

**STUDY GUIDE**  
**ON**  
**TEACHING STRATEGIES**

**(M.A.EDUCATION/M.Ed.)**

**COURSE CODE 846**

**UNITS: 1-9**

**BY**

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## FOREWORD

Teaching technology involves the know-how of teaching process. It includes the mechanism of instructional process in the classroom situation, levels of teaching, theories and teaching operations.

Teaching is one of the instruments of education and its special function is to impart understanding and skill. We limit our outlook to the work of teaching, omitting those more important means of education which are involved in the school as a systematically organized social community, including its tone or general moral atmosphere, its disciplines and that potent influence of the personality of teacher.

While talking about teaching, we have in mind the teacher and students. Unless we think of their real needs and interests, our teaching learning will be done in a vacuum. It is, therefore, clear that to make the teaching learning in our educational institutions effective and educationally sound, we must look into its various aspects very carefully and critically, so that they contribute in making teaching learning successful and inspirational.

In view of the importance of teacher training, the Allama Iqbal Open University has launched M.A. (Education) programme to enable the teachers to use teaching strategies as per their requirements. The course has been designed to bring out important aspects of teaching strategies and their potential role. The treatment of the subject places high emphasis on imparting instruction in the Pakistan educational scenario. The course is indeed useful for the teachers and general public.

I appreciate the efforts of Prof. Khadim Ali Hashmi for course reviewing and Mr. Umar Farooq for editing the course.

Finally, I congratulate Dr. Muhammad Rashid, Dean, Faculty of Education and Course Development Coordinator for completing the study guide to be offered on time. We will welcome any suggestion/comments for improvement of the course.

( Dr. Anwar Hussain Siddiqui)  
Ex- vice chancellor  
September 1999

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(PROF. DR. MUHAMMAD RASHID)  
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## LESSON PLANNING.

Introduction

Objectives

Meaning of definition of lesson plan

Approaches to lesson planning

Types of lesson plan

Elements of teaching unit

Activities

Exercise

Bibliography

## OBJECTIVES OF THE COURSE

1. Discuss the concept and methods of teaching strategies.
2. Explain difference style of teaching.
3. State concept of teaching.
4. Analyse the learning objectives and teaching strategies.
5. Appreciate the planning of teaching with special reference to task analysis and taxonomy of objectives.
6. Discusses the teaching methods and techniques for teaching-learning process.
7. Explain the simulated teaching.
8. Identify the innovations in teaching such as micro teaching, computer assisted instruction, team teaching, personalized system of instruction, modular approach, multi-media teaching and system approach.
9. Specify the managing teaching learning process.
10. Discuss various approaches to lesson planning.

UNIT - 1

**INTRODUCTION TO TEACHING STRATEGIES**

BY

**PROF. DR. MUHAMMAD RASHID**

## **UNIT-1 INTRODUCTION OF TEACHING STRATEGIES**

- 1.1 Introduction**
- 1.2 Objectives**
- 1.3 Meaning and concept of teaching strategies**
- 1.4 Difference between methods and teaching strategy**
- 1.5 Style of teaching**
  - Autocratic style-Lecture, demonstration, Tutorials and programmed instruction.**
  - Permissive style-Heuristic strategy, Question-answer, project strategy, group Discussion and role-playing**
- 1.6 Activities**
- 1.7 Exercise**
- 1.8 Bibliography**

## 1.2 INTRODUCTION

'Strategy' is borrowed term from military which actually means to utilize all of a nation's forces, through large-scale, long-range planning and development, to ensure security or victory.

For the last two decades, social scientists have started using it in social sciences, teaching and human dynamics.

## 1.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the meaning and concept of teaching strategy;
2. differentiate between methods and teaching strategy;
3. explain the style of teaching such as:
  - i) Lecture strategy.
  - ii) Demonstration.
  - iii) Tutorial.
  - iv) Programmed instruction.
4. State the permissive style of teaching strategies such as:
  - i) Heuristic strategy.
  - ii) Question-Answer strategy
  - iii) Project strategy
  - iv) Group discussion strategy
  - v) Role play strategy.

## 1.3 MEANING & CONCEPT OF TEACHING STRATEGIES

According to Encyclopaedia, 'Strategy' refers to science or art of planning and directing large military movements and operations.

Lawton, Denis (1981, P.4) says, "The teaching strategy is a generalized plan for a lesson(s) which includes structure, desired learner behaviour, in terms of goals of instructions and an outline of planned tactics necessary to implement the strategy."

Mackenzie, N., et al (1976, P.7) have defined the terms 'Teaching' and 'Strategy' separately. For him, "Teaching refers to a system of actions involving an agent, a situation, an end-in-view, and two sets of factors in the situation-one set over which the agent has no control and one set which the agent can modify with respect to the end in view."

Controlling factors constitute the means, by which goals are achieved. These means are of two types:-

- (i) Material means (i.e. subject-matter, teaching material and teaching aids).
- (ii) Procedural means the ways of manipulation and implementation of the material means.

B.O. Smith has defined strategy "as a pattern of acts that serves to attain certain outcomes and to guard against certain others."

From this definition, we can find out the uses of strategy:

- (i) To ensure that learning will occur in as brief a time as possible.
- (ii) To induce students to engage in exchange of ideas.
- (iii) To minimize the chance of wrong responses in learning concepts, principles or facts.
- (iv) To ensure the attainment of defined instructional objectives.

These teaching strategies are used by the subject teacher. He manipulates them according to the need of the students, subject-matter and of course, the instructional objectives and then, implements them in



classroom teaching. Selection and manipulation of the teaching strategies is done at pre-active phase of teaching while implementation is done at interactive phase of teaching.

There is always a confusion in between two terms: teaching methods and teaching-strategy. People consider them as synonymous but there is a remarkable difference between the two terms.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.66-67	1-1
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#### 1.4 DIFFERENCE BETWEEN METHOD AND TEACHING STRATEGY

When we talk about teaching strategies, we use the term 'Teaching Tactics'.

##### Teaching Tactics

It is a unit of teaching behaviour which helps in achieving specific instructional objectives. It may be verbal or non-verbal to influence the learner's behaviour.

E.Stones and S. Morris (1972, P.57) defined the term 'teaching tactics' as "Teaching tactics is good linked influenced/influencing behaviour of teacher the way he behaves in the instructional situation in working toward the development of the strategy; units of teacher behaviour through which the teacher fulfills his various instructional roles with the students of his class from moment to moment; the component of teacher behaviour through which the teacher, the students and subject-matter interact.

## Types of Teaching Strategy

The teaching strategies can be classified under the following two types:

Autocratic Styles	Permissive Styles
<ol style="list-style-type: none"><li>1. Lectures</li><li>2. Demonstrations</li><li>3. Tutorials, and</li><li>4. Programmed instructions</li></ol>	<ol style="list-style-type: none"><li>1. Question - Answer strategy</li><li>2. Heuristics</li><li>3. Project - strategy</li><li>4. Group - discussion</li><li>5. Role - playing</li><li>6. Assignments</li><li>7. Computer assisted instructions</li><li>8. Brain storming</li><li>9. Independent study</li><li>10. Sensitivity training</li><li>11. Leadership group or T-Group.</li></ol>

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.67-69.	1-2
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## 1.5 STYLE OF TEACHING

### 1.5.1 Autocratic Styles

These are the traditional styles of teaching. These are teacher-centred or content-centred. Teacher is more active, and learners are passive listeners. No emphasis is given on learners' abilities, capabilities, interests, and personality.

Different types of autocratic strategies are discussed below:

**i) Lecture Strategy**

It is the oldest traditional strategy originated from idealism philosophy. It is also known as communication strategy:

- (a) Focus:** To achieve cognitive objectives.
- (b) Structure:** Main emphasis of this strategy is on the presentation of the content. Teacher is more active and learners are passive listeners. The teacher plans and controls the whole teaching learning process. He may take help of audio-visual aids to make lecture interesting.
- (c) Principles:** It is based on certain principles
  - 'Whole to part' maxim of teaching is followed in content presentation.
  - Students learn better through listening
  - Subject-matter can be correlated with other subjects.
  - New knowledge is given related to previous knowledge.
- (d) Application:** Though it cannot be useful at primary level of education, it can be used at secondary and higher level of education to teach any subject. To make lecture more interesting and effective, audio-visual aids can be utilized and question answer strategy can be added.
- (e) Advantages:**
  - It is economical with regard to time.
  - It helps in developing habit of concentration among the students.

- It helps in achieving even high order cognitive objectives (i.e. application, analysis, synthesis and evaluation).
- It is so flexible that teacher may use different types of teaching material at one time.
- New subject-matter can easily be introduced.
- A good teacher can use his full knowledge and verbal communication while teaching.

**(f) Limitations:**

- As learners are passive listeners, lecture fails to draw attention of the learners for a long time.
- It creates boredom to the learners and thus results in unfruitful teaching.
- More emphasis on presentation rather than the participation of the learners.
- Individual differences are not taken into consideration.
- It cannot be used for achieving higher affective objective and psychomotor objectives.
- It does not have a rigid out-line of teaching, so, a teacher may deviate from teaching points.
- Teachers do not take pains in planning the teaching before hand and therefore, they are not able to communicate the content so effectively.

**(g) Precautions:**

- The teacher should have mastery over the subject.
- He must follow maxims of teaching to implement strategy successfully.
- He must aid this strategy with questions-answer to motivate students and by use of audio-visual aids to make lectures more effective.
- The teacher must know the psychological factors of the learners before he plans or delivers the lecture.
- He must impart new knowledge relating to previous knowledge.
- He must use simple, effective and meaningful language.

For further details, please read the below mentioned material.

Vedanayagam, E. G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publishers Pvt. Ltd. PP.50-60	1-3
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**(ii) Demonstration**

It is a traditional classroom strategy used in technical and training colleges and in teacher-education.

- (a) Focus:** To achieve psychomotor and cognitive objectives.
- (b) Structure:** Demonstration is given in three successive steps:
  - **Introduction:** In this step, objectives of the lesson are stated. The teacher may be called a demonstrator. He

demonstrates the activity before the student that is to be developed.

- **Development:** Students try to initiate the demonstrated activity. If there is any query, the teacher tries to satisfy them by further demonstration and illustrations.
- **Integration:** At this step, the teacher integrates all the activities and then these activities are rehearsed, revised and evaluated.

(c) **Principles:** This strategy is based on following principles:

- Learning by doing maxim is followed.
- Skills can be developed by imitation.
- The perception helps in imitation.

(d) **Application:** This strategy is applied mainly in technical or training institutes. In teacher education programmes, it is used to develop skills in the student-teacher. At school level, a teacher applies it in teaching science, biology, nature-study, arts and crafts.

(e) **Advantages**

- It helps in involving various senses to make learning permanent.
- Though, teacher-behaviour is autocratic, he invites the cooperation of pupils in teaching-learning process.
- It develops interest in the learners and motivates them for their active participation.
- It helps in achieving psychomotor objectives.

- Any simple or complex skill becomes easy to understand.

**(f) Disadvantages**

- It can be used only for skill subjects.
- Only the attention of the learners is invited towards the activity demonstrated. They are not free to discuss about it.
- Due to poor economic conditions of the government-schools, there is scarcity of audio-visual aids and equipment and the teachers are not so creative to produce hand made models for demonstration.
- There is a general lack of sincerity and diligence among teachers who wish to complete the syllabus or syllabi at the earliest without putting sincere efforts.

**(g) Suggestions**

- The teacher should be a sincere, diligent, and skilled person.
- Teacher should, himself prepare the models for demonstrations and encourage the learners too.
- Demonstration should be followed by discussions.
- A teacher must have the ability to use audio-visual aids with expertise.

For further details, please read the below referred material.

Rogers, Jenny, (1989)	<u>Adults Learning</u> , 3rd ed. Milton Keynes, Open University Press, PP.118-125.	1-4
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### (iii) Tutorials

Tutorial is follow up study of lectures. It is highly individualized, remedial teaching.

- (a) **Focus:** To provide remedial help for the learners and develop their cognitive and affective domains of behaviours.
- (b) **Principle:** This strategy is based on following principles:
- Principle of individual differences.
  - Remedial teaching.
- (c) **Structure:** This strategy involves the following steps:
- **Diagnosis:** After delivering the lecture in the general class, the teacher tries to find out those students who have some problems in understanding the content. These students are divided into particular groups on the basis of similar problems.
  - **Prescription:** The teacher tries to generate teaching relating to the needs, abilities and capabilities of each group of students. These classes are known as tutorial-classes.
  - **Follow-up:** The teacher tries to evaluate his teaching in terms of learning outcomes of the learners.



Tutorials classes are of three types:

**i) Supervision tutorials:** In this type of tutorials, the teacher selects those students who are above average intelligence. Teacher assigns a problem to the student and he is asked to present a paper on this problem. The student presents his paper related to the problem before the teacher and his classmates. The teacher observes and supervises his paper presentation. These audience may put questions and he has to answer them. When he is in a difficulty to satisfy the queries of the audience, the teacher helps him by giving appropriate and satisfactory answer to the listeners.

**ii) Group tutorials:** These steps of tutorials are arranged for students of low intelligence. Those students who have difficulties in classroom teaching, are grouped together on the basis of nature of the problem. Teacher provides them remedial teaching and thus, helps to make the lecture clear and legible.

**iii) Practical tutorials:** This type of remedial classes tries to remove difficulties in practical-work. These tutorials can be organized after lecture and practicals in the objects like Science, Home science, Art, Music, etc. These tutorials are basically employed to achieve psychomotor objectives.

**(d) Advantages of tutorials**

- As individual differences are taken into consideration, it is supposed to be an effective and efficient way of teaching.
- Teacher is like a doctor to diagnose the weaknesses of the learners and on the basis of these weaknesses, he provides specific treatment of teaching.

- Teacher is helping and cooperative to the learners, thus, he gains the confidence of the learners in revealing their problems.

**(e) Disadvantages**

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

**(g) Suggestions**

- There should be some criteria for forming the tutorial groups.
- It is the moral duty of a teacher to be just for his pupils.
- The teacher should be sympathetic, cooperative and should have patience towards the weak students who may demand further attention.
- The teacher should opt democratic behaviour so that he is able to encourage and motivate students to take part in discussion.

For further details, please read the below referred material.

Rogers, Jenny, (1989)	<u>Adults Learning</u> , 3rd ed. Milton Keynes, Open University Press, PP.143-157.	1-5
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#### (iv) Programmed Instruction

It is a new, autocratic and individualized strategy. It is based on psychological principles of operant conditioning. The responses of the learner are strictly controlled by the programmer.

- (a) **Focus:** To bring desirable change in the cognitive domain of the learner's behaviour.
  
- (b) **Structure:** The selected content is analysed and broken into smaller elements. Each element is independent and complete in itself. The programmer develops frames based on each element. Responses are also provided to the learner in the programme on some different leaf-lets. The correct response of the learner is the new knowledge or new behaviour. Immediate confirmation of correct response provides reinforcement to the learner and he proceeds to the next frame. Wrong responses require feedback. Physical presence of the teacher is not necessary. He may come to give instructions regarding the programme. Students are left for learning at their own pace. Programmed instructions are of three types.
  - i) **Linear programming:** It is being used for teaching all subjects. In this programme, progressive chain elements is presented. Last step is at the mastery level. It is based on five fundamental principles;
    - Small steps
    - Active responding
    - Immediate confirmation

- Self-pacing, and
- Student-testing

- ii) **Branched programming:** It is generally used in mechanical fields.
- iii) **Mathematics:** In this programme, retrogressive chain of elements is presented. First step is the master level while the last step is the simplest element.

**(c) Advantages**

- The main emphasis is on individual differences and students' involvement.
- There is no fixed time-interval for learning. Students may learn at their own pace.
- Learning by doing maxim of teaching is followed to involve learners in the learning process.
- Students are exposed only to correct responses, therefore, possibility to commit errors is reduced.
- Immediate confirmation of the result provides reinforcement to the learners and encourages the learners to proceed further. Feedback is provided to wrong answers, so that learner is able to develop mastery over the content.

**(d) Disadvantages**

- It is very difficult to develop an instructional programme.
- Only cognitive objectives can be achieved.
- Due to tight schedule of time-table, students cannot be left to learn at their own pace. It would be very difficult to learn the content/the subject matter in a limited period of time.

- There is no chance for students' creativity, their responses are highly structured.
- Development of programme is not economical in terms of cost and time.
- In absence of the teacher, students may spoil the disciplinary tone of the class, or they will be helpless when any problem arises.
- It cannot be applied at primary level of education or at higher education.

**(e) Suggestions**

- A programmer should have thorough knowledge of the content and technique of content analysis.
- This strategy should be used as a supplementary device for remedial teaching in the classroom.
- It should be used in distance education or continuing education programmes where no rigid time-table is applied.
- If not at a primary level or higher level of education, this strategy may be useful at secondary level of education where many new subjects are introduced in the curriculum and they create problems in learning.
- If applied in classroom teaching, teacher should be present in the class. He can maintain discipline in the class and help in eradicating the difficulties of the learners. Personal touch of the teacher can be more fruitful and effective in student's learning.

For further details, please read the below referred material.

Curzon, L.B. (1977)	<u>Teaching in Further Education: An Outline of Principles and Practice</u> , 5th ed. Great Britain, Cassel, PP. 369-376.	1-6
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### 1.5.2 Permissive Style of Teaching Strategies (or Democratic Teaching Strategies)

These strategies are based on "Modern Theory of Organization" (relationship centred). These involve the participation of both the teacher and the learner. It is mainly child-centred i.e. content, and strategies are decided considering learners' abilities, capabilities, need and personality. These strategies help in exploring the creativity of the learners and developing all aspects of behaviour.

Different permissive teaching strategies are discussed below:-

#### (i) Heuristic Strategy

The term 'Heuristic' refers to Armstrong who was the exponent of this strategy. Pollion and Dankar (1945) called it "problem solving." It is based on the psychological principles of 'trial and error' theory. Logical and imaginative thinking are prerequisites for this type of teaching strategy. It is an economical and speedy strategy.

##### (a) Focus

- To develop problem-solving attitude.
- To develop scientific attitudes towards the problem.
- To develop power of self-expression.

##### (b) Principles

To each as little as possible at one time.

- To encourage learner to learn himself as much as possible.

(c) **Structure:** A problem is placed before the learners and they are asked to find the solution of the problem through various literacy means, like library, laboratory work-shops etc. Teacher's role is to initiate the learning and pupils are active through-out the learning process. By using their creative thinking and imaginative power, they try to find out the relevant solutions based on some logic. They learn by self-experience.

(d) **Advantages**

- It helps in achieving cognitive, affective and psychomotor objectives i.e. it helps in all-round development of the child.
- Students are put into the situation to learn by self-experience. It certainly develops self-confidence and self-reliance in the learners.
- It helps in developing scientific attitude and creativity in the learners.
- Teacher encourages the learners to explore the environment in search of the solutions of the problems. By doing so, some new knowledge is discovered by them.
- Teacher is always ready to provide individual guidance regarding the solution of the problem. Thus, interaction between the teacher and the learner takes place in a cooperative, conducive environment.

(e) **Disadvantages**

- It cannot be used at primary level of education.

- High intelligence and divergent thinking is required in the learners. But, there are some students who are below average and fail to succeed in discovering the solutions of the problems. It frustrates them.
- In true sense, none of the teachers have patience for providing individual guidance to the learners. And, learners, too, feel hesitation to approach the teacher for seeking his help.

