanding**: This involves asking of appropriate questions to ascertain whether the explanation has been understood or not.

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Undesirable behaviours

(i) **Using irrelevant statements:** This behaviour covers the statements not related to the concept or principle being explained, these statements, instead of helping the pupils to understand the concept, create confusion and distract the attention of the pupils.

(ii) **Lacking continuity in statements:** This behaviour involves a missing link or break in the logical sequence of the interrelated statements by the teacher for

explaining a concept.

(iii) **Lacking fluency :** If a teacher lacks in fluency, he/she may be seen to show the following types of behaviours: (a) does not speak clearly (b) utters incomplete or half sentences (c) tries to reformulate or correct his/her statements in the midway of a sentence or a statement and (d) uses fumbling ideas or inappropriate words or statements.

(iv) **Using inappropriate vocabulary, vague words and phrases :** This behaviour consists of the following undesirable aspects:-

a. Use of vocabulary not known to the pupils or inappropriate to their age, grade and maturity level.

b. Use of certain vague words and phrases {like, in fact, some what, you see, you know, I mean, actually, probably, perhaps, almost, a little, etc.) obstructing the understanding of an explanation.

3.5.5. Skill of Illustrating With Examples

This is the skill for timely use of examples for the purpose of making an idea, concept or principle lucid. A good illustrative example will also engage the pupil's attention.

Components of the skill :

1. Formulating simple examples - the examples are very familiar to the students and hence helpful for easy assimilation.
2. Formulating relevant examples - the examples relevant to the item being taught.
3. Formulating interesting examples - the examples that can arouse curiosity and interest.
4. The use of appropriate media for examples - the examples is verbal and non verbal media

5.Use of inductive and deductive approach for examples - Rules are formulated from specific examples and then students quotes examples for the rules.

Skill Of Using Black Board

Black board is the most widely used of all visual aids. It is one of the quickest and easiest means of illustrating an important point. Matter once written on the black board can be erased easily and new materials added as the lesson progresses.

Components of the skill

1. Legibility of hand writing
2. Neatness in blackboard work.
3. Organisation of black board work.

4. Appropriateness of black board work.

Skill Of Probing Questions

Questioning both by the teacher and the taught is the major device used in any teaching-learning situation. To make pupils think and discover facts teachers have to master the art of questioning. Pupils respond in a number of ways and styles such as no response, wrong response, partially correct response, incomplete response or correct response depending upon their own development level, nature of questions and teacher's behaviour. For the realization of the teaching objectives, a teacher has to learn the art of managing the responses of the pupils for eliciting desired response with the help of probing questions and some other desirable behaviours.

The term probing refers to going deep into the matter in hand: Consequently, the skill of probing questions may be defined as the art of response management comprising a set of behaviours or techniques for going deep into pupils responses with a view to elicit the desired responses.

Components of the skill:

The skill of probing questions consists of the following techniques:

(i) Prompting: In dramatics or role playing, the prompting as a technique is used by someone behind the curtain for helping the characters to speak the correct dialogue and demonstrate the desired behaviour before the audience. In the teaching-learning situation it refers to the cues or hints provided by the teacher through well framed questions to a pupil for arriving at the desired response from the undesired situations like no response, incorrect, partially correct or incomplete responses.

(ii) **Seeking further information:** In the case of partially correct or incomplete responses, the technique of seeking further information is applied. Thus the technique of seeking further information maybe defined as a technique of getting additional information from the responding pupil to bring his initial incomplete or partially correct response to the desired response level. The questions like, "What else can you say? How can you make it more clear?, Can you give some examples/evidence/ arguments?. Will you please elaborate your answer?' etc. are often used for seeking further information from pupils.

(iii) **Refocusing:** This technique is used in a correct response situation to strengthen the response given by the pupil. While refocusing, the teacher persuades the responding pupil either to relate his response with something already studied by him or to consider implications of his response in more complex and noble situations. The questions like, 'How does it differ from ....or similar to ?, Can you give an example to support your answer?, How is it applicable to the real life situations?' etc. are often involved in refocusing.

(iv) **Redirection:** This technique is generally applied in a 'no response' 01 incomplete response' situation. It requires putting or redirecting the same question to several pupils for eliciting desired response. This technique is used for open ended questions also where there could be more than one correct answer or opinion or point of view.

(v) **Increasing critical awareness:** This technique is used in a correct response situation to increase critical awareness in the pupil. A teacher is required to ask 'how' and 'why' of a completely correct or desired response from the responding pupil. The questions like, 'How can you justify it?. Why do you assume so?. How does it occur? ,What may be the reason behind it?' etc. are helpful in asking the responding pupil to justify his/her response for the purpose of increasing critical awareness in him/her.

STEPS AND PROCEDURE IN MICRO TEACHING

It involves certain steps which are given as under:

1. Orientation of the student-teachers to the micro teaching programme.
2. Discussing teaching skills.
3. Selection of a particular skill.
4. Presenting of a model demonstration lesson on a particular skill.
5. Observation of the model skill by student teachers and recording their observations on the observation schedule.

STEPS AND PROCEDURE IN MICRO TEACHING

6. Critical appreciation of the model lesson by student teachers.
7. Creation of a micro teaching setting. The Indian Model of Micro Teaching developed

by NCERT gives the following setting:

a) Number of student-teachers 5 -10
b) Type of pupils: real pupils
c) Type of supervisor: teacher educators and peers.
d) Duration of a micro-lesson; 6 minutes.
e) Duration of a micro-teaching cycle; 36 minutes.

8. Practicing the skill.
9. Providing feed back.
10. Replanning.
11. Reteaching.
12. Providing re-feedback.
13. Integration of teaching skills.

UNIT 3 INSTRUCTIONAL METHODS

Structure

Introduction

Unit Objectives
Lecture method
Demonstration method
Team teaching method
Problem solving method
Inductive and deductive method
Project method

Discussion method and its various forms
Surveys and market studies

INTRODUCTION

Teaching of Economics involves effective organisation of learning activities to students. The organisation is not mere presentation of text book material. The learning activities must be organised in such a way that it will give scope for estimating the extent of realization of objectives. This unit deals with the lecture method, descriptive method, objective based method, demonstration, lecture cum demonstration method, problem solving method, project method, includes inductive and deductive methods of teaching and case study. Discussion methods like seminar, symposium, workshop, panel discussion, brain storming, heuristic method, simulation and role playing, are discussed here.

UNIT OBJECTIVES

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

- Explain the lecture method and its advantages and disadvantages,
- Understand the lecture method how to make it effective,
- Explain the descriptive method,
- Understand about objective based method
- Explain demonstration method, lecture cum demonstration method;
- Study the importance of problem solving method and its need,
- Understand about discussion methods

LECTURE METHOD

Lecture method can be considered as the oldest teaching method. It is based on the philosophy of idealism. Lecture is generally described as a teacher centred teaching method involving one way communication mostly by way of verbal exposition. In the field of any theory subject, it has great significance. Nowadays in Colleges and higher education institutions most of the teachers are using lecture method. However, all lectures are not effective and interesting and a number of drawbacks have been pointed out by educators. But lecture continues to be one of the common methods of teaching as it has certain conveniences. The student teacher ratio can be large, which in turn help to reduce financial commitment of an institution. It is a flexible method as teachers can adopt themselves to the subject matter, achievement level of students, time limit, etc. A competent teacher can make the lecture meaningful and interesting by posing problematic situations and by using interesting and illustrative mediators.