**(f) Suggestions**

- There can be number of solutions for a problem. So, it is the teacher's duty to provide guidance to the learners to select the most relevant solution of the problem.
- Problem should be related to the course and curriculum and a definite time period should be allotted to the learners to finish their research work.
- Student's abilities, capabilities, interest and choice of the subject should be taken into consideration in allotting the problems.
- There should be an eligibility criteria for providing the problems.
- In our country, the whole teaching is examination-centred, neither teacher nor the pupils have patience to apply this strategy and get benefit from it. If some enlightened teachers of science, mathematics, and social sciences apply this strategy in their teaching, it will help in developing creative, confident students.



For further details, please read the below referred material.

Rai, B.C. (1994)	<u>Technique and Methods of Teaching</u> , Lucknow, Prakashan Kendra, PP. 71-75.	1-7
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## (ii) Question-Answer Strategy

It is the ancient method of teaching. It is known as "Socratic Method". It was developed by the famous philosopher Socrates.

According to Parker, "The question is the key to all educative activity above the habit-skill level."

(a) **Focus:** To achieve the cognitive objectives and bringing knowledge to the conscious level.

### (b) Principles

- Theory of unfoldment: all knowledge is within the child, teacher cannot teach any thing from outside.
- The knowledge can be emitted by linking the questions with his answers.

(c) **Structure:** Socrates has suggested three steps:

- i) To prepare questions and arrange them in a logical sequence.
- ii) To present the questions in such a way that curiosity arises among the learners
- iii) To ask new questions by linking with the learner's response

**(d) Advantages**

- in asking the questions, the teacher keeps in mind the abilities, needs and interests of the learners.
- It involves the learners' participation towards the subject-matter and in teaching acts.
- It helps in achieving cognitive objectives and bringing knowledge at conscious level.
- Classroom verbal interaction is encouraged.
- It is an useful strategy at all the levels of education.

**(e) Limitations**

- i) It is difficult to prepare good questions, and arrange them logically.
- ii) The whole content-matter cannot be taught by this strategy.
- iii) The teacher wants the structured answers from the learners. There is no freedom for imaginative answers.

**(f) Suggestions**

- Instead of using it independently, this strategy should be supplemented by lecture and demonstration methods.
- The teacher should be skilled in framing proper questions and language of the questions should be clear and unambiguous.
- The teacher should distribute the questions to the whole class evenly.

For further details, please read the below referred material.

Rai, B.C. (1994)	<u>Technique and Methods of Teaching</u> , Lucknow, Prakashan Kendra, PP. 33-36.	1-8
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### (iii) Project Strategy

This strategy has evolved from the philosophy of pragmatists. It is experience-centred strategy related to life-situations. It includes:

#### (a) Focus

- i) To socialize a child.
- ii) To achieve cognitive, affective and psychomotor objectives.

#### (b) Principles: It is based on the following principles:

- **Principle of utility:** Choose those projects which are closer to the social life.
- **Principle of readiness:** Involve the learners in finding the solution of the problem with their active participation.
- **Principle of learning by doing:** Learner performs certain tasks and experiences new things. This adds to his knowledge and results in learning.
- **Principle of socialization:** It develops the feeling of cooperation and group-work.

- **Principle of inter-disciplinary approach:** to involve the knowledge of different subjects in solving the social problems.

(c) **Structure:** According to Kilpatrick, "A project is a whole-hearted purposeful activity proceeding in a social environment."

Kilpatrick has classified the project methods in four types:

- Constructive:** When learners have to construct some things related to social life e.g. charts, models, maps, parcels etc.
- Artistic:** These projects are generally allotted in the aesthetic fields of life. e.g. in music, drawing, painting, art and culture.
- Problem-solving:** These projects are given to solve the problems related to any life-situation or related to any subject. e.g. How to operate bank-accounts? or How to send a thing at distant place? These general problems, if solved, will make a child efficient for social-life.
- Group-work:** A team of students is assigned a work to be performed. e.g. to develop a garden in the school.

There are four basic elements of this strategy which make it purposeful (i) Spontaneity, (ii) Purpose, (iii) Significance, and (iv) Interest or Motivation.

(d) **Paradigm of project strategy:** The following steps are followed by the teacher:

- To identify the problems related to social environment of the learners.
- Providing the situations.

- Choosing the specific purposes of the project.
- Planning the project.
- Execution of the project.
- Evaluation of the project.
- Implementation in real life-situations.

**(e) Advantages:**

- It helps in developing social norms and social values among the learners.
- It provides invaluable opportunities for correlation of various elements of the subject-matter and for transfer of training or learning.
- It helps in growing knowledge very effectively as a result of their close cooperation on social participation in the spirit of democracy.

**(f) Disadvantages**

- The project cannot be planned for all subjects and whole subject-matter cannot be taught by this strategy.
- It is not economical from the point of view of time and cost.
- There is no strict time schedule of projects in Pakistan, it is very difficult for a teacher to plan or to execute the projects to the learners and supervise them.

### (g) Suggestions

- It should not be used as an independent teaching strategy but as a supplementary teaching technique.
- Teacher should try to utilize the inexpensive and waste products to prepare models etc.
- To avoid the problem of supervision, teacher may appoint a leader to each group of students.
- Teacher should fix a time-limit for each project.

For further details, please read the below referred material.

Rai, B.C. (1994)	<u>Technique and Methods of Teaching</u> , Lucknow, Prakashan Kendra, PP. 64-88.	1-9
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### (iv) Group Discussion Strategy

It is a child-centred strategy, in which students are divided into groups and they are encouraged to discuss on the subject-matter given. Group-discussion may be of two types:-

**By the Teacher:** Group-discussion is dominated by the teacher. Classroom climate is autocratic and most of the time, teacher is active and students accept his ideas and views. After giving lectures teacher encourages the students to participate in group-discussion. Teacher supervises them and provides guidance to make the discussion fruitful.

- (a) **Focus:** To achieve higher order of cognitive objectives and affective objectives.
- (b) **Principle:** This strategy is based upon the following principles:

- Principle of active participation
- Principle of learning by listening.

**(c) Structure:** Group discussions are organized in two forms: formal and informal. In formal discussions, the matter to be discussed is highly structured, proper schedule is prepared and certain rules are followed. Teacher acts as a leader of the group. In informal discussions, the subject-matter to be discussed is unstructured. No fixed schedule is prepared and no rules are to be followed. An outstanding student is selected as the leader by the group of students. He plans for the discussion and leads the discussion. Teacher is passive and supervise the pupils involved in the discussion. Planning for group-discussion follows the below given steps.

- Topic is decided for discussion.
- Objectives of discussion are decided
- Time-limit is fixed.
- Weightage points are decided.
- Penalty points are also decided.

**(d) Advantages**

- Affective and higher level cognitive objectives are achieved
- Group discussion helps in developing self-confidence among the learners
- It helps in organizing comparative discussion at favour and disfavour.
- It helps in providing freedom for expression to the learners.

- It helps in developing habit of cooperation.
- It helps in developing habit of listening one's own criticism
- Learners try to reach at one conclusion with the help of team-spirit and cooperation.

**(e) Disadvantages and Suggestions**

- i) Group-discussion cannot be used as a teaching strategy but it can be used as a supplementary technique after lecture and demonstration.
- ii) It is quite time-consuming. So, teacher must fix the time schedule for discussion to make it a purposeful activity.
- iii) It can only be applied for average and above average students. So, it is the teacher's duty to form groups on the basis of some criteria of intelligence and abilities. He should provide them topics accordingly, so that students of low intelligence and abilities can also be benefited.
- iv) If not properly organized, it may create bitterness and results are unfruitful. It is just a wastage of time. So, a teacher must plan for discussions before hand to avoid irregularities and make it more effective.



For further details, please read the below referred material.

Rogers, Jenny, (1989)	<u>Adults Learning</u> , 3rd ed. Milton Keynes, Open University Press, PP.91-103.	1-10
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#### (v) Role Playing or Simulated Social Skill Training

'Simulation' refers to imitation of a particular appearance, form or skill. In education this strategy is popularly used in teacher-training programmes. It is better strategy than lesson-demonstration.

##### (a) Focus:

- i) To develop social skills for Playing the role of a teacher in the classroom.
- ii) To achieve psychomotor objectives.

**(b) Structure:** It is a strategy played in artificial classroom situation. It is just like a drama. Student-teacher has to play the role of a teacher as well as learner. In this strategy, teacher-educator follows the below given six steps.

Step (1): Out-line of teaching is prepared.

Step (2): Teacher educator provides the direction to the student-teacher to play the roles of teacher, student and observer.

Step (3): Student-teacher selects the topic of his interest to be taught. He also decides the social skills to be developed.

Step (4): Teacher educator determines the techniques to be used for observing the teaching-behaviour.

Step (5): Student-teacher practices teaching. His teaching-behaviour is observed and recorded by the observers.

Step (6): Teaching is followed by discussions and suggestions to modify his behaviour optimally.

**(c) Advantages**

- It helps in developing the social-skill among the student-teachers through experiences.
- It helps the student-teachers to analyse, synthesize and evaluate their activities.
- It equips the student-teachers to face the real classroom situation boldly and confidently.
- It provides immediate reinforcement for modifying student-teachers' behaviour.

**(d) Disadvantages**

- It provides artificial learning situations to the student-teachers. They often fail when exposed to real classroom situations.
- No emphasis on content-teaching skill, only the social skills are taken into consideration.
- It is quite time consuming because every student has to play the role of a teacher, learner and observe and every social skill is to be practiced till perfection.

**(e) Suggestions**

- i) A student-teacher should be well acquainted with the strategy.
- ii) Teacher-educator should always be present during student-teachers' role playing.
- iii) Before the student-teachers are asked to practice the social skills, a model-teacher should demonstrate the style of teaching.
- iv) After practising teaching, student-teachers should be put under criticism and suggestions. If required, the model-teacher must demonstrate again.
- v) To make it more meaningful, simulated social skill training must be supplemented with micro-teaching. It will help the student-teachers to develop social skills as well as teaching skills.

For further details, please read the below mentioned material.

David Minton, (1997)	<u>Teaching Skills in Further and Adult Education</u> , Revised ed. London, City and Guilds, PP.135-140	1-11
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**1.6 ACTIVITIES**

- 1. Please prepare a chart of comparison between methods and teaching strategy.
- 2. Draw a diagram indicating the styles of teaching.
- 3. Discuss with any educationist, the permissive style of teaching and prepare a report of the discussion of the outcome of your discussion.

4. Write below any three traditional methods of teaching.

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### 1.7 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1 Define the concept of teaching strategies.
- Q.No.2 What is a teaching strategy? Make clear the difference between a teaching strategies and teaching tactic.
- Q.No.3 Define the term "teaching strategies". Discuss any four important teaching strategies with examples.
- Q.No.4 Why a teacher uses the teaching strategies in teaching? How those teaching strategies help the teacher in organising effective teaching.
- Q.No.5 Critically examine the lecture strategy. Also give its importance in teaching learning process.
- Q.No.6 Explain the significance of demonstration strategy.

- Q.No.7 Discuss the traditional methods of teaching. Also give examples in support of your answer.
- Q.No.8 Discuss the permissive strategies in teaching. Which strategy do you consider more effective in the teaching-learning process.
- Q.No.9 Write brief notes on the following:
- a) Tutorials
  - b) Question-Answer strategy
  - c) Role playing
  - d) Heuristic strategy
  - e) Demonstration
- Q.No.10 "It is a new autocratic and individualised strategy. It is based on operant conditioning." Discuss.
- Q.No.11 Critically examine the principles of project strategy. Support your answer with examples.
- Q.No.12 Discuss the types of group discussion programmes.

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UNIT - 2

CONCEPT OF TEACHING

BY  
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## **Unit -2**

## **CONCEPT OF TEACHING**

**2.1 Introduction**

**2.2 Objectives**

**2.3 Teaching variables**

**2.4 Structure of Teaching**

**2.5 Operations in teaching**

**2.6 Pedagogical models of teaching**

**2.7 Activities**

**2.8 Exercise**

**2.9 Bibliography**



## 2.1 INTRODUCTION

Anatomy is that branch of science which deals with the structure of animals and plants. In education, it refers to analysis or minute examination of teaching.

After the analysis of teaching, various activities are found out. These activities are put under the following categories:-

- i) **Use of signs and symbols:** The teacher uses the signs and symbols at diagnostic stage. These activities help the learner to develop understanding and interest of the subject-matter. The teacher also employs the signs and symbols at prescriptive and evaluative stages of teaching. These activities enable the students in communicating and explaining the teaching concepts and thus, result in effective teaching.
- ii) **Teaching as linguistic process:** Verbal aspect of teaching activities is very important to communicate the subject-matter to the learners. A teacher can perform these activities by the use of simple, comprehensive, and effective language. The teacher uses language:
  - in introducing the subject-matter,
  - in motivating the learners,
  - in explaining the concepts and ideas,
  - in describing the facts and events,
  - in guiding and counselling the students for their better development.
  - in the classroom verbal interaction.
- iii) **The logic of teaching:** Teaching-learning process cannot be successful if it does not follow any principle, maxim or logic and helps the teacher to present the subject-matter systematically. A good teacher implies logic in planning, organizing, leading and controlling the teaching. Logical thinking of the teacher helps in the development of the child psychologically. Logical activities are described as follows:

- a. Explaining.
- b. Concluding.
- c. Inferring.
- d. Giving reasons.
- e. Collecting evidences.
- f. Demonstrating.
- g. Defining.
- h. Comparing.

## 2.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the teaching variables;
2. explain the structure (feature) of teaching;
3. specify the operations in teaching; and
4. differentiate the pedagogical models of teaching.

## 2.3 TEACHING VARIABLES

After analysis, it was found that act of teaching structurally consists of three types of variables:

- i. Input variables (Dependent variables).
- ii. Process variables (Independent variables).
- iii. Output (Intervening variables).

- i) **Input variables:** In teaching-learning process, the learner is the dependent variables. All the teaching activities are performed to bring change in his behaviour. As teaching is an interactive process, learner's entering behaviour, such as his abilities, capabilities, and interests are taken into consideration

before planning and organizing teaching. Main focus of teaching is to develop beliefs, attitudes and values in the learner. These attainments are considered as the terminal behaviour of the learner.

- ii) **Process variables:** These are the independent variables in teaching-learning process. Teacher is the more mature person than the learners. He plans and organizes teaching keeping in view the logic of teaching, entering behaviour, need and requirement of the learners. Teacher's personality, his competencies, his teaching behaviour and other managerial tasks, with regard to media and supplementary activities directly influence the classroom climate and therefore, these teacher-variables affect teaching-learning process positively.
- iii) **Output variables:** Content is very important for teaching-learning process. The type and level of content, desired teaching strategies and tactics, techniques of motivation, and the desired educational objectives constitute content related variables.

### **Analysis of teaching, keeping in view its functional aspects**

According to the modern view, teaching is a system of actions and activities. As a system, teaching consists of three variables.

## Teaching as a system

Input Variables	Process Variables	Output Variables
1. Entry behaviour of the learners. 2. learner's attainments. 3. Teacher's equipment, his state of knowledge of subject-matter. 4. Teacher's personality. 5. Teacher's communication skills.	1. Content, and its logical arrangement. 2. Various teaching strategies and tactics related to content. 3. Audio-visual aids.	1. Description of terminal behaviour of the learners. 2. Desired educational outcomes. 3. Evaluation.

The teaching variables in turn, perform three major functions:

- i) **Diagnostic function:** Teacher, the most important variable of teaching perform the following functions:
  - (a) Determine Entry behaviour of the learners by administering a diagnostic test.
  - (b) Identify the need and requirement of the learners.
  - (c) Select and organize the content as per need and Entry behaviour of the learners.
  - (d) Consider individual differences.
  - (e) Identify learning deficiencies.

- (f) Local instructional facilities.

**ii. Prescriptive function:** On the basis of diagnosis, the teacher prescribe the following activities:

- (a) Formulate learning objectives.
- (b) Select appropriate teaching strategy and tactics for presenting the subject-matter.
- (c) Use techniques of reinforcement and feedback.
- (d) Focus all his teaching activities to bring desirable change in learner's behaviour.
- (e) Dispose his personality to maintain discipline in the class.
- (f) Use specific teaching-skills in presenting the content and in using audio-visual aids.

**iii. Evaluation:** It is the most important function of teaching variable to see the effectiveness of prescriptive teaching. The main criterion of evaluation is the realization of learning objectives. A teacher has to perform the following evaluation functions:

- (a) Construction of objective based achievement test.
- (b) To measure and evaluate the change in learner's behaviour.
- (c) Provide reinforcement and feedback on the basis of his achievement.

Thus, the theory of teaching is to explain its variables and establish relationship between them.

For further details, please read the below mentioned material.

Stones, E. & Morrism S (1972)	<u>Teaching Practice: Problems and Perspective</u> , London, Methuen & Co Ltd, PP.60-69.	2-1
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## 2.4 STRUCTURE (FEATURES OF TEACHING)

The important features which determine the nature of teaching are as follows:

- i. **Teaching is giving information:** There are many things that the students cannot find out for themselves. There many things that they can never know unless they are told. There are many things the use of which they do not know. These things they have to be told. So one essential part of teaching is communicating knowledge.

Knowledge must be given in systematised manner. Teaching should be made interesting.

It must, however, be stressed that knowledge aspect should not be unduly emphasized.

- ii. **Teaching is causing to learn:** It is wrong to think, that knowledge can be passed on from one person to another like money. Knowledge will be received only when the students are prepared to receipt it. Real teaching consists in persuading the child, by one method or the other to learn for himself. The teacher is an instrument in helping a child to learn and to do things for himself.
- iii. **Teaching is a matter of helping the child to respond to his environment in an effective manner:** It is not what is presented to the child which educates him, but rather the reaction that he makes to what is presented. Certain children may fail entirely to respond to a lesson, or may respond in a wrong manner. If a child's response to his geography is to

memorize the words, without any understanding of the facts they represent, the lesson is not educative for him (he has not been taught), although it may be educative for the child next to him who reacts properly.

- iv. **Teaching in helping a child to adjust himself to his environment:** A child is reacting in some way or the other to his physical and social environment, from his very birth. His reactions are both fruitful and harmful. Teaching should help the child to make successful adjustment. This may be done in two ways. Sometimes we modify the environment and at other times strengthen the child. Teaching should make the child socially efficient, that is, a worthy member of society, making his contribution to the common good. Yoakam and Simpson write, "Teaching is a means whereby society trains the young in a selected environment as quickly as possible to adjust themselves to the world in which they live. In primitive societies this adjustment means conformity with things as they are. In more advanced civilisations, such as ours, effort is made not only to adjust to things as they are, but also to make an advanced in the improvement of conditions of life by training the young in modes of thinking and acting which will help to improve the conditions of living that surround them."
- v. **Teaching is stimulation and encouragement:** Teaching should fire the enthusiasm of the child. It is to encourage the child in the development of his natural desires to work and to be active.
- vi. **Teaching is guidance:** Teaching is to guide the pupils to learn the right things in the right manner and at the right time. Teaching is to guide the students to do things in such a way so that time, material and energy are not wasted.
- vii. **Teaching is training the emotions of the child:** Ryburn observes, "It is also the encouraging and training of the emotional life. This is an aspect of teaching which is very commonly neglected at least in practice. But our teaching will

be only one-sided and distorted unless they take into account the necessity for helping the child to develop a stable emotional life." Teaching is to develop the emotional life of the child by providing an atmosphere of love, affection and freedom. Teaching is to provide such activities as will sublimate their instinctive urges to action.

- viii. Teaching is both conscious and unconscious process:** Teaching is both a conscious and an unconscious process and the most effective part of it is generally the part of which we are unconscious. The personal relationship between the teacher and the taught have a great bearing on the growth of the child.
- ix. Teaching is a means of preparation:** Though preparation for future is not the only aspect of teaching, yet it is an important aspect. Teaching is to help the immature child to develop physically, intellectually, emotionally and spiritually to participate effectively in the life of the community.
- x. Teaching is formal as well as informal.** Formal teaching is deliberately planned, systematically organized and is always purposive. Teachers are just formal agents of teaching.

School is not the only agency of teaching. Informal teaching is carried on by the parents, brothers and sisters at home, playmates, students community outside the classroom etc. The few hours of the school are insufficient for the full development of the child.

Formal and informal teaching, must cooperate, if good results are to be achieved. School should 'supplement' not 'supplant', the training imparted by the home and vice-versa.

- xi. Teaching is a skilled occupation:** Every successful teacher is expected to know the general methods of Teaching and instruction in creating suitable learning situations. He is also expected to be familiar with the general objectives of education.



- xii. **Teaching is an art:** Art implies the intelligent action of a human being through which it is possible to modify an ordinary course of events. Teaching is an art which can be improved through research.
- xiii. **Teaching is a form of social service:** The teaching profession is regarded to be a sort of social service and the teachers as servants of society in whose hands has been entrusted the task of shaping and developing the behaviour and conduct of the young children for maintaining and improving the social patterns.

Following are the marks of good teaching:

- i. **Good teaching is causing to learn:** Good Teaching enables the child to learn for himself. It is not stuffing the mind of the child with information. Good teaching is what we can make the child do for himself.
- ii. **Good teaching provides opportunity for activity:** The child is inherently active. Passiveness on the part of the child implies that he is not in good physical and mental health. A good teacher keeps the students active. He is aware of the fact that to keep the student's discipline, he must have to fill the time with work and involve them in various activities.
- iii. **Good teaching involves skill in guiding learning:** A good teacher motivates his students. He stimulates them through his activities in the classroom to make his teaching effective. He involves the students into the studies. He creates such situations as lead to desired types of learners.
- iv. **Good teaching is cooperative:** Good teaching is a an active and living process. A good teacher seeks the cooperation of the learners.

- v. **Good teaching is kindly and sympathetic:** A good teacher always creates a cordial atmosphere in the classroom. He always ensures his pupil's emotional stability and security. He is kind, affectionate and sympathetic to his pupils. He avoids scolding and sarcasm.
  
- vi. **Good teaching involves careful planning:** Good teaching keeps in view that everything cannot be taught to children at every time. A good teacher carefully studies the mental make-up of the pupils he teaches, studies the individual differences of pupils and then prepares his subject-matter. An unplanned lesson often results in a failure and involves waste of time, energy and money also.
  
- vii. **Good teaching is democratic:** A good teacher always respects the individuality of his pupils. He does not consider them to be inferior. He keeps the contents, methods and objectives in view while teaching.
  
- viii. **Good teaching provides desirable and selective information:** The good teaching does not try to teach all the available information that he gathers from books and experience. On the other hand he makes as judicious selection and teaches all that is useful to live a good life as responsible member of the society.
  
- ix. **Good teaching helps the child to adjust himself to his environment:** Man has been struggling against natural forces since ages. He is expected either to adjust himself to these natural forces or to adjust the forces to himself. A good teacher helps the child in both directions.
  
- x. **Good teaching is progressive:** A good teacher aims at improving his modes and techniques steadily. He also helps the child to make suitable progress in life.
  
- xi. **Good teaching leads to emotional stability:** There are very powerful inherited urges which always cry for expansion. A good teacher knows that unguided expression leads to

wilderness, and, therefore, helps in providing his pupils suitable opportunities which assist in training and sublimating the urges and emotions.

- xii. **Good teaching is both diagnostic and remedial:** A good teacher makes use of the various measurement instruments which have been provided by psychology and discovers the intelligence, aptitudes and interests of children and accordingly plans his work.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.31-37	2-2
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## 2.5 OPERATIONS IN TEACHING

Teaching is defined as an interactive and dynamic process. Teaching is a system which involves certain operations. James B. Thyne (1969, P.71) for convenience, put these operations under three stages or phases:-

### i. Pre-active phase

According to James B. Thyne (1969, P.16) "Pre-active" means those aspects of teaching behaviour that the teacher engages in, prior to meeting pupils face-to-face in the classroom. This phase refers to planning of teaching. It involves the following operations of teaching.

- a) **Formulation of instructional objectives:** These objectives are written in behavioural terms i.e. keeping in view entry and terminal behaviour of the learners. These objectives are derived from their overall aim of education in national and social perspective and general objectives of subject teaching.

- b) **To make decisions about the subject-matter:** While deciding the subject-matter, demand of curriculum, need and entry behaviour of the learners, level of motivation and teacher's preferences are taken into consideration.
- c) **Arrangement of ideas and styles of teaching:** The selected subject-matter is split up into its elements which are arranged logically that they should work psychologically in learning them effectively. The appropriate style of instruction for each element is selected.
- d) **To make decisions about the strategies and tactics of teaching:** The teacher has to select appropriate teaching strategy and tactics keeping in view the nature and structure of the content and objectives of teaching.
- e) **Development of teaching strategies:** An overall structure of instructional design (lesson plan) is developed keeping in view the subject-matter, teaching strategies and appropriate audio-visual aids.

## ii. **Interactive phase**

\*According to James B. Thyne (1969, P.21) in the 'Interactive' phase, the teacher provides pupils with verbal stimulations of various kinds, makes explanations, asks questions, listens to student's responses and provides guidance.

In this phase, classroom interaction between teacher and learners takes place. This phase refer to organizing and leading of teaching. Most of the activities are related to presentation of subject-matter. This phase involves the following operations:

- a) **Sizing up the class:** When teacher enters the classroom, he perceives the classroom climate i.e. size of the class, modes of the learners. He tries of identify the attentive or disinterested learners, and those who are cooperative or troublesome. By the time, the learners also perceive the

teacher's personality.

- b) **Diagnosis of the learners:** By putting the direct questions to the learners related to content, the teacher tries to diagnose their previous knowledge, attitudes, aptitudes and interests.
- c) **Action and reaction:** It involves the following operations:
- **Selection of stimuli:** As the teacher-behaviour in the classroom, has two aspects: Verbal and non-verbal, the stimuli may also be of verbal and non-verbal type. Verbal stimuli may be in the form of words, questions, description etc. Non-verbal type stimuli include presentation of charts, pictures, models or gesture of the teacher etc. A teacher has to select an appropriate stimulus for the type of content and the level of learners to generate the desirable response.
  - **Presentation of stimuli:** A teacher must be aware of presenting stimuli, that is, in what form, in what context and in what sequence, they should be presented.
  - **Reinforcers:** These are the operations which increase the probability of a particular behaviour to appear again in the face of the similar stimuli.

These are two types: Positive reinforcers and negative reinforcers. Positive reinforcer helps in strengthening or modifying the desirable response while negative reinforcers weaken an undesirable responses.

**Development of teaching strategies:** The teacher deploys a sequence of inter-connected activities to present the content to the learners. These activities are very much specific to a particular strategy. These may be in the form of lectures, discussions, questions or assignments, alongwith the application of desirable audio-visual aids.

### iii. Post-active phase

It is a phase of evaluation and follow up of the previous operations. Evaluation is based on the criterion of instructional objectives. It involves the following operations:

- (a) **Determining the exact dimensions of the behaviour changes:** The exact dimensions of behaviour changes are determined. On the basis of which terminal behaviour of the learners will be compared and assessed.
- (b) **Using the appropriate testing devices and techniques:** For testing the terminal behaviour of the learners, teacher uses the most suitable tests. These may include standardized criterion referenced tests, teacher made informal tests, attitude tests, aptitude tests, scales etc.
- (c) **Changing the strategies of teaching:** On the basis of the outcome of evaluation, the teacher evaluates the effectiveness of his teaching. He tries to find out the causes of failures in terms of teaching strategies, instructional material and Entry behaviour of the learners. And finally the suggestions for improvement on all aspects of teaching are offered for further teaching.

The knowledge of teaching operations is useful in many ways:

- i) It is useful for teacher-education to develop the desirable teaching skills among the student-teachers
- ii) It may help the in-service teachers to improve their classroom teaching competence.
- iii) Teaching-learning process can be made more effective if the knowledge of teaching-operations is clear.
- iv) The teaching-operations provide a scientific basis for effective teaching.

- v) The teaching-operations provide basis for realizing the instructional objectives.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	Technology of Teaching, Meerut, R. Lall Book Depot, PP.42-50	2-3
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## 2.6 PEDAGOGICAL MODELS OF TEACHING

A general meaning of term 'Model' is a representation, generally in miniature, or to show the structure as a copy of something or a typical form or style.

Several definitions have been given to the term teaching model by different educationists:

- i. Nelson L. Bossing (1970, P.72): "Teaching model is a pattern or plan, which can be used to shape a curriculum or course, to select instructional materials and to guide a teacher's action.
- ii. Nelson L. Bossing (1970, PP.73-74): "A model of teaching consists of guide-lines for designing educational activities and environments. It specifies ways of teaching and learning that are intended to achieve certain kinds of goals."
- iii. Morse, S (1970, PP 64-65): "Models are prescriptive teaching strategies designed to accomplish particular instructional goals."
- iv. Robert S. Woodworth (1969, P.102): "To confirm in behaviours, actions and to direct one's action according to some particular design or idea."
- v. Filburt Hight (1983, PP.38-39): "A model of teaching is a set

of inter-related components arranged in a sequence which provide guidance to realize specific goals."

On the basis of above definitions, it is analysed that models of teaching are the guidelines for planning educational activities and environments to achieve specific educational objectives.

### **Uses of Teaching-Models:**

- (i) Teaching-models specify the learning situations for observing the pupil's response.
- (ii) They help in realization of learning objectives.
- (iii) They help the teacher in planning and organizing effective teaching by selecting appropriate content teaching strategies and audio-visual aids.
- (iv) They help in planning curriculum.

### **Fundamental Elements of Teaching-Model:**

Generally, there are five elements of teaching-models which are given below:-

- a. **Focus:** This element of the model defines the specific objectives of teaching-learning process.
- b. **Syntax:** This element explains the structure of activities actually involved in teaching-learning process. These activities are arranged in a sequence which are to be followed strictly.
- c. **Social system:** It defines the three main aspects of teaching learning process:-
  - the classroom climate (whether authoritarian, democratic or laissez-fairic),
  - role of teacher and the learners (whether active or



- passive),
  - form of motivation (whether extrinsic intrinsic or self-motivation).
- d. Support System:** This element describes the following factors:-
- Which helps in making teaching-learning effective (i.e. use of audio-visual aids, library, laboratory, workshops, excursions, field trips etc).
  - Which helps in evaluating teaching on the basis of acquired learning (i.e. testing devices).
- e. Application:** It is most important element of the model. It tells us the use and application of the model for specific objectives, and specific subject-matter in specific situations.

### **Types of Teaching Models:**

- i)** According to Hough Duncan (1981, P.143), there are two types of teaching models:
- (a) Historical Models of teaching: These are of three types:
- The Socratic Teaching Model
  - The Classical Humanistic Model
  - The Personal Development Model
- (b) Psychological Models of Teaching: These are of four types:
- Glaser's Basic Teaching Model
  - Computer Based Teaching Model
  - A Teaching Model of School Learning
  - Interaction Teaching Model
- ii)** According to Smith, O.B. (1993, P.127), there are three types of

philosophical teaching models:

- (a) The Impression Model (given by John Locke)
- (b) The Insight Model (Plato)
- (c) The Rule Model (Kant)

iii) According to E.E. Habeden (1980, P.93), there are four types of teaching educational models which enable the student-teachers to make their teaching effective.

- (a) Taba's Model of Teaching
- (b) Turner's Model of Teaching
- (c) A Model of Variation in Teacher Education
- (d) Fox Lippitt Model

### GLASER'S BASIC TEACHING MODEL

It is a psychological teaching model and was developed by Robert Glaser (1962). This model explains the relationship between teaching and learning. The term 'Basic' is used because this model is based on the basic principles of Psychology.

Nelson L. Bossing (1970, P.63) called this model as "Classroom Meeting Model".

Glaser's model consists of four elements.

- i. Instructional objectives
- ii. Entry Behaviour
- iii. Instructional procedure, and
- iv. Performance Assessment.

i. **Instructional Objectives:** These are the defined objectives which the students should achieve at the completion of particular instruction. These objectives are based on Bloom's taxonomy of behavioural objectives. The objectives may be stated in general, specific or behavioural terms. Generally, Mager's approach is adopted for stating 'cognitive' and 'affective' objectives in behavioural term.

- ii. **Entry Behaviour:** Once the objectives have been decided, the teacher tries to assess the entry behaviour of the learners, i.e. their previous knowledge, level of intelligence, motivational state and interests are found out.
- iii. **Instructional Procedure:** On the basis of objectives and entry behaviour of the learners, the teacher selects the content, teaching strategies and proper audio-visual aids. At this step, interaction between pupils and teacher takes place. Teacher presents the content-matter before the learners.
- iv. **Performance Assessment:** At this step, the teacher tries to evaluate the outcome of teaching. It can be done with the help of tools and techniques of evaluation. This model is flexible in the sense that if a student shows low achievement in attaining the desirable objectives, feed back is provided till he achieves the desired instructional objectives.

## **OPERANT CONDITIONING MODEL OF TEACHING (PROF.B.F.SKINNER)**

### **Assumptions**

- i. Teaching is an important factor in teaching-learning process to bring desirable changes in the behaviour of learners.
- ii. Human behaviour can be understood in terms of the principles of operant conditioning.

This teaching model is developed on the basis of selection and connecting. This model possesses the following elements:-

**Focus:** To bring desirable change in behaviour.

**Syntax:** All teaching activities are divided into five steps in this model:

- (i) Specifying the final performance: This step includes following activities:-
  - (a) Identification and definition of target behaviour.
  - (b) Specification of desired behaviour,
  - (c) To develop plans for measuring and recording the behaviour outcomes.
  
- (ii) Assessing the behaviour: Observe and record frequency of behaviour and if necessary, nature and context of behaviour.
  
- (iii) Formulating the contingency: This step includes the following activities:-
  - (a) Make decisions regarding the environment.
  - (b) Select the reinforcers and reinforcement schedule.
  - (c) Final plan of behaviour-modification programme.
  
- (iv) Instituting the Programme: This step involves the following activities:-
  - (a) Organize the environment in which learning will take place.
  - (b) Inform the learners.
  - (c) Provide reinforcement to the learner in a definite schedule.
  
- (v) Evaluate the programme: This step involves following activities:-

- (a) Measure desired response.
- (b) If the behaviour-modification is not upto the optimum level, reinstitute the programme for re-structuring the behaviour.

**Social system:** Teacher controls the environments. Learners do not have freedom for response. To check the undesirable behaviour, teacher provides negative reinforcement while provides rewards, appreciation for desirable behaviour to occur again and again.

**Support System:** Programmed machines, programmed instruction and the reinforcing environment help to reduce the errors while learning. Evaluation is done on the basis of right and wrong responses. Immediate reinforcement is given on right response and feedback is provided to wrong responses.

**Application:** This model of teaching is very well used in programmed learning. This model will help in the development of learner's abilities with the help of attaining knowledge, skills and application of the subject-matter. It has given the base for independent learning.

This operant conditioning learning model is content-centred. It has shown the path for researches in the field of education.

## **DEVELOPMENTAL TEACHING MODEL (Proponent: Jean Piaget)**

### **Assumption**

This model is based on the following assumptions:

- i. Type of interaction with the physical and social environment influence cognitive growth.
- ii. The intellectual growth depends upon physiological maturation.

**Syntax:** This model has two phases:

- (i) Phase-I: presentation of confronting situations (verbal or non-verbal) as related to the learners' developmental stage and their needs.
- (ii) Phase-II: The student is guided by his inquiry of the problem. The problem is related to the student's developmental stage.

**Social system:** Relationship between learners and teacher varies from low to high learning structure. It also, depends upon the stages of the development of the child.

Generally, in this model, the teacher initiates all the activities of the teaching-learning process. He controls and guides the student's inquiries.

**Support System:** The appropriate, free social environment will promote the learners to work out the cognitive problems which are realized through face-to-face interview.

**Application:** This model of teaching can be applied for cognitive and social development of the learners related to the subject-areas taught in the classroom.

A teacher can realize this model of teaching in realizing the complexity of the concepts and he can organize teaching relating to conceptual development of the learners for effective learning.

### **CONCEPT ATTAINMENT TEACHING MODEL (Proponent: J.Bruner)**

**Focus:** To develop inductive reasoning Bruner, Goodnow and Austin describe a teaching process by which, learners are able to discriminate between the things, persons and events belonging to the same group and place them into categories.

**Syntax:** This model has been divided into four phases.

- (1) Presentation of data before the student to speculate about the

concept.

- (2) Analysis of strategies by the students for attaining the concepts.
- (3) Analysis of the given concepts in their belonging groups from unorganized data.
- (4) Concept formation.

**Social System:** The teacher is active. He has to control all actions but he provides freedom to the learners and motivates them to participate in the teaching-learning process. The teacher must be sure whether the students are clear about their task of phase one.

**Support System:** Different teaching aids and learning material, provide the clear concepts of things, persons or events.

**Application:** This model of teaching is, generally, applied for language teaching in the class. It can be used for teaching basic concepts of mathematics. It can also function as a model for television-teaching.

### **GROUP INVESTIGATION TEACHING MODEL (Proponent: John Dewey).**

**Focus:** To develop social efficiency among the learners.

**Syntax:** This model involves the following steps:

- (i) Placement of the problem before the learners. Problem should be related to day-to-day life experience.
- (ii) Involvement of the learners in solving the problem through experiences.

(iii) Evaluation.

**Social system:** It requires democratic classroom climate. The teacher and learners equally participate in teaching-learning process. Teacher is a friend, philosopher and guide. Form of motivation is extrinsic as well as intrinsic.

**Support System:** The present society, social agencies, social environment are of great help in the socialization of students. Evaluation can be done by practical examination.

**Application:** This model is applied in 'Project Method' teaching. Subjects of social sciences can be taught by using this model of teaching resulting into effective learning. This model will help the teacher to make better democratic citizens of our nation.

### FLANDERS VERBAL INTERACTION MODEL

Ned. A Flander was the proponent of this model. He developed this model to derive classroom interaction patterns which help in improving teaching behaviour and results in optimum learning-out-come on the part of learners. This model is based on certain assumptions:

- (i) Teaching is an interactive chain of instructional events mostly verbal.
- (ii) Instructional events are bound to take place in authoritarian climate.
- (iii) Teacher is the central variable to design and conduct teaching through well-planned direct and indirect talks.

**Focus:** To improve teacher-behaviour so that, learners' behaviour can be modified effectively.

**Syntax:** This model is also known as cycle of classroom learning events. The cycle runs into three stages:-



### **Stage-I:**

- Step 1-An intellectual difference is created or the problem is presented.
- Step 2-Major dimensions of the problem are identified.

### **Stage-II:**

- Step 3-The relationship within the problem are isolated.
- Step 4-The work occurs such as gathering of information, application of a formula or trying out of a solution of the problem.

### **Stage-III:**

- Step 5-The progress is evaluated or tested.
- Step 6-The new knowledge is applied to additional problems and interpreted in meaningful way.