Psychological principles leading to effective lecturing

i. The delivering of lecture should be in an active mode.
ii. A lecturer should think from point of view the students. It should not be a mere exposition of his subject mastery.
iii. The lecturer should present the subject matter in a systematic way. All the concepts should be sequentially arranged and clearly explained.
iv. The lecturer should use the language which is easily understandable to each student. It should be simple, unambiguous and lucid.
v. The lecturer should sustain interest and attention by posing challenging situations and by interspersing the lecture with mediators like interesting examples, anecdotes. etc.

How to prepare and deliver more effective lectures?

i. Don't be so rigid with the plan of the talk. Changes should be made according to the nature of the learners. For example, in a higher secondary class, the learners generally found to experience tension. This tension should be released and a receptive mood created before starting the actual talk.
ii. It is probably better to outline the lecture notes than to write everything to be exposed in full. Using a properly prepared outline for exposition will avoid the tendency to read out the lecture, which might lead to monotony.
iii. Distribute among the audience appropriate reading materials prior to the presentation. This encourages pupils to think in advance about the content to be covered

iv. A good beginning is an important factor for an effective lecture. A lecturer must capture the learner's attention. Make use of stimulating audio visuals, demonstrations and provocative questions. Pose leading questions or

problems at the beginning of the lecture to provide direction for the learners as to what is most important. This would also help to stimulate interest.

v. As already indicated intersperse the exposition with catching mediators.
vi. The appropriate use of humour is a wonderful means of Stimulation attention and imagination.

Tips for delivering a good lecture

There are several strategies to increase the impact of a lecture. Some of them are listed below: -

i. Set a learning climate.
ii. Limit the quantum of information according to the time allotted.
iii. Speaking should be clear, loud enough and maintaining appropriate pace.
iv. Use conversational rather than, pedantic, authoritative tone.
v. Look at the learner, while lecturing.
vi. Ensure gestures and other body movements, but don't over do it.
vii. Complement the lecture with other instructional methods.

Advantages of the lecture method

i. It is easy for the teacher to prepare and execute.
ii. Large number of students can be handled at the same time.
iii. The teacher can express his ideas very effectively by his tone, gestures and facial expressions.
iv. It provides better opportunity for clarification of important things.
v. It can be organized in accordance with the principles of educational psychology.
vi. This method is more helpful in introducing a new topic.
vii. Lecture method develops in the learners habits of close attention.
viii. It provides opportunities of correlating events and subjects.

Disadvantages of the lecture method

i. Lengthy lectures can easily lead to boredom.
ii. It does not encourage pupil activity unless the lecturer is extremely competent.
iii. The students are generally passive recipients.
iv. The average student may not be able to fix up his attention to a lecture for a long duration. During this span his attention may be diverted.

v. In this method more content may be covered by a teacher, but less learning may take place.
vi. A lecture may become monotonous to the pupils after a while. Very few teachers can sustain interest up-to the end.

vii. There is no way to know the reactions of the pupils, because in most cases there is no interaction between the teacher and the pupil.

How to evaluate a lecture?

The evaluation can be either formative or summative. The evaluator can collect data with the help of an evaluation tool. The evaluation tool may contain the following factors.

i. The speaker's subject competence.
ii. The language used.
iii. The degree of transparency of presentation.
iv. Extent of realisation of objectives.
v. Use of audio visual aids and other mediators.
vi. Attention of the pupils.
vii. Extent of stimulus variation.
viii. Appropriateness of the presentation to the content.

DEMONSTRATION METHOD

Demonstration is useful instructional method which is employed in teaching Commerce. Demonstration means showing how something is to be done or not be done. Through demonstration a teacher presents a skill before the students. The student's role is that of the observer and recorder of information and skills. In a higher secondary class, the commerce teacher can adopt this method related to the development of skill is being taught. It is most effective when followed by a corresponding student activity.

TEAM TEACHING METHOD

Origin and growth of team teaching: USA is said to be the birth place of team teaching. In 1955, it was initiated at the Harvard University. The second milestone was at Lexington in 1957.

Francis Chase of the University of Chicago and J. Leyond Trump, Director of the Commission of the experimental study popularised the movement in the secondary schools in the USA.

In the 1970's, almost all institutions in the USA used team teaching in one or the other way.

Now several advanced countries in the world make use of team teaching to improve the quality of instruction.

In India and in other Developing countries, team teaching has not gained ground in the instructional process on account of several reasons.

Meaning of Team Teaching:

Team teaching is one of the most interesting and significant recent development in education. It is an innovation in school organisation in which two or more teachers teach a group of students. The group is benefited by the expertise of different teachers. It is an organisational structure to improve teaching-learning process in the classroom.

Carloobson, "Team teaching is an instructional situation where two or more teachers possessing complimentary teaching skills co-operatively plan and implement the instruction of a simple group of students using flexible scheduling and grouping techinques to meet the particular instruction."

David Warwick, "A team teaching is a form of organisation, in which individual teachers decide to pool resources, interest and expertise, in order to devise and implement scheme of work suitable to the needs of their pupils and the facilities of their school".

Characteristics of team teaching

1. It is an instructional arrangement.
2. It involves teaching to be conducted by two or more teachers.
3. It calls for team spirit in teaching.
4. Team spirit of teachers is bound to benefit the students to the maximum.
5. It is sort of pooling of expertise and resources of teachers such as experience, interest, knowledge and skills etc.
6. It is economical as it results in more work in less time.

Objectives of team teaching

1. To bring about improvement in instruction.
2. To make the best use of the expertise and talents of teachers.
3. To develop the feeling of cooperation and group work among teachers.
4. To make the best use of the resources of the school.
5. To develop the feeling and sense of shared responsibility among teachers.
6. To expand the scope of teaching good things to students in the most effective manner.

To increase flexibility in grouping and scheduling as the team teaching groups

students according to their interest and aptitudes in the subject.

Types of Team Teaching: Johnson and Hurt (1968) explain the following three types of team teaching.

1. ***Team teaching within a single discipline***. It is a team of teachers carries on cooperative teaching in the same subject. For instance, two or three teachers of English may teach the subject together in the same class.
2. ***Different team experts related to the course***. It is different teachers who are experts in their own fields are asked to teach together some course which is related to all of them.

3. ***Combined team teaching with related innovations***. It is a few teachers who are interested in some innovations are asked to discuss their innovations of classroom teaching to one group of learners.

Guiding principles of Team teaching

1. Allocation of duties to teachers on the basis of their interests, qualifications and personality characteristics.
2. Making varying size of the group according to the purpose of the team teaching.
3. Allotment of time according to the importance of the subject.
4. Providing appropriate learning environment by making arrangement of laboratory, good library, workshops etc.
5. Providing appropriate learning behaviour to each learner within the group.
6. Exercising constructive supervision on the activities of the group.
7. Keeping the level of team teaching appropriate to the level of the learners.

Advantages of team teaching

1. It stimulates thought and discussion among teachers who are jointly responsible for a group of students.
2. A strong sense of involvement and responsibility develops among the students.
3. It gives adequate opportunities to students for free expression.
4. It affords opportunities to the students to develop human relations essential for social adjustment.
5. Teachers are motivated to work hard for the development of their professional proficiency.
6. Students get the opportunity to be benefited by the special knowledge of teachers constituting the team.
7. It makes proper use of the staff, equipment and the school building.
8. It helps in the maintenance of discipline as it makes the best use of the time and energy of the students.
9. It helps teachers to evaluate the work of one another and provides opportunities for improving one's own teaching.
10. It provides a flexible class size.
11. Teachers work in the totality of a situation.
12. It helps in the improvement of instruction.

Limitations of Team Teaching

1. Resistance from the teachers on account of their traditional conservative

attitude.

2. Lack of facilities.
3. Lack of mutual cooperation among teachers.
4. High costs of the scheme.
5. Problem of delegation of power to teachers.
6. Non-availability of sufficient accommodation.

PROBLEM SOLVING METHOD

The basic purpose of education is to enable the child to adapt himself to life in society which is full of problems. To be successful, one must be adequately equipped with proper reasoning and reflecting power. Not only life in society, there are problems and puzzling situations which are normal features of a child's everyday life in school also. These problems grow in complexity as he grows older and older. Therefore, it is very important that problem solving must be encouraged in school life.

Children are curious by nature. They want to find out answers of several questions which sometimes are baffling even to adults. Nevertheless they must be helped to satisfy their curiosity as far as possible by providing answers to their questions. This implies that we must teach them how to think and reflect so that they are able to apply this to a vast number of varied problem situations. Problem solving ability enables the child to find appropriate solutions of problems which confront him.

Problem solving is an instructional method or technique whereby the teacher and pupils attempt in a conscious, planned and purposeful effort to arrive at some explanation or solution to some educationally significant difficulty. It is a planned attack upon a difficulty or perplexity for the purpose of finding a solution. Yoakam and Sompson define it as, "A problem occurs in a situation in which a felt difficulty to act it realized". It is a difficulty that is clearly present and recognised by the thinker. It may be a purely mental difficulty or it may be physical and involve the manipulation of data. The individual recognises it as a challenge."

Dewey explains problem solving as, "Whenever-no matter how slight and common place in character-perplexes and challenges the mind so that it makes a belief at all uncertain there is a genuine problem. The problem fixes the end of thought and the end controls the process 'of thinking." According to Gates, "a problem exists for an individual when he has a definite goal he cannot reach by the behaviour pattern which he already has available."

Problem solving is not merely a method of teaching. It is more a method of organisation of subject matter in such a way that it can be dealt with through the study of problems. However, this concept of problem solving does not seem to be suitable at the schools stage.

Following are the essential features of the problem:

1. The problem should be meaningful, interesting and worthwhile for children.
2. It should have correlation with life.
3. It should have some correlation with other subjects if possible.
4. It should arise out of the real needs of the students..
5. The children must possess some background of the problem which they are going to discuss.
6. The problem should be clearly defined.
7. The solution of the problem should be found out by the students themselves working under the guidance and supervision of the teacher.

STEPS IN PROBLEM-SOLVING

The steps of problem solving are as given below. .

(1) ***Formation and Appreciation of the Problem***. The nature of the problem should be made very clear to the students. They must also feel the necessity of finding out a solution for the problem.

(2) ***Collection of Relevant Data and Information***. The students should be stimulated to collect data in a-systematic manner. Full cooperation of the students should be secured. They may be invited to make suggestions as to how they could collect the relevant data. The teacher may suggest many points to them. He may ask them to read extra books. He may also ask them to organize a few educational trips to gather the relevant information.

(3) ***Organization of Data.*** The students should be asked to sift the relevant material from the superficial one and put it in a scientific way.

(4) ***Drawing of Conclusions***. Discussions should be arranged collectively and individually with each pupil. Panton suggests that the teacher's aim should be to secure that, as far as possible, the essential thinking is done by the pupils themselves and that their educative process produces the particular solution, formulation of generalizations at stake. "Care should be taken that judgment is made only when sufficient data is collected."

(5) ***Testing Conclusions***. No conclusion should be accepted without being properly verified. The correctness of the conclusions must be proved. The students must be taught to be critical, to examine the "truths" which they "discover" to see "whether they fit all the known data." We should have our minds free from every bias in the process of problem-solving.

Merits of Problem-Solving

Following are the merits of problem solving:

1. It helps in stimulating thinking.
2. It develops reasoning power.

3. It helps to improve knowledge.
4. It helps in developing good study habits.
5. It affords opportunities for participation in social activities. Problems are solved with the joint efforts of many students. The students learn to appreciate the different points of view and thus become tolerant.
6. The students learn to be self-dependent.
7. Discussions help to develop the power of expression of the students.
8. The method provides opportunities to the teachers to know in detail their pupils. They learn which students are shy in nature and which are very active and accordingly they assist the students.
9. Students learn facts which are meaningful and which have been discovered by their own efforts.

10. It helps in the maintenance of discipline. The students remain busy in finding out the answers to their own problem.
11. Knowledge is easily assimilated as it is the result of a purposeful activity.
12. Learning becomes more interesting in place of a dread.
13. It gives the power ~f critical judgement.
14. It helps to verify an opinion.
15. It satisfies curiosity.
16. It helps to learn how to act in a new situation. .

Demerits of Problem-Solving.

The demerits are given below:

1. Generally speaking problem solving involves mental activity only. There is less of bodily activity.
2. Small children do not possess sufficient background information and therefore they fail to participate in discussions.
3. There is a lack of suitable reference and source books for children.
4. It involves a lot of time and the teachers find it difficult to cover the prescribed syllabus.
5. Problem method needs very capable teachers to provide effective guidance to students.
6. There is the danger that the problem method may lead to the selection of trivial topics and in some instances to-those that generate more feeling and emotion than though

INDUCTIVE AND DEDUCTIVE METHOD

The inductive method makes the students arrive at general conclusions or establish laws through observation of particular and concrete them. Rules discovered are more likely to be grasped well than rules explained. Therefore inductive method is more effective in learning. This approach is mainly developmental. It is easy to understand book keeping principles because the doubts about how and why of a formula are clarified in the very beginning. It gives an opportunity of active

participation for the students in the discovery of a formula. This reduces the dependence on memorisation. It is the best method to introduce the new rule. For example the commerce teacher can teach the way of preparing trail balance under this method. Instead of explaining the rules for trail balance the teacher can ask the students to prepare ledger and find out the balances. If it is a debit balance he can ask them to put it in the debit side. If it is credit balance ask them to put it in the credit side. Now the trail balance get tally. He can give two or three more problems of this type. This will lead the students come to a conclusion or formulate rules for preparing trail balance.

If the students are not able to come any conclusion the teacher can give some clue to find the rules. Here the students can find out the rules for preparing trail balance by themselves. The teacher is not teaching or explaining any rule here. They never forget the rule. If they discover, therefore it is the best method to introduce the rule in the class.