**Social System:** Classroom climate shows a mixture of authoritarian and democratic behaviour. First, students are exposed to authoritarian teacher. The teacher then, encourages the students to participate in the teaching-learning process. The teacher is as a manager then.

**Support System:** Teacher, who is the main source of information, and other available literacy sources.

**Application:** This model can be applied in improving the learning performance of students in any area of verbal knowledge. It can also be used in training children for independence in intellectual pursuit and problem-solving.

### **Importance of Teaching-Models**

- i) Use of teaching models helps the teacher to plan his teaching specifically for a particular subject and subject-matter.

- ii) Teaching can be made more effective and purposive in terms of learning outcomes.
- iii) Use of different teaching models in bringing all- round development of the child i.e. his social, emotional and behavioural aspects are developed.
- iv) These models provide a base for researchers in the field of education to know more about the nature of teaching.
- v) These models may help in developing teaching-theories.
- vi) These models equip the teacher and develop confidence in him when he goes for teaching.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.98-109.	2-4
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## 2.7 ACTIVITIES

1. Draw a figure indicating the variables of teaching.
2. Taking teaching as a system, please prepare a chart of input variables, process variables and output variables.
3. Discuss different phases of teaching with any educationist of your area and prepare a report of the outcomes of your discussion.
4. Please prepare a chart of different models of teaching and hang it in the classroom.

## 2.8 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1      Discuss the significance of teaching variables.
- Q.No.2      Explain various types of teaching variables.
- Q.No.3      Critically examine the importance features of teaching.
- Q.No.4      "Good teaching is sympathetic and provide opportunity for activity". Discuss.
- Q.No.5      "Teaching is an intimate contact between a more mature personality and a less mature one which is designed to further the education of later". Discuss.
- Q.No.6      Critically examine the phases of teaching. Give example in support of your answer
- Q.No.7      Write short notes on the following:
- (a)    Pre-active phase,
  - (b)    Interactive phase
  - (c)    Post-active phase
- Q.No.8      Explain various activities occurring in each phase of teaching while highlighting on the different phases of teaching.
- Q.No.9      Explain the different variables of teaching alongwith their functions.
- Q.No.10     Critically examine the pedagogical models of teaching. Which model do you consider most important for the situation of Pakistan?

- Q.No.11 Discuss the fundamental elements of teaching model.
- Q.No.12 Explain various types of teaching model.
- Q.No.13 Classify the teaching models while explaining the meaning of a teaching model.
- Q.No.14 Write short note on the following:
- (a) Glasers' basic teaching model
  - (b) Operant conditioning model of teaching
  - (c) Developmental teaching model
  - (d) Concept attainment teaching model
  - (e) Group investigation teaching model

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UNIT - 3

LEVELS OF TEACHING

BY  
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## **Unit -3**

### **LEARNING OBJECTIVES AND TEACHING STRATEGIES**

**Introduction**

**Objectives**

**Teaching of memory development**

**Teaching for understanding**

**Teaching for reflective thinking**

**Activities**

**Exercise**

**Bibliography**

### 3.1 INTRODUCTION

Teaching-learning process is different for primary, secondary and higher levels of education: it is based on educational objectives. Various steps of organization of teaching have been suggested by different educationists:

- i. I.K. Davies (1971, P.53) described 4 steps in managing teaching: (a) Planning, (b) Organizing, (c) Leading, and (d) Controlling.
- ii. Bigge & Hunt (1974, P.61) described three levels in organizing teaching-learning process: (a) Memory level, (b) Understanding level, and (c) Reflective level.
- iii. B.S. Bloom et al (1956, PP.64-74) gave three steps for organizing teaching: (a) Educational objectives, (b) Learning experiences, and (c) change in behaviour.
- iv. Gerhard, M. (1981, PP.17-18) described three stages in organizing teaching: (a) Pre-active stage, (b) Inter-active stage, and (c) Post active stage.

According to Bernard, H.W. (1980, PP.27-28) "Teaching is the task of a teacher which is performed for the development of a child."

Here, development refers to shaping the behaviour, habit, conduct, skills, knowledge and beliefs. Therefore, relating to development of a child and his level of intelligence, teaching is organized at different levels to develop different learning structures.

In this unit, effort has been made to highlight the levels of teaching.



### 3.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the memory level of teaching;
2. explain the understanding level of teaching; and
3. appreciate reflective level of teaching.

### 3.3 TEACHING FOR MEMORY DEVELOPMENT

It is mainly concerned with the rote-memorization of the factual material. It is based on the Stimulus-Response-Theory (S-R Theory) of learning where simple association between stimulus and response is involved.

Memory level teaching is based on certain assumptions which are as follows:

- i. More meaningful material can be memorized easily and retained for a longer period.
- ii. No positive relationship exists between level of intelligence and capacity to memorize.
- iii. Memorized facts add little to the student's fund of knowledge.

Bigge & Hunt, (1974) discussed three levels in organizing teaching. Teaching and learning are closely related or we can say that they make a single concept. Learning structures, learning objectives, level of teaching, they all fall on a continuum.

**Model of Memory level teaching:** P. Herbart was the proponent of this model. It consists of five main steps: (1) Focus, (2) Syntax, 3) Social system, (4) Support System, and (5) Evaluation system.

**Focus:** The main concern of this model of teaching is to enable the student:

- To train his mental faculties
- to acquire factual information

st

ment  
10. 8

- To retain learnt material for a longer time
- To recall or to recognize or to reproduce the learnt material.

## Syntax

This model consists of five steps designed by Herbart which are given below:

- (a) **Preparation:** This step includes planning of relevant ideas of subject-matter.
- (b) **Presentation:** This step includes the presentation of new knowledge linking with the previous knowledge of the students.

The presentation of subject-matter must possess the following characteristics.

- Definiteness in teacher's activities
  - Predictability
  - Observable specified knowledge structure (i.e. the teacher should impart the specific content to the learners)
- (c) **Comparison and abstraction:** In this step, the teacher tries to compare between the new facts, new knowledge and new ideas and abstracts the similarities among them.
  - (d) **Generalization:** In this step, the teacher generates the situation, so that the students are able to find out the similarities of new ideas and facts.
  - (e) **Application:** In this step, the teacher creates the situation, so that the students can use memorized facts.

Five steps of Herbart for memory level teaching

**Social System:** The climate of this model of teaching is authoritarian

type. Teacher is more active in preparing and presenting the raw content systematically and logically. Teacher is the authority. He may teach even wrong things.

Learner is the passive listener. He can only memorize and reproduce the learning material. He has to carry out the instructions of the teacher.

Motivation is provided extrinsically through rewards, verbal praise or punishment to reinforce the learner for better learning.

### **support System**

- (a) The help of standard books and literature is taken in presenting the latest and more meaningful material.
- (b) Learning material: Teacher uses audio-visual aids to involve more senses of the learners and make the subject-matter interesting.
- (c) The teacher takes the help of principles and maxims, of teaching, learning theories, learning objectives, cumulative records of students, in organizing teaching.

**Evaluation System:** Evaluation of teaching provides evidence in realization of the learning objectives. Oral tests are used for measuring retention of learning material. Objective tests are used to evaluate whether learners are able to recall and recognize the learning material.

### **Criticism**

This model of teaching is criticized for certain aspects such as:

- i. Teacher is the main authority, he may teach even wrong things.

- ii. No pre-requisite is emphasized for memory level teaching.
- iii. Teaching-learning process is objective-centred, but as such, there is no emphasis on objectives of learning.

Though, it is defective in many ways, it is most popularly used from primary level of education to higher education.

### Suggestions

Some suggestions are prescribed to make this model of teaching more effective and successful.

- i. There should be rhythmical presentation of subject-matter by the teacher.
- ii. Fatigue factor should be avoided.
- iii. The teacher must follow "whole to part" maxim of teaching.
- iv. Teaching contents should be meaningful, definite and sequenced in a logical order.
- v. There should be continuous assessment of the learners on the basis of which, reinforcement should be provided to encourage them.
- vi. Lots of practice and drill of the content is required.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.110-119	3-1
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### 3.4 TEACHING FOR UNDERSTANDING

Bigge and Hunt (1974, P.63) defined understanding level of teaching as the process that seeks to acquaint students with the relationships between the generalization and the particulars, between principles and solitary facts which shows the uses to which the principles may be applied. It is based on field theory of learning.

Understanding level of teaching is based on certain assumptions which are as follows:

- i. The same subject-matter can be taught for developing:-
  - (a) Full understanding (it refers to factual information),
  - (b) True understanding (it conveys the meaning of a concept), and
  - (c) Functional understanding of the subject-matter helps in the development of the affective domain of the learner.
- ii. Intelligence is pre-requisite for understanding the subject-matter.
- iii. Understanding of the subject-matter helps in the development of the affective domain of the learner.

#### **Model of Understanding level of teaching**

Morrison was the proponent of this model. According to dictionary, understanding means comprehension, or grasping the idea. But according to Morrison, A. et al (1967, P.37) understanding is more than comprehension.

According to him, understanding means seeing relationship (through insight) or discrimination, while comprehension refers to translation, interpretation or extrapolation. In understanding, mental processes are involved. Morrison did not emphasize the role of objectives, that is, what type of understanding is required to be developed. It consists of five main steps:

(1) Focus, (2) Syntax, (3) Social system, (4) Support System, and (5) Evaluation System.

**Focus:** Main focus of this model of teaching is:

- to develop mastery over the content.
- to provide substantial knowledge of the subject-matter.

**Syntax:** The paradigm of understanding level of teaching consists of five steps as pointed out by Morrison, A. et al (1967):

**(a) Exploration:** At this step, teaching is organized:

- to explore the previous knowledge or the content.
- to explore the level of intelligence, interest and attitudes of the learners towards the subject-matter by putting questions related to previous knowledge.
- to plan the content according to the needs of the learners and then arrange the elements of the content in a logical sequence, that should work psychologically.

**(b) Presentation:** At this step, teacher is ready to:

- present subject-matter in small units.
- try to maintain continuous rapport with the student.
- administer the test to ascertain whether students have learnt the subject-matter or not.
- if not, presentation of the same content is repeated twice or thrice.
- again administer the test to evaluate learning. If the learners qualify the test they proceed to next step.

- (c) **Assimilation:** At this step, students are actively engaged in learning. They assimilate the related subject-matter from different literacy sources such as: library, laboratory, field work, excursions etc. At this stage, highly individualized study is prescribed. Teacher is just a supervisor. At this step, teacher helps to develop mastery over the content. At the end of the step, mastery test is given. If the students pass, they proceed further while those students who fail the mastery test, require further assimilation.
- (d) **Organization:** This step is student-centred. Student produce systematic, write-up form of the assimilated work without the help of the teacher. This step is essential in subjects of extensive content which include a large number of elements in one unit.
- A written-test is administered to evaluate their learning. The test may be criterion-referenced or norm-referenced test. It may be of objective type or essay type.
- (e) **Recitation:** In some subjects, this step can be approached directly after assimilation. At this step, the student presents the assimilation and organized subject-matter orally before the teacher. According to Morrison, there should be a provision for daily recitation.

**Social System:** Teacher's behaviour is not autocratic but democratic. He is more like a guide, friend or philosopher. He encourages the students and supervises them at every step. Teacher behaviour is flexible, dynamic and humane. Sources of motivation also vary from step to step. It is extrinsic at exploration step through praise and encouragement. At presentation stage, motivation is provided through personal involvement of the teacher. And, at the rest of the stages, intrinsic motivation is practised through self-assessment, self-satisfaction, self-confidence and achievement.

**Support system:** At presentation stage, audio-visual aids are used to make the subject-matter interesting. Different literacy sources like



laboratory, library, workshops, excursions, field trips are of great help in assimilation of the related content.

**Evaluation System:** Different types of testing devices are used to evaluate the learning. These may be norm-referenced or criterion-referenced, essay type or objective type.

### **Criticism**

- i. Learning objectives are not emphasized in terms of what type of understanding is to develop among the student.
- ii. Attainment of mastery is a vague term. The criteria of mastery level should be clear.
- iii. What type of items should be included in the tests, is not emphasized in the model.

### **Suggestions**

- i. To make use of this model successfully, we should define the learning objectives in behavioural terms.
- ii. Principles and maxims of teaching should be followed to make teaching-learning process effective.
- iii. The types of items should be defined clearly for the tests at each step of this model.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.119-122	3-2
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### 3.5 TEACHING FOR REFLECTIVE LEVEL

Bigge & Hunt (1974, P.31) defined the reflective level teaching as careful, critical examination of an idea or supposed article of knowledge in the light of testable evidences which support it and further conclusions towards which it points. It is based on cognitive-field theory of learning.

Hunt was the proponent of this model of teaching. This model has been presented in the following steps:-

**Focus:** The main focus of this model of teaching is:

- to develop problem-solving attitude
- to develop independent thinking
- to develop critical outlook
- to develop attitudes and beliefs.

**Syntax:** At this level of teaching, the students are exposed by teachers, not to facts and generalization but to problems, which are unclear and puzzling to them. The problems may be of social or personal type. To solve the social problems, Kilpatrick's project method is used. This type of teaching does not come under reflective level teaching. Through project method, knowledge of the subject-matter as well as solution of the problem is provided. It helps in developing social efficiency among the learners. For solving the personal problems, generally, two approaches are used:

- (a) Dewey's Problematic situation, and
- (b) Kurt Lewin's Problematic situation.

These approaches involve the following four steps:

- i) Felt need: At this step, learner is exposed to the problematic situation by the teacher. Tension is aroused among them.
- ii) Tentative solution: The learner formulates hypotheses regarding the problem to satisfy the need.

- ii) Testing of hypotheses: Each hypothesis is tested or verified one by one.
- iv) Conclusion: On the basis of testing and verification conclusions are drawn by the original thinking of the learners.

Following these steps of reflective teaching model, the personal problems of the learners are solved by the above given two approaches.

**Approach-1: Dewey's Problematic Situation:** According to Dewey, a person may perceive the personal problem in two situations:

- i. There is an obstacle in achieving the goal but he has no alternative path to overcome the obstacle. It is termed as 'non-path situation'. The learner, will solve the problem by using his own insight.
- ii. When a person has two equally attractive goals, he has a problem to choose either of them. This is termed as "Forked Path Situation".

It, again, creates tension in the learner. He makes an effort to select the desirable path by using his original thinking and ability.

When a person has two equally good paths to reach up to the desirable goal, he has a problem to select either of them. Again, he makes use of his independent, original thinking in selecting the path to reach upto the goal.

**Approach-2: Kurt Lewin's Problematic Situation:** Kurt Lewin assumes that every individual lives in three environments and he tries to adjust in them. The three environments are:

- i) **Physical environment:** (i.e. the climate, the surroundings, physical facilities etc.)

- ii) **Social environment** (i.e. social norms values imposed by society)
- iii) **Psychological environment:** It is the most important factor which affects the life of the learners. It varies from person to person. A person's behaviour is governed by the goal in his life. He is, all the time, struggling to achieve it. There are several physical and social factors which create obstructions in achieving the goal. This barrier or Non-path situation is best for reflective level teaching. The learner has the knowledge of the subject-matter at the understanding level. He processes divergent thinking to reflect the ideas regarding the problems. By doing so, he is able to find the solution of the problem.
- iv) **Social system:** A teacher should be creative, and tactful. He must possess insight and divergent thinking. A teacher should be a friend, philosopher and guide. He must encourage the learners for self-learning and supervise their learning. The level of aspiration and self-motivation are the main sources of motivating the learners.

The climate of the class-room teaching is democratic. Students equally participate with the teacher. They may, even be critical.

### **Support system**

The already existing literature and other social and educational sources help in the advancement of the knowledge of the learners.

### **Evaluation system**

It is very difficult to measure the learning of the student at this level. Essay type tests can be used to assess their achievement in the area of study. Many other testing devices can also be used to evaluate the involvement of the learner, his attitude and interests in the selected area of study. Viva-voce examination can also be taken to evaluate his reflective thinking and understanding in the subject-matter.

## **Criticism**

- i) A rigid schedule of time-table cannot be followed at reflective level teaching.
- ii) Teaching is mainly problem-centred.
- iii) Though the climate of classroom should be democratic but it is not so. The teacher is the main authority. He does not invite the views of the learners.
- iv) Though the teaching should be creative and original but it is not above the memory level teaching.

## **Suggestions**

Hund has given the following suggestions regarding reflective level teaching.

- i) Reflective teaching should be organized only after memory and understanding level teaching.
- ii) It should follow the principles of teaching rigidly.
- iii) More active participation, more imaginative and creative thinking, more rigour and consistency in productive work is required from students.
- iv) Teacher must be devoted to his duty. He must possess imaginative and creative thinking, so that he is able to involve the students in creative and productive work.
- v) A teacher must understand the learners, welcome their views and give suggestions to them rather to command.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.122-126	3-3
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### 3.6 ACTIVITIES

1. "Teaching-learning situations may be classified on a continuum which ranges from thoughtless to thoughtful modes of operation". Discuss this statement with any educationist and prepare a report of your discussion.
2. Draw a diagram highlighting the phases of memory on a chart and hang it in your classroom.
3. Write below four characteristics of good memory briefly:

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4. Prepare a chart of comparative study of memory, understanding and reflective levels of teaching.

### 3.7 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1 Describe the meaning of level of teaching. How many are these levels.
- Q.No.2 Critically examine the teaching for memory development.
- Q.No.3 Discuss the phases of memory and give examples in support of your answer.
- Q.No.4 Define the term memory.
- Q.No.5 Explain the classification of memory.
- Q.No.6 Discuss the characteristics of good memory.
- Q.No.7 "Memory-level teaching provides help to the teaching at understanding and reflective levels on one side while it provides basis for the success of these two". Discuss.
- Q.No.8 Critically examine the understanding level of teaching.
- Q.No.9 What are the limitations of teaching at understanding level?
- Q.No.10 Define the term Reflective Level Teaching.
- Q.No.11 Discuss the model of reflective level of teaching.
- Q.No.12 What are the limitations of reflective level of teaching? Discuss.

- Q.No.13 Give a comparison of memory, understanding and reflective level of teaching.
- Q.No.14 Discuss the different levels of teaching. How the teaching of reflective level is different from the memory-level of teaching? Clarify.
- Q.No.15 Give suggestions to make the reflective level of teaching more effective.



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UNIT - 4

PLANNING OF TEACHING

BY  
PROF. DR. MUHAMMAD RASHID

## 1.1 INTRODUCTION

An unplanned individual and nation live in anarchy. They can never achieve their goals. They alone are destined to achieve who proceed in a planned way. An unplanned individual is in the position of sailor having no knowledge of direction.

Planning provides direction to economic development. By planning we mean to provide for the solution of future problems through the medium of available resources. It is possible only at the level of the individual, family and nation. Every individual, family and nation should make judicious use of his limited and available resources for the maximum benefit so as to strengthen economic development.

In this way, planning leads a nation towards progressive human life. Planning should have the following characteristics only then economic development is feasible.

- i. Planning should be in public welfare
- ii. People should have faith in planning.
- iii. Planning should be democratic.
- iv. Planning should establish coordination between consumption and production.
- v. There should be coordination in national economy through planned efforts.
- vi. Planning should provide for equal distribution of wealth and purchasing power.

Planning has become an essential part of national life. Every developed, under developed and developing nation is engaged in development through its medium.

Planning can play its role in economy development in the following ways.