The following are the merits of the inductive method:

1. Knowledge is self-acquired and is soon transformed into 'wisdom.' General truths in order to be learned must be earned' a famous saying and the inductive method is true to it.
2. It promotes mental activity on the part of the pupils and makes them active participants in the learning teaching process.
3. It makes the lesson interesting by providing challenging situations to the students.
4. The method affords opportunities to the students to be self-dependent and develops self-confidence.
5. The student's curiosity is well-kept up till the end when generalisations are arrived at.
6. This method is very natural because the knowledge in possession of man has been acquired in this way from the practical side of experience.
7. The child learns how to tackle problems. He not only acquires more facts but also learns the way of acquiring facts which prove: him useful for practical life.
8. The method is based on sound psychological principles. Learning by doing is the basis of this method.

The demerits of inductive method are as follows:

1. There is every possibility that the students may draw conclusion very hastily and these may be based on insufficient data and, therefore, will be wrong.
2. The method is very slow and lengthy.
3. It is not very helpful in the case of small children.

4. It is not suitable in the teaching of subjects in which there is more stress on the teaching of facts. It is not possible for us to experience facts in history and in so many other subjects.

5. The inductive method is not a complete method in itself. It has been said, "Induction does not prove but only provides the material to prove, it only discovers." When we have discovered a principle, we have to apply it again on some concrete instances for its verification. Therefore, we need deductive method to ensure the value of inductive process.

The deductive method is the opposite of the inductive approach. In this method - learner proceeds from general to particular, abstract to concrete and formula to examples. The pre-constructed formula or definition is told to the students and they are asked to solve or face the new situation with the help of that formula. Here the learner accepted that the formula or definition is a pre-established and well established truth. For example, the teacher can also teach the trail balance by way of this deductive method; instead of asking the students to prepare trail balance by way of inductive method that is first ledger then finding the nature of balance and the trail balance. The teacher can first explain the rule for preparing trail balance. That is all the assets, expenditure and losses come under the debit side of the trail balances. All the liabilities, profits and receipts come under the credit side of the trail balance. Then he can give a problem and ask them to prepare trail balance. Here the learner proceeds from general rule to solve a particular problem.

The merits of the deductive method are as below:

1. The teacher's work is simplified. He gives general principles and the students verify them.

2. This method is very economical. It saves time and energy both of the students and the teachers. Many principles for the discovery of which mankind have taken a lot of pains can be told to the students easily.

3. It is very suitable for small children who cannot discover truths for themselves. They get ready-made material.

The demerits of the deductive are,

1. Knowledge is not self-acquired and, therefore, not assimilated properly.
2. The child is deprived of the pleasure of self-activity and self effort as ready-made formulae, principles and rules are given to him.
3. It encourages memorisation of facts which are soon forgotten and, therefore, knowledge is rendered useless.
4. This method is unnatural and unpsychological for the students who do not possess ability to appreciate abstract ideas in the absence of concrete examples.
5. It fails to develop motivation and interest in the learning as the truths are not of

much value to them.

6. It fails to develop self-confidence and initiative in the students.

Combination of Deductive and Inductive Method:

The two approaches inductive and deductive aim at establishing the validity of the thought process. Induction is to be the forerunner of predecessor of deductive. The deductive will give a good follow up for the understanding obtained earlier by induction. The two approaches are such good partners that the shortcoming of the one removed by the other. Deduction is a process particularly suitable for the final stage or revision stage and induction is most suitable for the beginning or initial stage, especially at the time of exploration of new fields. The modern teaching always starts with induction leads to deduction where the knowledge learnt is verified. There is no question of 'either or' both are required.

PROJECT METHOD

This method is the direct outcome of John Dewey's pragmatic philosophy. It is based on the idea that true knowledge is acquired not merely by reading books nor by attending lectures but by purposive planning and doing by the learners themselves for the purpose of handling problematic life situation. 'Learning by doing', 'Learning by living', 'Problem orientation' and 'working in natural settings' are the four cardinal principles of this method.

Steps in the project method

1. Providing a situation
2. Choosing and purposing
3. Planning
4. Executing the project
5. Evaluating the project
6. Recording

DISCUSSION METHOD AND ITS VARIOUS FORMS

A group discussion means an exchange of ideas accompanied by active learning, with all the members of the group participating in it. It is a free discussion regarding a topic by a group

Mc Bumey and Hance have defined group discussion as, "the co-operative deliberation of problems by persons thinking and conversing together in face to face co-acting in group under the direction of the leader."

The dictionary of Education describes group discussion as "An activity in which people talk together in order to share information about a topic or problems to seek possible available evidence of a solution".

The structure of a group

The structure of a group consists of the leader, group and topic. Usually in a class-room situation the teacher acts as the leader. But in normal situation one of the group members acts as the leader. The leader of the group is responsible for directing the discussion.

The participants of the discussion are collectively known as the group. In school situation the class can be considered as the group.

The topic is the essence of the group discussion. It can be either a small unit of the curriculum or a set of related information. The participants discuss various aspects concerning the topic Objectives of group discussion

1. To stimulate reflective thinking.
2. To enrich previous knowledge.
3. To encourage creative expression.
4. To develop desirable social attitudes by participating in groups.
5. To practice the technique of co-operative thinking.
6. To develop the habit of group work.

Principles of group discussion

1. Every group discussion should have some purpose.
2. The topic should be related to the common needs and interests of the participants.
3. Students should have sufficient background information and knowledge about the discussion topic.
4. Individual members should be assigned with adequate responsibilities.
5. The group leader should take initiative to report the progress of the discussion to the outside world.
6. A fixed time schedule should be drawn up for the discussion.
7. The teacher should ensure active participation of the members.

Suggestions to make group a discussion effective

1. Start the discussion on time.
2. Try to make the group feel at ease.
3. State the general purpose of the discussion well in advance.
4. Word the topic clearly but concisely.
5. Explain the discussion procedure and define its limits.
6. Encourage participation by all members.

1. Control the over-talkative member.
2. Encourage the shy member to participate actively.
3. Don't allow one or two members to monopolize.
4. Deal tactfully with irrelevant points presented.
5. Avoid personal arguments.
6. Keep the discussion moving
7. Ensure that the discussion is relevant to the topic.
8. Summarise occasionally.

Use audio-visual aids wherever it is needed.

Types of group discussion

1. Spontaneous discussion

   Spontaneous discussion generally results from student question about current events related to the topic under study. This method helps the students to gain updated information as well as to analyse and relate facts to real life situations. The knowledge of facts leads to the development of understanding. This increases the level of learning. of the students.

2. Planned discussion

   In planned discussion, the activities are planned in advance. Here the teacher's role is to encourage the students to participate actively in the discussion according to the pre-plan. The teacher should also help the students in drawing conclusions.

Advantages of group discussion method

1. It develops group feeling and social participation.
2. It develops self confidence and sense of responsibility among the individuals
3. It enables the learner to analyse the subject matter thoroughly
4. It helps to develop communication skill among the students
5. The teacher can observe and collect information regarding the behaviour of the students.
6.
7. Disadvantages of group discussion method

1. It is time consuming
2. Lack of preparation among the students may make the discussion pointless
3. It is not applicable at lower level classes.

❖ ***Seminar***

Seminar technique is usually practicable in higher education programmes. In this technique a person presents a readymade paper or lecture on a specific subject before a group. Now-a-days audio visual aids are also used while presenting the matter. The paper presenter can either be an expert or one of the members of the group. Sometimes, the copies of the paper being presented are distributed to the audience in advance. After the presentation, there is a general discussion in which all participants can participate. Here, the participants get an opportunity to clear their doubts. The various actions are taken according to an appropriate time schedule.