- i. **Increasing production:** An addition to production is an important aim of planning. Through this medium, knowledge, skill, utility etc, are used in increasing production. The productive capacity of traditional type of industries can be increased and new industries can be encouraged for working in undeveloped fields. Planning awakens that indigenous and foreign economic aid be sought to increase production. Provision is made for import and export of material produced.

Planning establishes blending of material and human resources for the sake of economic development so that economic development is possible in a proper way. Planned programme can be adopted in the field of agriculture and agricultural production to accelerate the rate of development. Thus planning can be helpful in increasing productivity in agricultural field.

It is essential to make democracy a success. Pakistan was an economically backward country. Planning has been adopted in Pakistan. We have adopted Five Year Plans and accelerated the rate of national development. The support of planning was taken to exploit properly the material and human resources of the country and strengthen the national economic development.

ii. **Spread of Education:** Education is the basis of economics. Planning in education increases the rate of economic progress. Those nations which make more investment on education become strong from economic point of view and those which do not, lag behind. New technique, knowledge and skill can only be obtained through the medium of education. By these means, we can proportionately increase our produce with limited means. The unrest, ignorance and poverty present in the society can be removed by education. Education can make material and human resources more qualitative and prepare the background of economic development. By means of education are provided capable citizens, skilled labourers, doctors, engineers, teachers, specialists and scientists who make use of knowledge in a planned way. they give their cooperation in economic development.

## 4.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss task analysis in planning of teaching;
2. explain how to write general statement about learning;
3. appreciate content analysis in the planning of teaching;
4. discuss the three domains of objectives, and
5. explain the significance of behavioural objectives of teaching.

### 4.3 TASK ANALYSIS

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System analysis is the comparison of alternative means of carrying out some function, where the means are complicated and comprise of a number of inter-related elements.

It is rational, problem-solving method of analysing the education system and making it more effective. System means all elements, living and non-living, working together for a common purpose, e.g. education system is comprised of pupils, teachers, administrators, curricula, instructional materials, instructional strategies, physical environment and the evaluation of instructional objectives.

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According to Packham, Cleary Mayes (1973, PP.131-32) "System analysis is one of the technique which aims at finding the most efficient and economically intelligent methods, for solving the problems of education scientifically."

The purpose of system analysis is to get the best environment in the best place for the best people at the best time and at the best price.

**i. Origin:**

The system approach evolved during second world war.

**ii. Objectives**

No system is perfect in itself. Every system needs improvement from time to time.

**iii. Focus**

- (a) To diagnose the causes and factors of the input and process in view of output (or objectives).
- (b) To provide remedy or improvement in the system by implementing different means to the system and analyse the output.

**iv. Principles**

Following are the principles of a system:

- (a) A system has inputs, process, output and an environment.
- (b) A system analysis can be used for the development of the system as a whole.
- (c) It is a scientific, qualitative approach.
- (e) It has its cost-utility i.e. improvement in the system is economical in terms of cost, time and energy.



- (f) It is the practical aspect of system approach. It involves analysis of the system.

v. **Functions of System-Analysis**

- (a) Reviewing, (b) Evaluation (c) Operation and (d) Monitoring

vi. **Procedure of System Analysis**

Several diagnostic steps are followed:

- (a) **Establishing the objectives:** What outputs we demand, comes under objectives
- (b) **Review of system-operations:** The prevailing operations of the system are reviewed to find out the causes of deficiencies.
- (c) **Collection of data:** By administering tests, or through observations, data is collected.
- (d) **Analysis of data:** To make it meaningful, analysis of data is done objectively by using statistical techniques and inferences are drawn.
- (e) **Isolation of the problem:** On the basis of inferences, the exact cause of the problem is identified.
- (f) **To locate area of the problem:** A system comprises of various elements. So, on the basis of causes, specific area of the problem is identified. The operations and elements of this area are reviewed.
- (g) **To prepare a model or flow-chart:** A plan or a model is developed concerning all the steps of analysis of system. Different means are applied one by one to bring desirable modifications.

## vii. Evaluation of the system-analysis

On the basis of the following criteria, workability of new project (means) is evaluated in the system.

### Criteria for evaluation

The criteria for evaluation is as under:

- **Performance:** Performance of new project is compared with the previous system operations. If performance is better, the new project is implemented to whole system and continuous monitoring is done.
- **Cost:** If the cost of new project is economical than the previous one and its performance is certainly better, new project is implemented to the system.
- **Utility:** If the new project has high utility than the previous one, it is adopted by the system.
- **Time and energy:** If the new project requires less time and less energy in improving the system it is applicable to the whole system.

**Operations of the system:** On the basis of evaluation, the most of the project is accepted and implemented in place of previous one. Constant monitoring is done to check and maintain the effectiveness of the new project.

### Application of system-analysis in education

- To solve administrative problems.
- Evolving a new system of education according to the needs of society and students.
- Reform in the examination system.

For further details, please read the below mentioned material.

Saxena Swarup, N R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP 167-173	4-1
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#### 4.4 WRITING GENERAL STATEMENT ABOUT LEARNERS

The following points may be considered while writing general statement about teaching:

- i. Age and gender of students.
- ii. Skill and interest of student (explored through some frames.)
- iii. Culture-background of students.
- iv. Entry behaviour of student observed by giving some frames.
- v. Intellectual level of students is measured by giving intelligence-test.
- vi. Cumulative records of students are observed to differentiate between low achievers and high achievers/to find out students' abilities and capabilities.
- vii. Diagnostic tests are given to students to reveal their weak points.

**Defining instructional objectives:** Instructional objectives described the broad-aims of the lesson. They are generally stated in hypothetical dispositional states of the learner, like his knowledge, understanding etc. For example:

- i. Students should be able to know different parts of the flower.

- ii. Students should know the details of the structure and function of the male and female reproductive parts respectively.
- iii. Students should understand the process of the pollination and fertilization and the role of different parts of the flower in these process.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.173-177	4-2
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#### 4.5 CONTENT ANALYSIS

Following are the important steps of content analysis:

- i. Step-I of content-analysis is sequential analysis in chronological order i.e. pollination should be taught before fertilization.
- ii. Step II of content-analysis is to display the content-elements into two dimensional table called content-matrix. It shows the inter verbal relationship between all elements. These interverbal relationship provide programmer with variety of approaches and alternative sequences.
- iii. Content-matrix helps to locate major concept areas to be covered in the programme.

For example: There are four major concept areas:

- i) Parts of flowers. Its overall structure.
- ii) Reproductive organs. Their structure and function.

- iii) Pollination.
- iv) Fertilization.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP. 162-170	4-3
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#### 4.6 TAXONOMIC CATEGORIES OF THREE DOMAINS

There are many educational objectives. These may belong to the mental, social, moral, emotional or physical aspect of learners. These are stated in behavioural terms. Some belong to one category, and some to another category. Therefore, efforts were made to categorize them. Dr. B.S. Bloom and his associates evolved a category system which is popularly known as "Taxonomy of Educational Objectives". This category system helps us in evaluating the nature and extent of behaviour changes brought about among learners. It is used in almost all systems of education all over the world because it has been standardized. Dr. Bloom translated these objectives into behavioural terms to make them observable, and measurable. The characteristics of this taxonomy are as given below:

- i. The educational objectives and behavioural changes can be described in an hierarchy from simple to complex.
- ii. The categorization helps in selecting and organizing appropriate learning experiences, methods and aids to be used, and adoption of proper evaluation technique.
- iii. It makes the whole teaching-learning process define, specific and goal-directed.
- iv. The school authorities can evaluate the effectiveness of their curricular and co-curricular programme in terms of desired predetermined objectives.

#### 4.6.1 Categorization

According to Dr. Bloom learning or behaviour changes occur in all the three aspects i.e. cognitive, affective and conative (knowing, feeling and doing). According to Dr. Bloom divided all the educational objectives into three domains, that is, cognitive domain, affective domain and conative domain and categorized the typical related accompanying behaviour, as shown in the following table:

Cognitive domain	Affective domain	Conative domain
1. Knowledge	Receiving	Impulsion
2. Comprehensive	Responding	Manipulation
3. Application	Valuing	Control
4. Analysis	Conceptualizing	Coordination
5. Synthesis	Organizing	Naturalisation
6. Evaluation	Characterizing	Habit formation

#### 4.6.2 Cognitive Domain Taxonomy

Dr. Bloom has divided the cognitive domain into six categories on the basis of complexity and hierarchy of mental functions. This categorization proceeds from simple to complex acts i.e. knowledge, comprehension, application, analysis, synthesis and evaluation. He further divided these into sub-categories. Knowledge comes at the lowest level of objectives. In connection with cognitive domain Dr. Bloom says, "It includes those objectives which deal with recall and recognition of knowledge and development of intellectual abilities and skills."

**At lower level:** It includes knowledge of facts, specifics, principles, terms, trends, classes and classification, criteria and methodology; knowledge of universals and abstractions of theories and structure. Comprehension includes understanding, translating and interpreting.

**At medium level:** There is application of knowledge in different situations and analysis of elements, relationships and principles.

**At high level:** There is synthesis which means production of something unique, or production of a plan, or derivation of a set of abstract relation and evaluation which means judging in terms of internal and external evidence.

Therefore, the hierarchy of cognitive domain is constituted by knowledge, comprehension application, analysis, synthesis and evaluation.

- i. **Knowledge:** Under this objective, the processes of recall and recognition are developed with the help of knowledge of facts, events, principles, etc.
- ii. **Comprehension:** Knowledge is necessary for comprehension. The learner is expected to reproduced facts in his own words, translate or interpret some content material.
- iii. **Application:** For application of knowledge, it is necessary to have knowledge, comprehension, of that particular content. It is only then that he can apply it in new situation.
- iv. **Analysis:** It is comparatively higher ability. It constitutes the breaking up of facts, events, or principles into meaningful parts and establish relationships between different events, principles etc.
- v. **Synthesis:** It involves creating something new or giving a new shape to knowledge. It develops creative abilities.
- vi. **Evaluation:** This is the highest level of objective of cognitive domain, in which facts, events and principles etc, are critically evaluated in terms of internal and external criteria.

#### 4.6.3 Affective Domain Taxonomy

The objectives of affective domain are concerned with development of interests, attitudes and values and the individual exhibits are minor feelings and experiences. At the lowest level there is attention and at the highest here is formation of attitude. The detailed categorization is as given below:



**Lower level:**

- i. Receiving (attending)
  - (a) Awareness
  - (b) Willingness to receive
  - (c) Controlled or selected attention
  
- ii. Responding
  - (a) Acquiescence in responding
  - (b) Willingness to respond
  - (c) Satisfaction in response.

**Middle Level:**

- iii. Valuing
  - (a) Acceptance of value
  - (b) Preference for a value
  - (c) Commitment to a value.
  
- iv. Organization
  - (a) Conceptualization of a value
  - (b) Organization of value system.
  - (c) Satisfaction in response.

**High Level:**

- v. Characterization of a value complex
  - (a) Generalized set
  - (b) Characterization.



Therefore, we see that the hierarchy of affective domain starts from receiving (attending) goes through responding, valuing, organization, and ends at characterization of value complex.

- i. **Receiving (Attending):** This is the lowest kind of objective in affective domain in which the learner is provided with initial experience to exhibit willingness to receive and control selected attention, for example, the response given by students on hearing the recitation of a poem by the teacher.
- ii. **Responding:** This is the second objective in which paying attention is necessary. The students pay attention to the recited poem, are willing to respond and derive satisfaction from giving response to questions.
- iii. **Valuing:** Receiving and responding help in the achievement of this objective which is exhibited in the behaviour of the individual in the form of acceptance and preference for a value and commitment to it.
- iv. **Organization:** After the acquisition of values the individual conceptualizes the correct nature of different values and organises them into a value system which helps in the development of attitudes.
- v. **Characterization of a value complex:** This is the highest kind of objective in affective domain which based upon the four objectives described earlier. At this stage a permanent value complex or system is formed in the individual which is reflected in his interests, attitudes and life style. A generalized set of emotional behaviour evolves.

#### 4.6.4 Conative Domain Taxonomy (Psychomotor)

This domain relates to development of physical skill. A detailed and standardized taxonomy of the conative domain objectives is yet to be evolved. However, Prof. Simpson, Prof. Harrow and Prof. Dave have tried to categorize this objective on the basis of muscular actions.

- i. Categories given by Prof. Harrow: Reflex movement, basic fundamental movement, physical abilities, perceptual abilities, skilled movements, non-discursive communication.
- ii. Categories given by Prof. Simpson: perception, set, guided response, mechanism, complex overt response.
- iii. Categories given by Prof. Dave: Imitation, manipulation, precision, articulation and naturalization.

Since the categories given by Prof. R.H. Dave are more popular, acceptable and are commonly used, we shall describe only these categories in hierarchical order.

- i. **Imitation:** Impulsion and over repetition. This category is of the lowest kind in which mental impulsion provides the base and the individual repeats the overt act in crude form.
- ii. **Manipulation:** Following direction, selection and fixation. At this stage the individual follows directions, and selects. Certain acts, and the process of fixation starts.
- iii. **Precision:** Reproduction and control. This is the third stage at which the individual reproduces the desired act and gains necessary control over it.
- iv. **Articulation:** Sequence and harmony. At this stage the individual acquires the skill of controlled presentation of different acts in a coordinated manner in proper sequence and harmony.
- v. **Naturalization:** Automatism and interiorization. This is the highest kind of objective in conative domain in which the desired acts turn into automatic acts leading to a sort of habit formation or routine acts for the individual.

For further details, please read the below mentioned material.

Sharma, R.A. (1981)	<u>Programmed Instruction</u> , Merrut R. Lall Book Depot, PP.171-196	4-4
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#### 4.7 DETERMINING BEHAVIOURAL OBJECTIVES OF TEACHING

These objectives are statements based on Robert Mager's Method (1962) in terms of observable and measurable behaviour. These objectives the base for designing the teaching (learning steps in any programme). Behavioural objectives of the programme are formulated as follows.

- i. Given a figure of a flower and names of its parts, viz. Petals, Sepals, Pistil and Stamen. Students label its parts.
- ii. Given a figure of a flower (without names), students label its parts.
- iii. Students state that stamen and pistil are the male and female reproductive parts respectively.
- iv. Given a figure of stamen, a student labels its parts, viz anther and filament.
- v. Given a figure of a pistil, a student labels ovary, style and stigma.
- vi. Students describe the structure and functions of pistil and stamen correctly.
- vii. Students state that anther contains pollen grains. Given a figure of a bursted anther, student labels its pollen-grains.
- viii. Students state that pollination is the process of transfer of pollen-grains from the anther to the stigma and wind and

insects are two agencies for pollination.

- ix. Given a figure showing the inner parts of pistil, he will be able to label ovules and given an enlarged figure of ovules, he labels the embryo-sac and female nucleus and other nuclei.
- x. Given a figure of the inner structure of a pistil, the student labels pollen tube, two male nuclei.
- xi. Given different figures, students state that fertilization takes place when the pollen tube bursts into the embryo-sac and releases male nuclei, so that one of them fuses with the female nucleus.

Writing of behavioural objectives

- i) Start with an action word.
- ii) Break the instructional objectives into small components and thus prepare a "pyramid of objectives".

**Defining entry behaviour:** Since every human-being comes to any learning task with his own unique collection of experience and attitudes, this stage create a problem in teaching matter.

So, a programmer or a teacher must find out the entry behaviour by giving entry behaviour test (EBT or TEST1) or preliminary test. It judges what student knows about the content-matter presented and what he does not. In EBT, 15-20 frames on previous knowledge and 5 questions are based on new knowledge. This testing may be individual/small group/field testing.

**Development of criterion test:**

- a. Criterion-referenced tests are designed to obtain evidence as to what extent the objectives of instruction have been achieved.
- b. Three criterion tests are developed to measure different levels of capabilities of the learner. They are as follows:

### **Test on identification of terms**

- i) The students have to identify different parts of flowers in each item (which are taught in the programme).
- ii) Each test consists of a flower or its part and a list containing names of the parts in a serial order.
- iii) The draft-test is revised during try-out stages.

**Test in recall of terms:** In each test item, only figure of different parts of the flowers are given. The list of names of parts is not given and student is asked to recollect the name of the given part and to write the name in the blank.

- i) Test of comprehension and application. Multiple choice-items are given to student regarding flower and he is asked to choose the correct answer.
- ii) Testing through criterion-test may be individual/small group/ or field testing.
- iii) Marks of entry behaviour test are subtracted from the marks of criterion test (or terminal test) and the obtained marks reveal the actual gain of knowledge by the child and will check our objectives. Terminal marks should be 90-95. If every student scores 100% marks, it means our programme is successful.
- iv) At least, two frames for each object should be asked and some frames should be based on prerequisite skills.

**Development of specific content outline:** Mainly subjects are taught in a particular sequence because there is an inherently logical way of proceeding from one point to another. But, some times, the order and level of presentation of content-matter may be in easier

way to make clear understanding of the unit. So, we must write core-material before writing frames.

For example, a flower has four parts, namely, sepals, petals, stamen and pistil. The outermost part consists of sepals. Petals are inner ones to sepals. Stamens are thin long structures fixed to the based of the flower. Pistil is the flash-shaped innermost part of the flower.

Only stamen and pistil take part in reproduction. The stamen is a male reproductive organ and pistil is the female reproductive organ. Stamen consists of two parts anther and filament. Filament is a thin thread like structure on the top of which is the anther. Anther is lobe like structure filled with pollen-grains. Pistil consists of 3 parts-stigma, style and ovary. Stigma is the sticky tip and ovary is the enlarged base. Style is the neck joining stigma and ovary.

Sometimes, after the maturity of the flower, the anther bursts open and lets out pollen-grains. Pollen grains are transferred from anther to stigma by wind or insects. This transference is called pollination.

Ovary in pistil contains ovules. An ovule contains in embryo-sac which contains eight nuclei. Out of which one nucleus is slightly bigger and elongated. This is the female nucleus.

During pollination, pollen grains get deposited on the stigma. The pollen-grains develop into pollen-tube which contains two small oval nuclei called male nuclei. The pollen tube bursts into the embryo-sac and one nucleus fuses with female nucleus. This is called fertilization. For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.181-189	4-5
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## 4.8 ACTIVITIES

1. Draw a diagram by indicating the steps involved in task analysis.
2. Write below the three domains of educational objectives

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3. Take any subject area of your choice and write down at least three objectives in behavioural term.

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4. Fill the blanks with sources of content analysis.

Content  
Material

Content  
analysis

**NOTE:** For answer, please see page 164 of the material of box 4-3.

## 4.9 EXERCISE

Hopefully, you have studied the material of unit 4, now please answer the following questions:

- Q.No.1      Define task analysis.
- Q.No.2      Discuss the significance of task analysis in planning of teaching.
- Q.No.3      Discuss and differentiate between the terms task analysis and content-analysis. Give examples in support of your answer.
- Q.No.4      Describe Bloom's taxonomy of educational objectives - cognitive, affective and psychomotor domains.
- Q.No.5      Discuss the method of content analysis.
- Q.No.6      Explain the definition of educational objectives.
- Q.No.7      How you would determine behaviour objectives of teaching? Explain.



Q.No.8 Take any subject of your choice and write its atleast fifteen objectives of teaching.

Q.No.9 Write short notes on the following:

- i) Task analysis.
- ii) Content analysis.
- iii) Aims, goals and objectives
- iv) Behavioural objectives

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**UNIT - 5**

**TEACHING METHODS AND TECHNIQUES**

**BY  
UHAMMAD RASHID**

## Unit -5

### TEACHING METHODS AND TECHNIQUES

Introduction  
Objectives  
Lecture method  
Discussion method  
Demonstration method  
Heuristic method  
Project method  
Activity method  
Laboratory method  
Questioning techniques  
Assignments  
Activities  
Exercise  
Bibliography

## 5.1 INTRODUCTION

Teaching requires special atmosphere. The teacher behaves in a particular way under this special type of atmosphere and convinces the pupils expecting them to memorise something. The teacher makes some picture on the blackboard and encourages the pupils to understand that picture when the teacher performs all these activities, we understand that he does the teaching actively. This fact and the analysis of the foregoing definitions throw enough light on the nature of teaching.

Teaching is described as a tripolar process which are as follow:

- i. **Signs and symbols in teaching:** A teacher uses signs and symbols in teaching process. The pupils understand them and start taking interest in them. The pupils explain the signs and symbols used by the teacher and use them in communication.
- ii. **Teaching as linguistic process:** Instruction is also imparted in teaching process with the help of signs and symbols and, consequently, language is also used. It is clear that teaching is not possible without language. Therefore, teaching is a linguistic process. Teacher imparts instruction and discusses and explains events only the use of language.
- iii. **Teaching and logic:** The process of teaching includes signs, symbols, language and logic. Logic is used to systematically present the smallest units of the subject matter. The teaching activities are arranged in a logical manner and selection of question for examination is also based on logic. Therefore, logic is a necessary element in planning, arrangement, control and evaluation of teaching process.

## 5.2 OBJECTIVES

After studying the unit, you should be able to:

1. explain the significance of lecture method in teaching;
2. appreciate the discussion method;
3. analyse the demonstration method;
4. discuss the heuristic method in teaching;
5. state project method;
6. explain the activity method;
7. identify laboratory method in teaching;
8. specify the questioning techniques in teaching; and
9. discuss the significance of assignments method.

### 5.3 THE LECTURE METHOD

We can define 'lecture' as a methodical discourse on a subject. The discourse word signifies that only one person talks and the others listen. It thus is one of the collective methods of teaching and in these days used quite a lot especially at the college level of teaching. Its use has made many to think that it is synonymous with teaching. It is based on the assumption that the student is an empty vessel and anything can be poured into him. It is based on passive concept of learning. Lecture is not to be confused with telling. Lecture is a method of exposition, while telling is one of narration.

We use this method because of the following objectives:

- i) To clarify:** This method is a group method and when large number of pupils need clarification in the moment of lecturing can remove their doubts.
- ii) To extend contents:** In the books and otherwise, many things remain unsaid. There is a world beyond textbooks and pupils are interested to know about those things besides knowing

about the teacher. Sometimes the discussion in the book about a topic is not sufficient. We can use lecture method for the purpose.

iii) **For the purpose of review:** It is useful in recapitulatory work.

Characteristics and advantages of the lecture method are as under:

- i) The chief characteristics of this method is that it is probably the most efficient method for presenting a large number of facts in short period of time. Time stands saved.
- ii) It is useful in introducing new subjects, in summarizing the literature in a field, in recapitulating course work etc.
- iii) With the help of this method, the teacher can correct speech defects. He can teach right pronunciation to children and adults alike provided his own pronunciation is not faulty. It does inspire bright students.
- iv) It adds life to those ideas which appear to be dull, difficult and cold in the book and which the students like to skip over. How to do that depends upon the teachers who must have the capacity to impersonate, narrate and inspire students.

The lecture method has the following disadvantages.

- i. The lecture is largely a one way process. There is not much interaction between the students and the teachers.
- ii. It ignores individual differences. Many in the class may not follow the lecture as all humans are not alike.
- iii. It does not take into consideration the interests, abilities and needs of the students.
- iv. If the teacher is not alert and does strive hard, the lecture will become monotonous, boring, unimpressive and dull. It does happen in majority of the cases.

- v. Lecture tends to substitute the teacher for the textbook and many students do not bother to read those. It is a wrong approach. A teacher cannot present all that is in a book and in various books.

The following points be taken into consideration and if we do not and if we still follow this method, we shall soon find only the chairs and the benches to be in the social education center to listen to the adult education worker.

- i) Lecture must be well organized. Remember it is the methodical discourse and not a haphazard, loosely organized talk. The ideas should be in a logical sequence.
- ii) For every generalization, an example should be there.
- iii) It should proceed from simple to complex.
- iv) The main points must be clearly brought about.
- v) Lecture should be full of humour and wit.
- vi) The lecture must go well prepared and bringing with confidence. The speaker should not suffer from speech defects, he should not be a stammerer.
- vii) At the end of the lecture, questions must be invited.
- viii) During the course of the lecture, some pauses must be given of resting through the lecture.

The following points will guide us in using the lecture method.

- i. When information can be given more effectively than through any other means, both w.r.t. learner's understanding and to the retention and the economy of time and effort involved, it must be used.



- ii. When only teacher has the data or information which the class cannot obtain as a whole, lecture method is the only solution. It will require dictation and it should be done in an effective manner.
- iii. At the time of introducing a new topic or concluding an old topic, lecture method can be used in a most effective manner.
- iv. Lastly, when a proper mind set towards a phase of work is required or when general enthusiasm is to be aroused, then nothing like a good lecture. An alert teacher can play 'havoc' by delivering a forceful lecture.

There is much in common between lecture preparation and lesson planning. Lecture is in fact daily lesson plan.

When we prepare our lesson plan, we follow the steps listed by Herbart also are known as Herbartian steps mentioned here in brief:

- i. **Preparation:** First of all, pupils mind should be prepared to receive the new knowledge. Nothing is to be imparted in vacuum. New knowledge is retained in the mind when it is linked with the relevant previous knowledge. Herbart calls this as apperceptive masses. The teacher should stimulate and bring into forefront the 'apperceptive masses'. This will enable the pupils to link the new knowledge with their previous knowledge. Teacher comes to know where the pupils stand. The pupils begin to feel that there are certain groups in their knowledge which must be filled up. Thus the pupils become eager to receive the new knowledge. For this purpose, the teacher render

- put questions
- narrate a story
- use some audio-visual aid.
- discuss some relevant topic.

This will naturally prepare the ground for the new lesson and start as a sort of introduction of the same. After this teacher

may announce the aim of the lesson in clear and concise words.

ii. **Presentation:** After preparing the students, and announcing the aim of the lesson, teacher should start the very presentation of the lesson. Here the teacher uses a number of teaching devices like questioning, narration, explanation, audio-visual aids etc. to make the various ideas clear to the pupils. Presentation of knowledge should not be one-way traffic. The teacher is to carry the students with him. He is to so present the subject matter that pupils follow it without any difficulty. There should be activity in them also. Teacher should try his best to develop and expose the subject matter with the active participation of pupils. He should bear in mind the following principles in the presentation stage:

- The matter to be presented should be wisely selected according to the level of pupils.
- While teaching, teacher should see that the pupils follow what he teaches. He should take up the next section of the lesson only when the previous section is clear to the students.
- First finish one section of a lesson and then integrate it with what has gone before. In the end, all the parts of the lesson should be integrated to understand the lesson as a whole.

iii. **Comparison or association:** Facts or examples presented in the previous step should be compared and contrasted so that the pupils understand their mutual relationship. Knowledge is retained in the mind in the interlined form and not in the isolated form. This step is especially important in inductive type of lessons. Pupils observe, compare and contrast some particular examples. This leads them to the discovery of some new rules or generalization.

- iv. **Generalization:** Here they understand similarities and different relations. This leads to formulation of general principles, rules and formulas. The teacher is not to give the generalization himself. He is to guide only. The students make generalization themselves.
- v. **Application:** The generalizations arrived at are applied to solve problems. Knowledge becomes useful when it is put to use. They also test generalizations. Application also serves the purpose of revision and recapitulation. This helps in fixation of knowledge.

Personality of a teacher has a great role to play in lecture, e.g. good voice, manner of the teacher while speaking has lot to do with the effect of the lecture. Teachers must be pleasing. They must smile. They must be sympathetic. The students will enjoy the lecture delivered by such a teacher. Some teachers while addressing students look outside or look at the ceiling. This is to be avoided.

For further details, please read the below referred material.

Vedanayagam, E.G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publishers Private Ltd, PP.50-60.	5-1
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#### 5.4 THE DISCUSSION METHOD

Group discussion is now recognized as a basic method of education, both for students and education for the adults, supplanting to a large extent the lecture method. There are many reasons for this, two of which are:

- i) The method helps in what Knowles (1970) calls "internalising" and using the facts for our sake which can be collected with the help of other methods available at our disposal.
- ii) Another reason that children and adults have a rich

background of experience on which the educational processes can be drawn. These experiences are more valid as the source of material for group learning than some other abstract textbook will be.

Discussion has been defined as, "Discussion is the process where by two or more people express, clarify and pool their knowledge, experiences, opinions and feelings." It is a cooperative process in which several minds work together on a basis of equality and mutual respect towards either understanding or agreement. It is, however, regretted that the discussion may not end in agreement but still clear understanding of the problem is reached.

### **Value of discussion**

- i. It achieves the highest degree of understanding between the students and the teacher.
- ii. It stimulates thinking on the part of participants. There is no authority whose word be accepted as final. In such a climate each adult is expected to think for himself.
- iii. Discussion is almost certain to be keyed to the interests and needs of the students since they are the ones who decide about as what is to be taught.

### **Limitation of discussion**

- i. It is not always the best method for every learning situation.
- ii. It may be pooling of ignorance many a times.
- iii. One person may dominate the whole show thus wasting the time of others.

The basic idea of discussion can be combined with other method to give us different variations. Some of those forms or types are:

- i. **The Symposium:** In this type of discussion, three or more persons present their views on a several sided question or

topic. Each one takes one aspect of the topic. It can be followed by questions and discussion. This method stimulates greater freedom in audience participation. One precaution be used in the sense is that all speakers are of equal ability.

- ii. **The Panel Discussion:** Here few people with different backgrounds and experiences discuss a thing while others listen. They are of course free to get their doubts removed if any. It requires of course a skillful moderator who sees to it that the members do not start making long speeches.
- iii. **Informal Group Discussion:** Here the pupil is the leader of the discussion activities. leadership qualities are developed in the leader. There is no hesitancy on the part of the students. They also develop thinking ability. This is a difficult procedure to handle but can be handled. If the discussion is well planned, no problem is going to arise.
- iv. **Formalized Group Discussion:** Here there is a discussion leader, and there are several resource members who represent special skills and specialized knowledge essential to the problem which the group is discussing and there is a recorder. The leader keeps the discussion on the track. At intervals, he summarizes the discussion and clarifies the discussion before the next point. No confusion should prevail.

Recorder records the general direction of discussion. The discussions made by the group are also recorded.

- v. **Institutional forms of socialized procedure:** It has become popular to cast the class into one of many forms of social organizations that exist in the community. Such we can have mock parliament, a party convention and all that. This way, we can get the feel of our democratic limitations. When we attempt this type of discussion, we have to remember certain principles:
  - a) The form of organization is to be cast in a simple mould as possible.

- b) The form employed should be adopted to the needs of the group.
- c) Organizational officers should be few, and they should be changed frequently.
- d) The teacher should maintain a vital control of the class as guide and counsellor, even through visual at times may be delegated.

The following hints will make the discussion useful.

- There should be proper leadership to guide the discussion and to keep it on the track.
- Before we start discussion, proper planning must be done. If this is not adhered to, we shall arrive no where.
- Everyone in the group be given the opportunity to talk. Even those adults who are of shy nature be compelled to participate in it. It should not be monopolised by any one.
- The discussion must remain a formal affair. It should never be allowed to become informal.
- To avoid pooling of ignorance, we must have an expert associated with the discussion. The expert be from the field or be connected with the subject under discussion.

For further details, please read the below referred material.

Ronald, T. Hyman (1980)	<u>Improving Discussion Leadership,</u> New York, Teacher College, Columbia University, PP.28-47.	5-2
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## 5.5 DEMONSTRATION METHOD

It is a traditional classroom strategy used in technical and training colleges and in teacher education.

**Focus:** To achieve psychomotor and cognitive objectives

**Structure:** Demonstration is given in three successive steps:

- Introduction
- Development, and
- Integration

- i) **Introduction:** In this step, objectives of the lesson are stated. The teacher may be called a demonstrator. He demonstrates the activity before the student that is to be developed.
- ii) **Development:** Students try to imitate the demonstrated activity. If there is any query, the teacher tries to satisfy them by further demonstration and illustrations.
- iii) **Integration:** At this step, the teacher integrates all the activities and then, these activities are rehearsed, revised and evaluated.

**Principle:** This strategy is based on following principles:

- i) Learning by doing maxim is followed.
- ii) Skills can be developed by imitation.
- iii) The perception helps in imitation.

**Application:** This strategy is applied mainly in technical or training institutes. In teacher-education programmes, it is used to develop skills in the student-teachers. At school level, a teacher applies it in

teaching science, biology, nature study, art and crafts.

### **Advantages**

- i. It helps in involving more senses to make learning permanent.
- ii. Though, teacher behaviour is autocratic, he invites the cooperation of pupils in teaching-learning process.
- iii. It develops interest in the learners and motivate them for their active participation.
- iv. It helps in achieving psychomotor objectives.
- v. Any simple or complex skill becomes easy to understand.

### **Disadvantages**

- i. It can be used only for skill subjects.
- ii. Only the attention of the learners is invited towards the activity demonstrated. They are not free to discuss about it.
- iii. Due to poor economic conditions of the government-school scarcity of audio-visual aids and equipments. And, the teachers are not so creative to produce hand-made models for demonstration.
- iv. There is a general of sincerity and diligence among teachers. Who wish to complete the syllabus or syllabi at the earliest without putting sincere efforts.

### **Suggestions**

- i. The teacher should be a sincere, diligent, and skilled person.
- ii. Teachers should, himself, prepare the models for demonstrations and encourage the learners too.



- iii. Demonstration should be followed by discussions.
- iv. A teacher must have the ability to use audio-visual aids with expertise.

For further details, please read the below referred material.

David Minton (1997)	<u>Teaching Skills in Further &amp; Adult Education</u> , London, City & Guilds MicMillian, PP.121-124.	5-3
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## 5.6 HEURISTIC METHOD

The term 'Heuristic' refers to Armstrong who was the exponent of this strategy. Pollio and Dankar (1945) called it "problem solving." It is based on the Psychological principles of 'trial and error' theory. Logical and imaginative thinking is prerequisite for this type of teaching method. It is an economical and speedy method.

### Focus

- i. To develop problem-solving attitude.
- ii. To develop scientific attitudes towards the problems.
- iii. To develop power of self-expression.

### Principles

- i. To teach as little as possible at one time.
- ii. To encourage learner to learn himself as much as possible.

## Structure

A problem is placed before the learners and they are asked to find the solution of the problem through various literary means, like library, laboratory workshops etc. Teacher's role is to initiate the learning and pupils are active through-out the learning process. By using their creative thinking and imaginative power, they try to find out the relevant solutions based on some logic. They learn by self-experience.

## Advantages

- i. It helps in achieving cognitive and psychomotor objectives i.e. it helps in all round development of the child.
- ii. Students are put into the situation to learn by self-experience. It certainly develops self-confidence and self-reliance in the learners.
- iii. It helps in developing scientific attitude and creativity in the learners.
- iv. Teacher encourages the learners to explore the environment in search of the solutions of the problem. By doing so, some new knowledge is discovered by them.
- v. Teacher is always ready to provide individual guidance regarding the solution of the problem. Thus, interaction between the teacher and the learner takes place in a co-operative, conducive environment.

## Disadvantages

- i. It cannot be used at primary level of education.
- ii. High intelligence and divergent thinking is required in the learners. But, there are some students who are below average and fail to succeed in discovering the solutions of the problem. It lead them towards frustrations.

- iii. In true sense, none of the teacher has patience for providing individual guidance to the learners. And, learners, too feel hesitation to approach the teacher for seeking his help.

### **Suggestions**

- i. There can be number of solutions for a problem. So, it is the teacher's duty to provide guidance to the learners to select the most relevant solution of the problems.
- ii. Problem should be related to the course and curriculum and a definite time-period should be allotted to the learners to finish their research work.
- iii. Student's abilities, capabilities, interest and choice of the subject should be taken into consideration in allotting the problems.
- iv. There should be an eligibility criteria for providing the problems.
- v. In our country, the whole teaching is examination-centred, neither teacher nor the pupils have patience to apply this strategy and get benefit from it. If some enlightened teachers of science, maths and social sciences apply this strategy in their teaching, it will help in developing creative confident students.

For further details, please read the below referred material.

S.K. Kochhar (1990)	<u>Methods and Techniques of Teaching</u> , New Delhi, Sterling Publishers Private Limited. PP.311-315.	5-4
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## 5.7 PROJECT METHOD

This new method has evolved from the philosophy of pragmatists. It is experience-centred strategy related to life-situation.

### Focus:

- i. To socialize a child.
- ii. To achieve cognitive, affective and psychomotor objectives.

### Principles

It is based on the following principles:

- i. **Principle of utility:** Choose those projects which are closer to the social life.
- ii. **Principle of readiness:** Involve the learners in finding the solution of the problem with active participation.
- iii. **Principle of learning by doing:** Learner performs certain tasks and experience new thing. This adds to his knowledge and results in learning.
- iv. **Principle of socialization:** It develops the feeling of cooperation and group-work.
- v. **Principle of inter-disciplinary approach:** To involve the knowledge of different subjects in solving the social problems.

### Structure

According to Kilpatric, "A project is a whole-hearted purposeful activity proceeding in a social environment."

Kilpatric has classified the project methods in four types:

- i. **Constructive:** When learners have to construct some things related to social life. e.g. charts, models maps, parcels etc.
- ii. **Artistic:** These projects are generally allotted in the aesthetic fields of life, e.g. in music, drawing, painting, art and culture.
- iii. **Problem solving:** These projects are given to solve the problems related to any life-situation or related to any subject, e.g. How to operate bank-accounts? or How to send a thing at distant place? These general problems, if solved, will make a child efficient for social life.
- iv. **Group-work:** A team of student is assigned a work to be performed e.g. to develop a garden or in the school.

There are four basic elements of this strategy which make it purposeful:

- a) Spontaneity
- b) Purpose
- c) Significance
- d) interest or motivation.

### **Paradigm of Project Method**

The following steps are followed by the teacher:

- i. To identify the problems related to social environment of the learners.
- ii. Providing the situations.
- iii. Choosing the specific purposes of the project.
- iv. Planning the project.
- v. Execution of the project.
- vi. Evaluation of the project.

- vii. Implementation in real life-situation.

### **Advantages**

- i. It helps in developing social norms, social values among the learners.
- ii. It provides invaluable opportunities for correlation of various elements of the subject-matter and for transfer of training or learning.
- iii. It helps in growing knowledge very effectively as a result of their close cooperation or social participation in the spirit of democracy.

### **Disadvantages**

- i. The projects cannot be planned for all subjects and whole subject-matter cannot be taught by this method.
- ii. It is not economical from the point of time and cost.
- iii. There is no strict time schedule followed, then, how a teacher can finish his course in definite time.
- iv. In the overcrowded classes of Pakistan, it is very difficult for a teacher to plan or to execute the projects to the learners and supervise them.

### **Suggestions**

- i. It should not be used as an independent teaching-strategy but a supplementary teaching technique.
- ii. Teacher should try to utilize the cheap and waste products to prepare models etc.

- iii. To avoid the problem of supervision, teacher may appoint a leader to each group of students.
- iv. Teacher should fix a time-limit for each project.