Dressel defines the term seminar as, "the structured group discussion that may proceed or follow a formal lecture, often in the form of an essay or a paper presentation".

Objectives of seminar technique

1. To help the students get an in-depth study of the subject matter.
2. To develop the habit of tolerance and co-operation among the students.
3. To help the students overcome the problem of stage fear.
4. To help in developing the ability for keen attention and to present ideas effectively.
5. To help in acquiring proper ways of raising questions and answering the questions from others effectively.

Advantages

1. The learner is helped to develop analytical and critical thinking.
2. The presenter can be assessed with respect to his skill in organising and presenting subject matter in a systematic way.
3. Develops self-reliance and self-confidence in the learner.
4. Develops the ability to comprehend major ideas by listening.
5. Develops the ability to raise relevant and pin-pointed questions.

Disadvantages

1. Lack of preparation on the part of the paper presenter may defeat the purpose of the seminar.
2. The formal structure of seminar restricts the participants from asking questions as and when needed.
3. The success of the seminar fully depends on the ability of the person who is presenting the topic. His inability will create unnecessary confusions.

Types of seminar

On the basis of levels of organization, there are three types of seminar. They are:

1. Mini seminar

A seminar organised to discuss a topic in a class in known as mini seminar

2. Main seminar

A seminar which is organised at departmental level or institutional level on a major theme is known as main seminar

3. State/National/International seminar

❖ ***An association or organisation at the state/national/international (eg. UNESCO) levels can organise seminars at the respective levels***

Symposium

Symposium is a discussion by different speakers on the same topic emphasising different aspects. Selected speakers present prepared speeches. Generally, the chairman and the speakers discuss the various aspects of a theme in advance and allot to each one a particular aspect so that each speaker limits his presentation to that aspect. The chairman co-ordinates the different presentations. The total number of speakers may not exceed five excluding the chairman. The audience very seldom participates, as the chairman and the speakers anticipate possible questions and doubts to be cleared and incorporate these in their presentation. It is in this aspect that a symposium differs mainly from a panel discussion or seminar. By adopting the same procedure a class can be converted into a symposium.

When should a symposium be used?

The symposium method is appropriate for any occasion provided the purpose of a session is to present several sides of one question or to approach a central theme from different perspectives in that session itself. It works well when disparate points of view on a controversial topic are brought together. The symposium can be used also to help people understand how related parts of a topic constitute the topic as a whole. An additional use of the symposium is to stimulate fresh thinking on a topic.

Who are involved in a symposium?

There are four aspects involved in a symposium. They are:

1. The theme
2. The chairman
3. The speakers
4. The audience

The theme is the topic on which the presentation is to be made. It should be stated in brief but should specify the scope.

The Chairman is responsible for organising and presiding over the symposium. An important quality for a chairman includes knowledge of the topic, ability for lucid exposition of ideas and the ability to facilitate group work. In addition the chairman should be able to tolerate ambiguity and deal with spontaneous situations that might a rise during the symposium. In the class situation the teacher or some suited person can be the chairman.

The speakers are responsible for presenting views in a clear and concise way. They should have a firm grasp of the topic at hand and enough knowledge about the nature and standard of the audience facing them. Under the classroom situation students who are made to prepare thoroughly in advance can serve this purpose. Teachers or invited speakers also can be arranged.

The audience is usually comprised of interested individuals who want to attend the meeting. If it is organised as a curricular/co-curricular programme of any institution, the class concerned will be the audience. Every effort should be made to organise the symposium in a manner that would stimulate thought among participants and enhance their understanding

Advantages of the symposium

1. Symposium brings together knowledgeable speakers who present variety of opinions on a given topic.
2. The problems can be explored quite thoroughly by the symposium method.

The audience has the benefit of hearing different points of view that can be challenging and stimulating.

Limitations of symposium

1. The formal structure tends to promote passivity among audience since there is little scope for active participation.
2. Sometimes the symposium members fail to check the scope with each other prior to the meeting which results in repetition of information, confusion and deviations from the assigned topic.
3. It is sometimes difficult to find enough competent speakers to cover the topic adequately.

❖ *Workshop*

The term workshop has been borrowed from 'engineering'. In a workshop persons have to engage in some productive task to produce something tangible. In an educational

workshop also something tangible has to be produced by the participants. The product may be some equipment, instructional material, an action plan. etc.

According to R.A. Sharma. "Workshop is an assembled group of ten to twenty five persons who share a common interest or problem. They meet together to improve their individual proficiency to solve a problem or to externalise knowledge and skill of a subject through intensive practical work and discussions."

Objectives of the workshop

1. To develop the psychomotor skill of the learner.
2. To make the subject matter interesting to the student
3. To motivate the students for a particular topic.
4. To give training to teachers in specific areas.

How to organise a workshop?

The conduct of a workshop involves the following stages.

Stage - 1 Presentation of the theme

Here, the resource person presents the theme of the workshop to the participants. Normally, necessary information will be communicated in advance to enable the participants to attend the workshop well equipped. The actual procedure of the workshop is worked out and discussed with the members. The participants can ask question to clear their doubts.

Stage – 2 Practical Sessions

After the general orientation, the participants are exposed to the actual practical work. Here the entire members are divided into small groups and specific productive tasks are also assigned to them. Within the group, each participant is expected to work individually and independently.

Stage – 3 Discussion Sessions

At this stage, all the groups meet at a single place and present the products which they could materialise. The resource person can give suggestions for further improvement.

Stage - 4. Finishing Session

Based on the discussion and suggestions at the third stage, the participants can modify their work. The finished work should be submitted to the authorities concerned.

Advantages of workshop technique

1. It is used to realise the cognitive and psychomotor objectives.
2. It helps to develop practical and realistic knowledge regarding the topic concerned
3. It develops the feeling of co-operation and group work
4. It develops creativity of the students
5. It helps to avoid the fear to face a problematic situation.
6. It results in the production of tangible material that could be used by others.

Disadvantages of workshop technique

1. Lack of motivation from the part of teacher may adversely affect the workshop
2. Lack of availability of resource persons as well as materials may create difficulty in conducting a workshop
3. It is time consuming
4. Special room and facilities required may be absent in school situation.

- ***Panel Discussion***

Panel discussion is one of the socialized procedures. This is a procedure in which a small group of persons or pupils discuss the assigned problem creatively among themselves in front of an audience.

A successful panel involves three distinct parties:

- The *moderator* is responsible for managing the smooth functioning of the discussion by selecting appropriate panel members and guiding discussion.
- The *panel members* are persons who possess specialized knowledge of the topic at hand, can articulate verbally in a clear manner and have an interest in the programme.
- The *audience* is composed of persons with variety in background and interest.

- ***Brain Storming***

Brainstorming is basically an activity designed to promote creativity. It is a form of discussion which enables the group to do collective creative thinking. The emphasis in brainstorming is upon eliciting from the students as many different ideas as possible for more careful consideration at a later time.

Under brainstorming, the mind is stimulated to think without any inhibition whatsoever. The ideas are just accepted as they are. They are never rejected during the process of brain-storming however inappropriate or even irrelevant they might appear to be. The time for a person is limited to 3-5 minutes. The suggestions are taken for comment and close scrutiny subsequently. Everyone is allowed to comment upon to adopt and to elaborate the ideas suggested by the others.