For further details, please read the below referred material.

S.K. Kochhar (1990)	<u>Methods and Techniques of Teaching</u> , New Delhi, Sterling Publishers Private Limited. PP.278-298.	5-5
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## 5.8 ACTIVITY METHOD

After finishing the teaching teacher asks the student oral and written questions to evaluate his behaviour so that there is right evaluation of his achievement. Therefore, in the evaluative phase all those activities are involved which evaluate the achievements of student and decision is made on achievement of objectives. Special emphasis is laid on following activities:

- i. At the end of teaching, the teacher exactly defines the dimensions of changes in teaching which is called as Criterion Behaviour. For this work he compares the actual behaviour of student with expected behaviour. If he sees that there is expected change in behaviour of most students then he concludes that his teaching plans and strategies have been successful and from the help of which he achieved desired goals.
- ii. To check or to compare the actual behaviour of student with expected behaviour he selects such testing devices which are reliable and valid and which could evaluate both academic and non academic aspects of the students.

- iii. On one hand by using valid and reliable devices, teacher knows about the achievements and goals of students. On the other hand by knowing the results of examination he comes to know that if the goals are not achieved then what was the problem with his teaching and what reforms should be made. In their way by evaluation, the activities of teaching are actually diagnosed so that necessary changes are easily made and teaching process is made effective.

Therefore, to achieve the objectives of teaching the three activities of teaching are so arranged that on one hand the thinking the three activities of working method of students could be expectedly changed and developed, simultaneously on other hand there is generation of creative thinking in them so that they could judge their reality and could inter relate their internal organisation with external experiences efficiently and be master in that work.

### **Significance of Teaching Activities**

The significance of teaching activities has been in country, time and society and will remain. Significance of teaching activities are highlighted in following liens:

- i. Teaching techniques are very important for student teachers. When the student teachers are taught in institutions about teaching activities, he comes to know about all the aspects of teaching. He comes to know, how to enter in the classroom and what all activities should be performed after that so that they may be able to make students learn and achieve the goals.
- ii. Teaching activities help in understanding the inter-relation between teaching variables and their nature.
- iii. By arranging the teaching activities in proper order there is an establishment of interaction between teacher and students and goals are achieved efficiently.



- iv. Activities of teaching general the conditions of learning and effects various types of teaching. In this way there is a relation established in learning and teaching.
- v. Considering the teaching activities, all the three aspects up of teaching i.e. memory knowledge and thinking could be explained.
- vi. Activities of teaching produce scientific basis for instructional design.
- vii. Activities of teaching encourage micro-approach.
- viii. By knowledge of teaching activities even serving teachers may increase their teaching skills and make teaching more efficient.

Even though teacher is in contact with children while teaching it is a very complicated process because it is the teaching which sets that any thing which has been learnt by students is how much and how good.

So any body who wants to be a good teacher he must analyse his taching behaviour and then using all three aspects of teaching creatively and progressively get success.

For further details, please read the below referred material.

S.K. Kochhar (1990)	<u>Methods and Techniques of Teaching</u> , New Delhi, Sterling Publishers Private Limited. PP.316-324.	5-6
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## 5.9 LABORATORY METHOD

It is the method in which more emphasizes laid down the activities of the children. The students learn by doing. The students and teachers cooperate with each other and do many things by cooperation of each other. The students are taught to develop their creative and constructive powers. The students learn many occupation, trades and industries. The knowledge imparted to students concerns the real life of the students.

In this method efforts is made to develop the pesonality of students according to the need of the society. Students are made social. Further the teacher is a friend, brother and guide of the students.

Normally, skill training subjects are taught through laboratory method. The problems of students are solved by discussion. Such laboratory methods are used in activity schools of different countries.

For further details, please read the below referred material.

Rai, B.C. (1994)	<u>Techniques and Methods of Teaching</u> , Luckhnow, Prakashan Kendra, PP.83-85.	5-7
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## 5.10 QUESTIONING TECHNIQUES

It is the ancient method of teaching. It is known as "Socratic Method". It is developed by a famous philosopher Socrates.

According to Parker, "The question is the key to all educative activity above the habit-skill level".

According to Thing, "Teaching means skilful questioning".

## **Focus**

To achieve the cognitive objectives and bringing knowledge to the conscious level.

## **Principle**

- i. Theory of unfoldment: all knowledge is within the child, teacher cannot teach any thing from outside.
- ii. The knowledge can be emitted by linking the questions with his answer.

## **Structure**

Socrates has suggested three steps:

- i. To prepare questions and arrange them in a logical sequence.
- ii. To present the questions in such a way that curiosity arises among the learners.
- iii. To ask new questions by linking with the learner's response.

## **Advantages**

- i. In asking the questions, the teacher keeps in mind the abilities, needs and interests of the learners.
- ii. It involves the learner's participation towards the subject-matter and in teaching acts.
- iii. It helps in achieving cognitive objectives and bringing knowledge at conscious level.
- iv. Classroom verbal interaction is encouraged.
- v. It is an useful strategy at all the levels of education.

### Limitations

- i. It is difficult to prepare good questions, and arrange logically.
- ii. The whole content-matter cannot be taught by this strategy.
- iii. The teacher wants the structured answers from the learners. There is no freedom for imaginative answers.

### Suggestions

- i. Instead of using it independently, it should be supplemented by lecture and demonstration methods.
- ii. The teacher should be skilled in framing proper questions and language of the questions should be clear and unambiguous.
- iii. The teacher should distribute the questions to the whole class evenly.

For further details, please read the below referred material.

Craig Kissock and Peter Iyortsuun, (1982)	<u>A Guide to Questioning Classroom Procedures for Teachers</u> , Hong Kong, The MacMillian Press Ltd. PP.106-126	5-8
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## 5.11 ASSIGNMENTS

Assignments are of immense educational utility as they seek to demand thinking on the part of children, advance the ideals, arouse and deepen the interests, enlarge the outlook and lengthen the happy moments of their life.

The advantages of the assignments are that they afford the children an opportunity to plan and do their work unaided, stimulate a desire for voluntary study help revision and consolidation of the school work, develop lasting interests, train in the profitable use of leisure, assist in resisting distraction, sublimate their instinctive tendencies and foster in them the moral traits of initiation, self-reliance and self-direction.

The disadvantages of these devices are that they may very easily become overburdensome and imposing enough to leave no time for recreation or hobbies, deprive children of their social life, strain considerably and create weariness and fatigue. Continuing school work may ever transform children into book-worms and lead to boredom and lack of initiative to induce taking help from others.

The teacher should bear in mind that assignments are not merely mechanical but correspond to the application stage of the lesson and offer every encouragement and motivation for work and that their nature and amount is in accordance with the children's capacities and interests. The teacher should necessarily coordinate the assignments in various subjects so that the child may do it conveniently leaving enough time for recreation, domestic work and other social activities, and he should also be careful that neither much work is set for holidays as change is very necessary nor the assignment is set as a punishment in any angry mood because this would create hatred for studies which may even become lasting.

The teacher should make sure that the corrections are made soon after the written work is completed, preferably by the child himself and in his presence, but sometimes mutual corrections may also be encouraged to the child's advantage. He should not correct several types of mistakes all at once but indicate them according to the developmental stage of the child and should vary his remedial measures in accordance with the nature of the mistakes.

For further details, please read the below referred material.

S.K. Kochhar (1990)	<u>Methods and Techniques of Teaching</u> , New Delhi, Sterling Publishers Private Limited. PP.358-364.	5-9
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## 5.12 ACTIVITIES

1. Please visit any college of education/school and observe the lecturing technique being used in the classroom by the teacher and prepare a report of your impression about the method.
2. Write below any two salient features of laboratory method.

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3. Discuss with any educationist about the usefulness of project method and prepare a report of the outcome of your discussion.

4. Write below any four methods and techniques which you consider are more effective in the situation of Pakistan.

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### 5.13 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1      Discuss the significance of lecture method in teaching-learning process.
- Q.No.2      Give suggestions on how to make lecture method more effective and efficient in teaching.
- Q.No.3      Explain the importance of discussion method.
- Q.No.4      Discuss the advantages and disadvantages of discussion method.
- Q.No.5      "Demonstration method is more effective in teaching-learning process, if applied carefully". Discuss the statement and support your answer with examples.
- Q.No.6      Critically examine the demonstration method in teaching-learning process.
- Q.No.7      "Heuristic method is effective in teacher education". Discuss.
- Q.No.8      What steps are involved in heuristic method? Explain.
- Q.No.9      Critically examine the usefulness of project method in teacher training.
- Q.No.10     Discuss the activity method being used in teaching. What are the limitations involved in this method?
- Q.No.11     Give an account of the advantages and disadvantages of activity method.
- Q.No.12     "The method provide learning by doing and proved to be quite successful in developed and developing countries". Discuss



- the statement with reference to laboratory method.
- Q.No.13 What is the importance of asking questions in teaching?
- Q.No.14 How many types of questions can be asked? Give examples of multiple choice question.
- Q.No.15 Discuss the main characteristics of good questions.
- Q.No.16 "Good questions have importance in an effective teaching. A person learns properly from them and the lesson too goes on logically". Explain the statement by giving examples.
- Q.No.17 Write down the limitations of questioning in teaching.
- Q.No.18 Critically examine the importance of assignments in teaching.

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UNIT - 6

SIMULATED TEACHING

BY  
PROF. DR. MUHAMMAD RASHID

## Unit -6

### SIMULATED TEACHING

Introduction

Objectives

Managing of simulated teaching

Advantages of simulated teaching

Characteristics of simulated teaching

Assumptions of simulated teaching

Procedures of simulated teaching

Limitations of simulated teaching

Activities

Exercise

Bibliography

## 6.1 INTRODUCTION

The word 'Simulated' means to imitate exactly. Interest is aroused in the pupils through 'Role Playing' while teaching. This skill is used by teachers and pupils in the classroom by playing some role without any preliminary training i.e. extempore or without any rehearsal. So, it can be safely concluded that simulation is a form of Role playing wherein pupil-teachers display this skill spontaneously.

In the simulated teaching method, the pupils are only acquainted with the conditions. Therefore, they discuss and go ahead with the subject matter. Groups of four or five pupils are made in such a method.

Simulated teaching has recently entered the field of education. It is used at different levels of instruction. The teacher is trained practically and also imparted theoretical learning. The pupil teacher needs to be trained in simulated situations before sending him to the school for teaching practice. He has to play the role of teaching in artificially created environment. After that he should be sent to the school. In this way the teacher will be able to teach in an excellent manner.

Simulated teaching is the technique of learning and training, which develops the ability in an individual regarding problem solving behaviour. It has been defined as a role playing strongly in which learner performs the role in an artificially created environment.

Simulated play is an area in which specific communication skill is developed or educational process is carried on in artificially created situations. Simulation skill which is a form of role playing is used in the subject of history, science and literature. Imitation is done or some role in play with the help of various teachers.

\* Dr. Stone has pointed out the significance of this method in the following words.

"Simulation on techniques for all their artificiality can often be preferable to putting students in classroom to learn on their

own or lecturing to them in classroom. In other spheres, pilots trained in the artificial circumstances of the link trainer or driving schools have their traffic simulators and the medical students their cadavers. And this is eminently sensible. By the same token classroom simulation removes the risk from the first steps of a new type and enable him to come to terms with demand of a complex skill learning without the stress of the real situation. At the same time it is to be preferred to merely 'telling' the student, for much the same reason as it is better to allow beginning pilot to practice operating the dummy controls rather than telling him how to do it when he finds himself in the air".

Therefore, it is clear that a pupil cannot become successful teacher till he acquires the teaching skill though 'role playing' in the classroom e.g. soldiers are put to face and fight artificial war. Stone has cited the example of a pilot under training who is made to face and pass through all the conditions, which he has to face in the air in artificially aircraft model in Air Force Training centre. "The pilot should be this, should do that" has no practical value. He is trained to understand and to control his problems in artificial air craft model. Same is the position of a teacher. Instead of telling him does and do not he should be put to simulation or role playing so that he could prove to be a successful teacher. Therefore, following the parts of simulation:-

- i. Solo-acting
- ii. Mimic
- iii. Development of expression
- iv. Development of all aspects
- v. Emotional organization
- vi. Bodily expression.

## 6.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the concept of simulated teaching;
2. identify the advantages of simulated teaching.
3. appreciate the characteristics of simulated teaching.
4. explain the assumptions of simulated teaching;
5. specify the procedures of simulated teaching; and
6. analyse the limitations of simulated teaching.

### **6.3 MEANING OF SIMULATING TEACHING**

Simulation means role-playing or rehearsal in which the process of teaching is carried out artificially. It is based on socio-drama. The main aspect of simulation is the introduction of a student-teacher to teaching in a non-stressful conditions.

Simulation can be defined as: "Mechanism of feedback devices to induce certain desirable behaviour among pupil-teachers by role-playing of the teacher in their own group as an artificial situation of classroom teaching".

According to Webster's Dictionary, "Simulation is defined as giving the appearance of or effort of, to have characteristic".

According to Tansey, "Simulation in the all inclusive term which contains these activities which produce artificial environments or which provide artificial experiences for the participants in the activity. It is reproduction of the reality."

According to Fink, "Simulation is the controlled representation of reality."

For further details, please read the below mentioned material.

Chauhan, S.S. (1992)	<u>Innovations in Teaching Learning Process</u> , Delhi, Vikas Publishing House Pvt Ltd. PP.120-121.	6-1
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#### 6.4 ADVANTAGES OF SIMULATED TEACHING

Cruick Shank has described the following advantages:

- i. Student-teachers are helped in a variety of ways through simulated training. It helps in developing self-confidence among them.
- ii. This technique helps in linking theory with practice of teaching.
- iii. Student-teachers are given an opportunity to study and analyse critical teaching problems.
- iv. Student-teacher understand the behavioural problems of the classroom and develop insight to encounter them.
- v. Simulated training provides feedback to student teachers to modify their behaviour.
- vi. It helps in developing social skills like social manners and etiquettes among the student-teachers.
- vii. There is self-monitoring in simulated-training. It reinforces the student-teachers for the desired behaviour.
- viii. It helps in developing efficiency in student- teachers and in predicting consequences of teaching before going to actual classroom
- ix. As a result of role-playing, it helps in the development of critical thinking in student-teachers.



For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, P.345.	6-2
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## 6.5 CHARACTERISTICS OF SIMULATED TEACHING

There are three important characteristics of simulating teaching.

- i. Simulated teaching implies an analysis of teaching act and of the teaching situation from the point of view of the learner.
- ii. It is plotting of the real situation and capturing the essential which forms part of it.
- iii. It is dependent upon empathetic understanding of the reality content on the part of participant, the practising teacher.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, P.344.	6-3
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## 6.6 ASSUMPTION OF SIMULATED TEACHING

- i. Teacher behaviour is modifiable by the use of feedback devices.
- ii. There are certain social-communication skills of teacher behaviour

which are essential for effective teaching. These social skills should be modified by feedback device.

- iii. Through role playing, the psychological appreciation of the classroom problems will grow and develop in the pupil-teacher a basis for handling the problem in the class.
- iv. Teacher behaviour has its taxonomy which is developed by Karl Openshaw - by using simulated teaching technique.

For further details, please read the below mentioned material.

Vedanayagam, E.G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publishers, Private Ltd. P.78.	6-4
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## 6.7 PROCEDURE OF SIMULATED TEACHING

Simulated teaching is usually used in teacher-education. It is employed before sending the pupil-teachers to actual teaching. It helps in developing social-skills among pupil-teachers. According to Cruick Shank, pupil-teacher has to play three roles: 1. the teacher, 2. the pupil and 3. the observer, and there are three elements in simulated training technique: 1. Diagnosis, 2. Prescription, and 3. Evaluation.

Every element has its own importance in the process. At first the teacher makes effort to understand the learners. At this stage he becomes aware of the weakness, attitudes and preferences etc. and suggest student to learn accordingly. At this stage the teacher has to satisfy himself that the subject matter is useful for the student. After that he adopts the appropriate method to impart education to the students. Finally, evaluation is made if reveals the success or failure of the teachers and also the weakness and achievements of students.

## TEACHER TRAINING AND SIMULATING

Simulated play technique of teacher training is very important technique. The following are the simulated environment:

- i) Demonstration lesson
- ii) Discussion lesson
- iii) Teaching Practice

For all the above teacher training colleges have to depend on schools. No doubt it is possible only in simulated environment schools are must for making the teacher successful. We have to face the following hurdles in the above practice.

- i. Schools are required for teacher training programme. They depend upon schools. It is important how much the schools cooperate in this work. The officer dislike it from the core of their heart. There are certain principals who are straight forward in expression and say that the like it and thus happy to cooperate.
- ii. It is an injustice to the students of the schools wherein teaching practice is being carried on by the teacher training colleges. Teachers are only trainees. Their teaching methods are not matured. It may be of a very poor quality. So the students are the least benefitted learners feel it as the wastage of their time.
- iii. There should be sufficient training for teaching. Teaching practice for certain days is only phoney. It is not sufficient. Simulated teaching helps to some extent in teacher training. The officers concerned with the training programme can create artificial situations in their own colleges and universities and they can complete major portion of teachers training and teaching practice in their own colleges, where schools and their students are not involved. The teachers trainees can be sent to schools when they are perfectly aware of the teaching methods and techniques, so that they may achieve success in the real class room situations, for its successful implementation:

Cruikshank had done exercise in presentation of this skill through 31 types of acting in teaching, which could not be used as additional skills in teaching process.

- i. The participant pupil have to teach in the class by playing the role of a new teacher.
- ii. The role player teacher is given prior knowledge of the problems.
- iii. The participants are informed about the possible solutions of problems.
- iv. The participants are given opportunities to become observers.
- v. Situation is presented with the help of film strips.
- vi. Participants come forward with fresh suggestions in the class room itself.
- vii. Analysis is attempted through discussion done by the participants.
- viii. The objectives are also re-examined on the basis of discussion of participants.
- ix. The participants record responses of the situation on incident Response Sheet which are later on analysed.
- x. The participants are given knowledge of 31 problems, 10 of which are presented in the actual context through film strips and the remaining through role playing.

### **Steps in simulated teaching**

Ned A. Flanders has recommended the following six steps in simulated teaching:-

**Step I: Assigning the roles:** In this step, the pupil-teachers are assigned the roles of teachers, student and observer respectively. The student-teacher has to play all three roles one after the other.

**Step II: Deciding the skills to be practised:** After assigning the roles, certain social skills are discussed which are to be practised by student-teachers. That particular skill is decided which is to be practised. Then, planning and preparations are made for practising the skill. Each student-teacher has to select a topic of his interest.

**Step III: Preparation of Work schedule:** At this stage details of the work-schedule are prepared. It is decided who will start the teaching first, who will observe the lesson and who will intervene the conversation?

**Step IV: Determining the Techniques:** The procedure and techniques of observation are decided i.e. how different type of data is to be observed and how it is to be recorded. The procedure for the interpretation of the data is also to be decided.

**Step V: Organizing the first practice lesson:** The schedule is followed for the first practice session. Teaching is organized and observations are made for evaluating the teaching task of the actor. Observation is followed by discussion, leading to feed-back appreciation and suggestions for the improvement of social-behaviour.