Brainstorming in the class situation invariably leads to generation of new ideas and approaches to the study of the topics. This technique is very useful for enhancing the contribution and involvement of students in the teaching-learning processes.

- ***Heuristic method***

Under this method, pupils are led to discover the facts for themselves with the help of experiments, apparatus or books. Naturally the procedure adopted will be that if activity method and the reasoning employed will be inductive. The learner invents or discovers items of knowledge. The method emphasizes the process of the growth of mind by one's own effort rather than pouring cooked material into empty vessels.

- ***Simulation and role playing***

Simulation technique is relatively a new approach introduced in the field of education. Simulation is the presenting of a problem or an event presented in artificially created situations similar to the real one. The presentation is made as near as possible to the real situation or event. A mini working model of an aeroplane being used in training pilots to learn and practice the working of an aircraft is an example of simulation: Now-a-days various computer programmes are used for giving training through simulation. Micro teaching used in teacher training for skill development can also be considered as a form of simulation.

Meaning of Simulation

The International Dictionary of Education defines the term as, "teaching technique used particularly in management education and training in which a real life situation and values are simulated by 'substitutes' displaying similar characteristics." It also means "Techniques in teacher education in which students act out or role play teaching situations in an attempt to make 'theory' more practically oriented and realistic."

Simulation is a must in the world of science and technology. Engineers build models, study their performance, made some adjustments and build a prototype.

In order to perform operations on human, doctors are made to learn the operation techniques by experimenting on frogs and rats etc.

Simulation is a role playing in which the process of teaching student - teachers is enacted artificially and an effort is made to practice some important skill of communication through this. The student-teacher and the' students simulate a particular role and try to develop an identity with the actual classroom environment. Thus, the whole, simulated teaching programme becomes training in role perception and role playing.

Application of Simulation Technique in the Training of Teachers

Mechanism of simulated teaching is adopted in teacher training for removing some of the deficiencies of the demonstration lessons based on traditional lines. Student-

teachers are trained in some artificial laboratory like conditions. They are not directly allowed to use school children for practising their teaching skills and modify their teaching behaviours. They are first provided opportunities to acquire the necessary teaching experiences. Student - teachers are sent to schools for practice teaching through simulated teaching i.e., playing the role of teacher in their own institution within their own group of fellow trainees. In simulated teaching, every student teacher plays three different roles-teacher, pupil (student) and observer. He delivers his lesson to his peers who play the role of students. Some students play the role of observers. The superior or the teacher educator is also present. The peers and the teacher educator (supervisor) observes lesson and notes down all the good and weak points concerning the classroom interaction such as teaching behaviours, content taught, skills, practised and methodology used etc. After the lesson is over, there is frank and free discussion for getting feedback and thereby modifying and improving classroom interaction.

Steps in simulated teaching

1. Orientation of the student-teachers with the concept of simulation, its use in teacher training, steps to be followed in simulated teaching, role of student teachers as students, teachers and observers and the setting for adopting simulated teaching.
2. Selection of the specific teaching skills to be practised.
3. Demonstration lesson by the teacher educator (supervisor).
4. Formation of groups of student teachers.
5. Assignment of roles-Roles are of the teacher, student and observer in student - teachers.
6. Determining the procedure and technique of an observation of the classroom interaction.
7. Delivering the lesson by the student -teacher.
8. Follow up and further modification in the teaching technique.

D.R. Cruickshank (1968) developed a teacher training system capable of presenting the student with up to thirty-one different stimulated problems related to teaching.

Reasons for the use of simulation technique

N.A. Fattu (1966) has given the following reasons for the use of simulation:

1. When an environment cannot be duplicated exactly, then it may be made as realistic as possible.
2. When a process is to be examined systematically, it may yield information through developing and operation a situation.
3. When a system is too difficult to manage, simulation may suggest a way of breaking it down into sub-systems. Then it may be noted how the skills and the information required may be pooled.
4. When a difficult problem is confronted beyond a teacher's ability, simulation may help him synthesize and infer a good solution.
5. Cost may be reduced by simulating rather than by alternative forms of experimenting.
6. Simulation may also indicate which variables in a complex operation or system are important and how they are related to each other.
7. The amount of time accomplished is controllable by the simulator.

Simulation technique has been applied in the USA and the UK with reference to teacher education, teacher educators, training of principals and educational administrators. In India, it is still in its infancy.

In the year 1971 Prof. K.P. Pandey of the Himachal Pradesh University tried the first experiment in simulated teaching with B.Ed., in-service trainees enrolled for correspondence courses. The Teacher Education Department of NCERT and the Centre for Advanced Study in Education, M.S. University of Baroda have also done some work in 'simulated teaching' in the context to teacher training.

Importance of Simulation

1. It helps to build confidence in the student-teacher.
2. It bridges the gulf between theory and practice.
3. It enables the learner to learn directly from experience.
4. It promotes a high level of critical thinking.
5. Its games develop in the students an understanding of the decision-making process.
6. It provides feedback to the learners on the consequences of actions and decisions made.
7. Its technique motivates students by making real-life situations exciting and interesting.
8. Role playing enables the individual to empathise with the real life situations.
9. Post-simulation analysis enables teachers and learners to assess the realism of the situation by uncovering misconceptions.

Limitations of Simulation

1. It is a misconception that adults can play the role of pupils.
2. During an exercise, the observer may record incorrectly.
3. Simulation attempts to portray real situations in a simple way is very difficult.
4. There is a tendency to use the results of a single simulation as the sole basis of generalization.

- ***Role play***

Role playing is a teaching technique in which students assume an identity other than their own and play the role of others with whom the new identity has been assumed. The role played may be that of a teacher, a parent, a sales man, a manager, a banker and even inanimate things familiar in the course of interaction with the society. While playing such roles, participants of the role play exhibit behavioural patterns they believe are characteristics of those roles in specific social situations. For example two students might enact an interview, one taking the role of manager and the other of an interviewee. Through role playing the students get a vicarious experience.

Types of Role playing: There are two types of role playing. They are structured role playing and spontaneous role playing. In structured role playing the teacher selects the situations to be enacted in advance and specifies the goals of the activity. Proper planning is required for this. In some cases written material which describes the role and situations is also presented in advance. Spontaneous role playing arises in the midst of a discussion.

SURVEYS AND MARKET STUDIES

Modern markets operate in a dynamic environment. Here a businessman always seeks information regarding the trends in the markets. In order to know the fluctuations in a market, he has to depend on market surveys. It refers to collection of data by interviewing a limited number of people selected from a large group. In this method, information is obtained by asking the questions to the selected respondents.

A commerce teacher can use the market survey as a method of teaching a complex concept or a process involving a variety of ideas. For example, a commerce teacher will have to help the pupils to develop deep understanding of the various aspects involved in the functioning of a market. Instead of presenting these ideas through theoretical exposition the pupils can be made to gather the ideas by conducting a market survey. This will make the information gathered practical oriented, functional, realistic and meaningful. The teacher should take initiative in guiding the students in conducting the surveys. Here the maxim concrete to abstract is followed

How to conduct a market survey?

It is very significant on the part of a teacher to think about the stages of a market survey.

Stage 1 Identification of a complex problematic situation

In order to carry out the survey programme the teacher should discuss with the students an appropriate complex situation and convince them of the need for gathering information directly. It is better to divide the entire students of the class into different groups and assign specific tasks.

Stage 2 Planning the survey technique

After identifying the problem and specifying the tasks and objectives, the second step is to find out the best procedure for gathering information. Depending on the source of the information required tools should be selected.

Stage 3 Collection of data

After the determining the source of data the next step is the actual collection of data. Proper planning in terms of time schedule etc has to be done under the leadership of the teacher.

Stage 4 Analysis and interpretation of data

The data should be tabulated and classified. Here statistical techniques can be used for analyzing the data. Students can arrive at generalization and conclusions on the basis of the results of such analysis.

Stage 5 Preparing the survey report

Based on the survey, each group is responsible to prepare a report. The teacher should evaluate the report.

INTEGRATION OF TEACHING SKILLS

Link practice is the second step in micro teaching. Link practice combines all the skills developed through micro teaching. Class time is increased to 20 minutes from 5 minutes. The trainee has to plan 8 to 12 lesson each for 20 minutes duration. It is the term used to describe the type of teaching which acts as a bridge between micro teaching and teaching practice. It normally involves the integration of all the skills the teaching of half a class and the planning and teaching of 8 to 12 lessons in a particular topic. It is very important because there is a wide gap between the micro teaching and

normal teaching practice. If the trainees are allowed to take the regular lass immediately after the micro teaching they are not able to integrate all the skills. In such a situation trainees are likely to forget all they have been taught and follow the available teaching model whether food or indifferent. Transition from one skill and one short lesson to teaching practice is abrupt. The food habits developed in micro teaching likely to disappear if the trainee proceeds immediately to the regular class. Therefore, link practice is essential in between the micro teaching and the regular teaching practice programme.

Assignment Method

Assignment method is the embodiment of both lecture demonstration method and the individual laboratory work by the students. So, it includes the merits of both methods and is best suited for high and higher secondary classes. The whole of the prescribed course is divided into a number of well-connected portions to be covered in the week or so, and are called as assignments.

Two types of assignments can be used are

i. Home assignments
ii. School assignments

Home Assignments

These include writing of answers to questions assigned by the teacher. The teacher gives references from different sources concerning the topic. Grasping the ideas given by the teacher, the pupils write down the answers to the questions set by the teacher and hand them over to the teacher. The teacher goes through the answer and finds out discrepancy if there is any. He may ask the pupils to refer the text book if their answers are not up to the mark.

School Assignments

This includes the performance of experiments in the laboratory and answering of a few questions put by the teacher. Some of the experiments that are difficult or those which involve danger are performed by the teacher himself and questions relating to that will be but to the students. The experiments which the students can perform and which are simple are assigned to them.

They are given a sheet of instructions before they start their practical work. They go through these instructions and answer the questions asked in their note books. The

teacher also keeps a 'progress record' with him in which he enters the progress of every student. This helps the teacher to know where each student stands.

Objectives of Assignments

An assignment should help the students to imbibe the scientific attitudes and should provide the training in scientific method. The students should develop interest in further study of science by introducing new and wider avenues of study. It should help a student to discover facts of science so that he may weave them into appropriate concepts and principles.

Criteria of a Good Assignment

1. An assignment should be in relation to the topic under discussion.
2. It should be brief and to the point so that students may easily comprehend its implications.
3. It should be clear in its aims and objectives and ought to be simple.
4. The assignment given should be in such a way that it kindles the enthusiasm and interests of the students.
5. It should be presented in a way that it stimulates reflective thinking and gives freedom to students to discover things for them selves.
6. The given assignments should be sufficiently thought-provoking and challenging.

Merits

1. This method is based upon the principle of 'learning by doing' and provides full opportunity to the students to work in the laboratory.
2. The students form the habit of extra study. They learn how to consult references and gather the desired data.
3. This method is economical because the same type of apparatus is not required at a time as all the pupils in the class are given different assignments depending upon their progress and interest.
4. It helps in developing the scientific attitudes and training in the scientific method.
5. The teacher can give individual attention to the pupils.
6. The 'progress chart' gives an idea of the weaker and the brighter students just at a glance. The teacher thus, can check the weaker students from time to time and give instructions accordingly.

Demerits

1. The success of this method depends upon a well-drawn up assignment.
2. The text books written with regard to these are not available.
3. It requires a well equipped library and laboratory which is yet a problem for a developing country like India.
4. It is a slower process and the heavy curriculum may not be finished in the limited time.
5. There is a danger that the weaker students may copy the results from the brighter students.

Discussion Method

This method should also find its due place in the teaching of science. It can be followed in an institution depending upon the time and resources available. There can be two different approaches in which any one can be chosen depending upon the available time.

i. The teacher gives a brief introduction of the topic for discussion. The students are allowed to prepare individually for an hour or so. However teacher would guide them if necessary. After the scheduled time, the teacher initiates the discussion by probing the

students by some questions or problems. By putting some

key questions in logical sequence the topic is covered through discussion. The main points are written on the black-board.

ii. The first approach is time consuming. This method could be used only when block 2 or 3 periods are available continuously. In other cases the second approach may be useful. Hence the teacher gives the introduction to the discussion earlier, say a couple of days before he has planned to have the discussion. The students are divided into groups depending upon the strength of the class. So in the next days the students would collect data with regard to the topic of the discussion and get their materials and points prepared for discussion.

On the day of the discussion the teacher initiates the discussion by recollecting some of the points which he gave as introduction the other day and also he poses some questions. Thus the students are motivated to take part in the discussion actively. As they are all already prepared, even a single period is enough to carry out the discussion. In this way this second approach saves time.

Whenever this method is followed the teacher should keep in view the following points.

i. The topic for discussion should commonly be of general nature - neither very simple nor too technical.
ii. Extra reading and beyond the text reading should be emphasized to the students. The best group among the students could be appreciated so as to motivate them.
iii. The discussion should stick on to the theme and time shouldn't be wasted in irrelevant discussions.
iv. Maximum number of students are to be encouraged to take part in the discussion actively. At the same time class discipline should not be

Unite 4

(A).Charts, Graph ,Maps

(B).textbook , magazine ,news paper .

(C).T.V., Radio,OHP

Television:

Television or Learning show is the use of television programs in the field of distance education. It may be in the form of individual television programs or dedicated specialty channels that is often associated with cable television in the UnitedStates as Public, educational, and government access (PEG) channel providers. There arealso adult education programs for an older audience; many of these are instructionaltelevision or "tele course" services that can be taken for college credit Many children'stelevision series are educational, ranging from dedicated learning programs to those thatindirectly teach the viewers. Some series are written to have a specific moral behind everyepisode often explained at the end by the character that learned the lesson. In the social aspectsof television, several studies have found that educational television has many advantages.

v. **Radio**:

vi. Radio is a powerful mass medium used in education for disseminating information, imparting instruction and giving entertainment. It serves with equal ease in bothdeveloped and developing countries. It spreads information to a greater group of populationthereby saving time, energy, money and man-power in an effective way. Radio is a simple andcheap medium readily available as a small toy. Now small and handy transistors are availablewith even poorest of people. A small transistor can carry the message to any place on -the earth. It needs very little for maintenance and cheaper production can be taken up withmore and more resources. Radio speaks to an individual so also to millions at a time. Hence,any listener can think the broadcast is meant for him whereas when listened in group all thinkthe massage directed

towards them. Each student takes the broadcast as very intimate to him.Due to its portability and easy accessibility radio could found its place everywhere whether itwas a field, a school, a kitchen or a study room. Radio is a blind man's medium and is meant for ears only. It plays with sound and silence where the sound can be anything like voice or word,music and effect. When one hears radio, simultaneously one can imagine happenings inhis/her mind. So it is called as theatre of blind or a stage for the mind. Radio can be listenedto simultaneously along with another work like reading also.

Charts :

A chart, also called a graph, is a graphical representation of data, in which "the data is represented by symbols, such as bars in a bar chart, lines in a line chart, or slices in a piechart". A chart can represent tabular numeric data, functions or some kinds of qualitativestructure and provides different info. The term "chart" as a graphical representation of data hasmultiple meanings. Charts are often used to ease understanding of large quantities of data andthe relationships between parts of the data. Charts can usually be read more quickly than theraw data. They are used in a wide variety of fields, and can be created by hand or by computerusing a charting application. Certain types of charts are more useful for presenting a given dataset than others. For example, data that presents percentages in different groups are often displayed in a pie chart, but may be more easily understood when presented in a horizontal barchart. On the other hand, data that represents numbers that change over a period of time mightbe best shown as a line chart.

Journal:

A "journal" is a scholarly periodical aimed at specialists and researchers. Articles are generally written by experts in the subject, using more technical language. They contain original research, conclusions based on data, footnotes or endnotes, and often anabstract or bibliography. The Journal of Physical Chemistry, The Chaucer Review, The MilbankQuarterly, and Labor History are examples of journals.

Magazines:

Magazines are publications; usually periodical publications that are printed or electronically published they are generally publis variety of content. In the case of written publication, it is a collection of written articles. A"magazine" is a periodical with a popular focus, i.e. aimed at the general public, and containing news, personal narratives, and opinion. Articles are often written

by professional writers with or without expertise in the subject; they contain "secondary" discussion of events, usually with little documentation.

Newspaper:

A newspaper is a serial publication containing news, other informativearticles listed below), and advertising. A newspaper is usually but not exclusively printed onrelatively inexpensive, low-grade paper such as newsprint. Newspapers are typically published daily or week

i. Graphs

Graphs represent visual aids of depicting numerical or qualitative relationships. Graphs may be broadly classified as statistical and mathematical. For the purpose of instructional aid, we make use of statistical graphs. Statistical graphs are the means of presenting the data in a visual form. These are available in the various forms, given below.

a. Bar graph

It consists of bars arranged horizontally or vertically from zero bases. Useful comparisons can be made with the help of these bars as the size, length or colour of the bars visualizes the different values.

b. The circle or pie graph

It consists of the sectors of a circle shown by different coloures or types of shadings and serves a useful purpose for comparison and contrast.

c. Line graph

It consists of portraying data with the help of lengths and shapes of lines.

d. The pictorial graph

In such graphs the visual presentation is made through pictures. The number of size of the pictorial illustration conveys the proportionate amounts for the necessary comparison.

OHP:-Over head Projector

The over head projector was invented to train soldiers in the second world war. With the help of this projector the matter on transparency of the measure of 10 inches X 10 inches can be projected on screen or wall. the teacher during teaching process can teach student while writing or drawing on this transparency the students can see pictures on wall or screen while seating on their positions . they can clarify the information through observation and by asking questions. If required . overhead projector is an important useful aid for all the subjects because it is the only aid which can be

placed before students and pictures or figures or any information can be presented on screen or wall at limited heights. in subject of economics , this aid has proved to be inevitable for learning.

Concept map

In the 1960s, Joseph D. Novak (1993) at Cornell University began to study the concept mapping technique. His work was based on the theories of David Ausubel (1968),

"A concept map is a graphical representation where nodes (points or vertices) represent concepts, and links (arcs or lines) represent the relationships between concepts. The concepts, and sometimes the links, are labeled on the concept map. The links between the concepts can be one-way, two-way, or non-directional. The concepts and the links may be categorized, and the concept map may show temporal or causal relationships between concepts.

Concept mapping is a technique that allows you to understand the relationships between ideas by creating a visual map of the connections. Concept maps allow you to:

(1) See the connections between ideas you already have (which can be helpful in studying for an exam);

(2) Connect new ideas to knowledge that you already have (which can help you organise ideas as you find them in researching for an essay or research paper); and

(3) Organize ideas in a logical but not rigid structure that allows future information or viewpoints to be included (which can help you absorb and adapt to new information and ideas).

Steps

- Read text and highlight light important ideas
- Identify key concepts
- Make list of general and specific concepts
- Place the concepts
- Join the concepts with lines and label the lines with linking words
- Finish mapping of all concepts
- Put cross links
- Put arrows

Uses of concept map

- Teaching and revision topic
- Reinforce understanding
- Check learning and identify misunderstanding
- Assessment

- To generate ideas
- To communicate complex ideas
- To aid learning by explicitly integrating new and old knowledge.

Advantages

- Dynamic tool
- Clarify misunderstanding
- Deeper understanding
- Visual symbols are quickly and easily recognized;
- Minimum use of text makes it easy to scan for a word, phrase, or the general idea; and
- Visual representation allows for development of a holistic understanding

Qualities of a good economics textbook:

Text books are the most widely used of all instructional materials. Now a day's text book has become a course of study. A set of unit plans and a learning guide as well. A text book should really design for the pupils rather than the teacher. Text book should stimulate reflective thinking and cultivate in students the scientific attitude. In the teaching-learning process, the text-book occupies an important place. There is a saying "As is the text-book, so is the teaching and learning". A good text-book can even replace class-room teaching. The Economics text-book should aim at aiding the pupils in the development of their personalities, in developing open mindedness, developing appreciation and understanding of nature and not merely stuffing their minds with facts.

The opportunity of this analysis has been offered to students, future teachers of economics, around the time when they will directly use the textbooks for preparing and teaching the lessons. The main objective of this coordinated exercise of exploring the quality of the alternative economics textbooks is the development of the students' abilities to critically analyze the textbooks which they will use in the near future and for which they will have to express alternative options. The interests of the authors are also focused on the role of the textbooks in the learning process, on the analysis of their contribution to the students' progress in the scientific knowledge but also to their personal development. The textbook, as a source of

the basic knowledge of economics as a school subject, but also as a collector of methodological ideas, is a „territory" that is insufficiently explored by students in the initial teaching preparation.

Photograph:

A Photograph is worth a thousand words through which a complex idea can be conveyed with just a single still image. Pictures make it possible to absorb large amounts of data quickly. Using photographs for explaining complex phenomena is one of the teaching aids
of modern education system all over the world. As the world is changing day by day so are the describing complex situations during learning as opposed to other representational data such as
complex book text.
methods of instructions as the modern curriculum requires conceptual elaborations. Visual aids
have the tendency to materialize the thoughts of students in the form of graphics to give thoughts a concrete frame of reference. Use of photographs is important for students because
they are more likely to believe findings when the findings are paired with colored image