**Step VI: Alternation of procedure:** Now second practice session starts by changing topic, roles and social skills. Every pupil-teacher is given the chance to play the role of a teacher, a student and an observer.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.343-344.	6-5
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## 6.8 LIMITATIONS OF SIMULATED TEACHING

- i. In simulation, role-playing is done in artificial situations which are unpsychological and unpracticable.
- ii. Simulation is like socio-drama or sort of gaming, which reduces seriousness of learning.
- iii. No emphasis is given on teaching skills or content-taught. only the social behaviour is considered.
- iv. It requires the supervision by training personnel which are generally not available or not devoted to their duties.
- v. Simulation attempts to portray the real situations in a simple way, which in general, are very complex and difficult.

For further details, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, P.344.	6-6
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## 6.9 ACTIVITIES

1. Discuss the advantages of simulated teaching with any educationist of your area and prepare a report of the outcome of your discussion.

2. Draw below a diagram indicating the assumptions of simulated teaching.
3. Write below any three limitations of simulated teaching.

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## 6.10 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1      Discuss the concept of simulated teaching.
- Q.No.2      "Simulated teaching proved to be very successful in certain countries. It is also equally useful in Pakistan". Discuss the statement and support your answer with examples.
- Q.No.3      Explain the various advantages of simulated teaching.
- Q.No.4      Critically examine the characteristics of simulated teaching.
- Q.No.5      Describe the assumptions of simulated teaching.
- Q.No.6      Discuss procedures of simulated teaching. Give examples in support of your answer.
- Q.No.7      What are the limitations of simulated teaching? Explain.



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UNIT - 7

INNOVATION IN TEACHING

BY  
PROF. DR. MUHAMMAD H. SHIH

UNIT-7            INNOVATIONS IN TEACHING

- 7.1    Introduction
- 7.2    Objectives
- 7.3    Micro teaching
- 7.4    Computer assisted instruction
- 7.5    Team teaching
- 7.6    Personalized system of instruction
- 7.7    Modular approach
- 7.8    Multi-media teaching
- 7.9    System approach

RASI

## 7.1 INTRODUCTION

Innovation is the introduction of a new idea, a process or technique and its adoption for wide spread use to replace an existing practice or technique. It is not a change for the sake of change. It is controlled and regulated by testing and experimentation. There is first invention or research, then its testing out, education and development, diffusion and lastly adoption for use. An innovative approach therefore, and awareness of inadequacy an existing practice or technique, an attitude of searching for new ideas, a willingness to test them out and put them to use (Unesco Conference 1971).

According to H.S. Bhole, an innovation is a concept, an attitude, a tool with accompanying skills, of two or more of these together introduced to an individual or culture that have not functionally incorporated it before.

The characteristics of an innovation are as under:

- i. Innovation is regarded as a new idea.
- ii. Innovation is considered qualitatively superior to the present situation.
- iii. Innovation is a deliberate effort.
- iv. Innovation is a planned effort.
- v. Innovation has an element of specificity.
- vi. Innovation has functional utility.
- vii. Innovation is a configuration of ideas.
- viii. Innovation results in new resources of learning.

It is very difficult to give a definition of change. It is very nearly an underdefined primitive term. It generally implies that between Time I and II some noticeable modification has taken place in the goals, structure or a

process of system.

Two terms change and innovation are interdependent. Innovations in education are adopted for bringing qualitative improvement and the bases for educational change is the innovation or creative idea of an individual. Innovation may be regarded as a species of the genus change.

Norman Mackenzie has describe the following new resources for learning:

- i. Television.
- ii. The language laboratory.
- iii. Computer managed instruction.
- iv. Programmed learning.
- v. Teaching machines.
- vi. Tele-conferencing.
- vii. Videotax and teletax.
- viii. Interactive video disco.

## 7.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the significance micro teaching in teacher education;
2. explain computer assisted instruction;
3. describe the role of team teaching;
4. analyse the significance of personalized system of instruction;
5. appreciate the modular approach in teaching;
6. discuss the role of multi-media teaching; and
7. explain the usefulness of system approach.

### 7.3 MICRO-TEACHING

Concept of micro-teaching originated in 1963 at Stanford University, USA by a group of researchers Allen, Dwight, Rayan, Kevin as an effective teacher training innovation, principally to complement student-teaching.

#### Meaning and Definition

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

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

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

B.K. Passi and M.S. Lalita "Micro-teaching is a training technique which requires student-teachers to teach a single concept, using specified teaching skills to a small number of pupils in a short duration of time."

#### Characteristics of Micro-teaching

- i. Micro-teaching is a real teaching.
- ii. It reduces the complexities of normal classroom teaching.
- iii. It is an individualized teacher-training programme
- iv. It provides the feedback for the trainee's performance.
- v. It is a training programme for preparing effective teachers.

- vi. It focusses on the training for the accomplishment of specific teaching skills. One skill is practised at a time.
- vii. High degree of control is attained in this device.
- viii. It is an analytical approach to teacher-training programme.

### **Concept of Micro-teaching**

Micro-teaching is a simple feedback device which applied an instructional systems approach and principles of observational learning to train specific teaching skills.

Principles of observational learning are taken from Bandura's Theory of Social Learning. It is governed by four components processes:

- i. **Attending:** It refers to selective perception of significant features of models by the observer i.e. by the student-teachers.
- ii. **Retention:** It refers to maintenance of significant features attended, in permanent memory in symbolic form of patterns.
- iii. **Motor reproduction:** It refer to translation of symbolic patterns into action or their use as guide line for action.
- iv. **Motivation:** Positive or negative reinforcement is given for acting modelled behaviour.

Micro-teaching involves trainees in scaled down teaching in terms of teaching task, class-size, length of lessons, and time with a provision of feedback information about their teaching performance.

"Micro-teaching training format" consists of three phased sequence:

Phase I : Modelling or Knowledge Acquisition Phase

Phase II : Practising Skill Acquisition Phase

Phase III: Feedback or Transfer Phase.



### **Phase I : Knowledge Acquisition Phase**

It is also known as modelling phase. Student-teacher is kept in conditions where he observes model teacher who emits the teaching behaviour to be learned. According to Allen and Ryan (1969), inclusion of modelling in micro-teaching before actual practice is a pragmatic approach which foster the skill learning in student teachers.

According to Bandura's theory by observation is said to occur through informative function of modelling.

### **Phase II : Skill Acquisition Phase**

It is also known as practising phase. Student-teachers are given an opportunity in real classroom situations but scaled down, to practice the same behaviour or skill.

### **Phase-III : Transfer Phase**

It is also known as feedback phase. Student-teachers are reinforced for those instances of desired behaviour they have emitted and have provision for feedback for developing the desired behaviour or skill up to the mark.

### **Assumptions of Micro-teaching**

Micro-teaching is a technique for modifying the teacher behaviour. It is based on certain assumptions:

- i. Teacher behaviour is observable.
- ii. Teacher behaviour is quantifiable
- iii. Teacher behaviour is modifiable.

## Micro-teaching as a Feedback Device

### Concept of Feedback:

Feedback is a mechanism, a concept of cybernetics (physical science), which helps to bring desirable changes at the right points in the student-teacher and to maintain them. It also refers to the communication of information about the performance of learners. Feedback is a concept of control, it is also known as correcting function.

Wiener compared the function of control with the function of steersman of a ship.

Concept of control is known as feedback or servo-mechanism or circular system and circular process. Basic idea behind this concept is self-regulation of purposive behaviour.

Feedback has two system:

- i) **Closed loop system:** It is mainly used in education.
- ii) **Open system:** It is again of two types:
  - (a) S-R classical conditioning: It is required where response is elicited.
  - (b) R-S Operant conditioning: It is required where response is emitted followed by reinforcement.

### Advantage of feedback in micro-teaching

According to Ausubel & Robinson:

- i. Feedback provides information about performance to student-teacher, which corrects errors, clarifies misconceptions and indicates relative adequacy with which the teaching skills have been mastered.

- ii. It gratifies cognitive, affective and ego-enhancing drives and increases the probability of action recurring.
- iii. Student-teacher develops confidence in his learning products and focuses his efforts and attentions on those aspects of a task requiring further refinement.

According to Perlberg and Fastinger: "Feedback helps the student-teacher to identify discrepancy between actual and desired performances. This discrepancy creates tension, dis-satisfaction and anxiety which motivates the student-teacher to bring equilibrium between actual and desired level of performance"

### **Feedback in Micro-teaching**

In micro-teaching three major areas of feedback were identified:

- i. **Effects of video-tape and audio-tapes:** In micro-teaching, video and audio tapes were regarded as powerful tools in bringing behaviour change.
  - (a) By providing accurate and exact feedback for self-evaluation very reliably and objectively.
  - (b) By providing a common frame of reference for supervisors and student-teachers to focus on specific behaviour emitted during teaching practice.
  - (c) By helping to depersonalize so as to develop confidence in student-teacher.
- ii. **Effects of supervisors during feedback:** Griffiths has described three broad roles of supervisor as observer:
  - (a) Supervisor provides feedback (during shaping of behaviour informations upto what degree, the modelled behaviour have been performed.

- (b) Counselling role of supervisor to adjust the trainee's current psychological state during practice in actual classroom situation.
  - (c) Supervisory role in critique situations the skill acquirement by informing the student-teacher his weaknesses and strengths. Identification of weaknesses provides feedback while strengths provide reinforcement.
- iii. **Relative effects of modelling and feedback:** According to Bandura & Mc. Donald, modelling alone had more effect on trainee behaviour than feedback. Modelling is very effective in transmitting new response pattern whereas feedback is effective in maintaining and strengthening those response acquired through modelling.

A combination of trained supervision and play back facilities provide a powerful means of feedback. Self-analysis and self-evaluation done by trainee and supervision-led-discussion result in effective learning of skills.

### **MICRO-TEACHING IS AN IDEA HAVING FIVE PROPOSITIONS AS ITS CORE**

- i. Micro-teaching is a real teaching when student-teacher and teacher-educator work together in a practice-teaching programme.
- ii. It reduces complexities of normal classroom teaching i.e. it is scaled-down teaching.
- iii. It requires one particular-skill to be performed in particular unit or lesson plan i.e. it is a component-skill approach.
- iv. It provides observation and supervision under internship of an experienced teacher

- v. It provides feedback dimensions in teaching.

### **!MICRO-TEACHING AS A COMPONENT SKILL-APPROACH**

Teaching is a composite of skills. There are some of the teaching skills that should be developed in student-teachers to make them effective teachers.

- i. Introduction of the topic, helps in clarifying purpose of instruction and using students' previous knowledge & skills.
- ii. Fluency in asking questions
- iii. Probing questions
- iv. Higher order questions
- v. Divergent questions
- vi. Dealing with answers
- vii. Stimulus with answers
- viii. Silence and non-verbal cues
- ix. Reinforcement of students participation
- x. Illustration of blackboard
- xi. Use of black board
- xii. Lecturing
- xiii. Explaining
- xiv. Group discussions

xv. Planned repetitions

xvi. Teacher liveliness

xvii. Closure

i. **Introduction of the topic:** It helps in clarifying purpose of instruction and using students' previous knowledge and skills. It may take the form of presenting a problem, a demonstration, a recitation or story-telling.

ii. **Fluency is asking questions:** If not, this way cause discontinuity in the development of the lesson.

iii. **Probing questions:** Result effective learning.

iv. **Higher order question:** Due to individual differences, a student-teacher must be able to frame higher order questions for intelligent students so that they also take interest in the lesson.

v. **Divergent questions:** These questions may help:

(a) to test the previous knowledge of students about the topic.

(b) to test if they could recall something.

(c) To test if they could recognize something.

(d) to test if they could analyse the problems.

(e) To enable them to reason about something.

(f) to enable them to apply their knowledge to a specific problem.

vi. **Dealing with answers:** Answers given by students may be:

- a) Fully correct.
- b) Completely incorrect.
- c) Partly correct and partly incorrect.
- d) May be only a part of the answer

vii. **Stimulus variations:** Movement of teacher from one place to another gestures of head, hand, body pausing during a lesson, changes in speech pattern intensity of sound or light are the stimulus variations.

viii. **Silence or non-verbal cues:** Smiling, nodding one's head, frowning, raising one's hand.

ix. **Reinforcement of students' participation:** It may be verbal or non-verbal.

**Verbal:** Positive reinforcement may include remarks like "Good, Fine, Excellent, Nice". Negative reinforcement may include remarks like "No, Wrong, Poor, etc."

**Non-Verbal:** 1. holding and smiling. 2. Moving towards pupil to show approval. 3. Giving a friendly look. 4. Writing pupil's response on blackboard. 5. frowning. 6. Annoyance.

x. **Illustrations and examples:** To motivate student and make their understanding clear.

xi. Use of black board.

xii. **Lecturing:** Least desirable in student-teaching.

xiii. **Explaining:** Use of teaching aids, demonstration/ examples/ illustrations.

- xiv. **Group discussions:** For involvement of students. It results in effective learning.
- xv. Planned repetition of newly taught subject for maximal learning.
- xvi. Teacher-liveliness through establishing rapport with his student.
- xvii. **Closure:** It is of two types:
  - (a) Instructional closure: attempted at the end of the lesson.
  - (b) Cognitive closure: attempted for checking whether students have understood all important matter

## ELEMENTS OF MICRO-TEACHING

### (I) DECISIONS

(a) Primary decisions (b) Secondary decisions

#### Primary Decisions

- Is purpose of Micro-teaching to train people in already identified skill?
- Is micro-teaching used as a research tool to identify technical skills of teaching?
- Is micro-teaching used to investigate other aspects of teaching?
- Who is to be trained through micro-teaching?
- How will student-teachers use the training of micro teaching?
- How will the teaching skills are practised in student-teachers?



## Secondary Decisions

- Who will supervise the lessons in micro-teaching?
- What will be the class size of micro-teaching?.
- What will be the duration and what types of feedback will be required?

## (II) STRUCTURE

Based on decision, the structure of micro-teaching is built. The following principles must also be followed:

- a) Human factors are taken into consideration. Alternative arrangements should be planned against sickness, the coming and forgetting appointments.
- b) Schedule of micro-teaching should not be very tight otherwise it will lead to tiredness.
- c) Observing punctuality towards the schedule. If one lesson delayed, other should start on time

## (III) PATTERNS OF TRAINING

(a) **The Micro-lesson:** 5 minutes duration. Supervisor observes the lesson which is video-taped. Rating forms are given to other students for their reaction about the lesson and the supervisor for his comments.

(b) **The micro-class:** It comes after few weeks of micro-lessons when student-teacher has practised some basic skills of teaching. Micro-class is organized at team-basis. Team of three or four student-teacher is there, each teaching a unit of his own field. Each micro-lesson is taught for 20 to 25 minutes. Microclass takes full one hour.

Teaching is followed by 30 minutes of group discussions. Frank criticism and suggestions are given to student teachers.

**(c) Research clinical sessions:** Training is conducted under strict experimental conditions: "Student-teacher teaches five minutes lesson --- Teaching is video taped --- video tapes are used for experiments --- Student-teacher views the Model tape --- Observes his initial performance --- Reteach the lesson to practise the model skill."

This cycle is repeated till perfection in skill is acquired.

**(d) The supervisor:** The supervisor should be provided the following learning experiences:

- Explanation and discussion of component skills approach to teaching.
- Exploration of rationale & benefits of focussing on individual skills.
- Explanation of various strategies and techniques of supervision.
- Knowledge of teaching skill and developing ability to make up the curriculum of micro-teaching.
- He should help student-teacher to develop ability to perform a skill.
- He should help student-teachers to learn when & where the skills are used.

## OPERATIONS IN MICRO-TEACHING

- i. Analysis of a skill in behavioural terms i.e. objective of the skill should be clear.

- ii. A demonstration of the skill on videotape or films, or in normal classroom teaching
- iii. Trainee plans a short lesson in the subject of his interest in which he can use the skill.
- iv. Trainee teaches the lesson to a small group of students (5-10) which is observed directly or videotaped or audiotaped.
- v. Feedback is provided to trainee on discussion and analysing his performance with the help of supervisor. If the skill has been used effectively, trainee is reinforced and if there is any drawback, the skill would have been exercised by giving remarks to him.
- vi. Feedback or supervisor's remarks develop insight in the trainee. He replans the lesson to use the skill more efficiently.
- vii. Revised lesson is retaught to different but comparable groups.
- viii. Feedback is again provided on retaught lesson which is analysed with the help of the supervisor.

### STANDARD PROCEDURE OF MICRO-TEACHING

Dr. L.C. Singh (NCERT) has recommended the following steps in micro-teaching in Secondary Teaching Education in India in his "Micro-Teaching - An innovation in Teacher Education".

**Step I Orientation:** Theoretical background, merits and demerits of micro-teaching among Teacher educators and students teachers may be arranged.

**Step II Discussion of teaching skills:** Concept of teaching skills should be cleared. At least, five teaching skills should be selected & explained at length with the help of Hand books developed by CASE, Board. One skill at

a time may be discussed before practice.

**Step III**      **Presentation of model lesson:** Model lesson of corresponding skills is demonstrated by the trained-teacher educator in selected subjects to the student-teacher.

**Step IV**      **Presentation of micro-lesson plan:** Student teacher selects one unit for micro-lesson and prepare the lesson plan logically.

**Step V**      **Miro-teaching setting:** To set up micro-teaching, following variables should be taken into consideration.

- (a) Time : 36 minutes
- (b) Number of Student : 8-10
- (c) Supervisor (s) : one or two
- (d) Technique of feedback by supervisor(s): Video or audio or supervisor himself.

**Step VI**      **Simulated conditions:** Peers should act as pupils. Micro-teaching is conducted in the training college itself.

**Step VII**      **Practice of teaching skills:** At least 5 skills may be practised by a student-teacher at one time.

- (1) Probing questions.
- (2) Stimulus variation.
- (3) Reinforcement
- (4) Silence and non-verbal cues.
- (5) Illustrating with examples.
- (6) Encouragement pupils participation.
- (7) Explaining
- (8) Effective use of blackboard.
- (9) Set induction.
- (10) Closure.

All of five skills may be selected at one time.

- Step VIII**     **Observation of teaching skills:** Teaching skill is done by peers and college supervisors.
- Step IX**       **Feedback:** Immediate feedback is given to student-teacher. Tallies & rating by peer group and supervisors may be used for interpretation and feedback about the performance of student-teacher.
- Step-X**        **Teaching time:** Complete cycle of micro-lesson by a trainee will take about 35 minutes to be completed.

## ADVANTAGES OF MICRO-TEACHING

Traditional method of teaching and training fails to develop desirable teaching skills among student-teachers. Micro-teaching has evolved as an innovative practice in teacher-training. It has the following advantages:-

- i.     Micro-teaching is relatively simple and non-threatening because only one skill is selected for practice and number of student is hardly 5-10.
- ii.    Objectives of teaching are clearly defined in behavioural terms.
- iii.   There is a provision for immediate feedback to student-teacher.
- iv.    The teacher can experiment with several alternatives with a limited number of students each time with the opportunity for immediate evaluation and additional trials.
- v.     The student-teacher can concentrate on some specific aspects of teaching-learning.
- vi.    Micro-teaching is highly individualized technique.

- vii. Classroom interaction and communication can be objectively and easily studied.
- viii. Individual micro-lessons are observed by supervisor and suggestions are given for improvement. Facility of video or audio recording may also be provided.

### **MICRO-TEACHING IN TEACHER EDUCATION PROGRAMMES**

- i. Micro-teaching makes the teacher-education programme, more purposeful, goal oriented and helps to decide common objectives for the programme.
- ii. It provides individualized training with more realistic evidence to students. Which enables them to develop competency in using specific teaching skills in view of their unique needs.
- iii. It provides a democratic type of behaviour among faculty members and student-teachers.
- iv. It provides a facility of supervision which is not critical or threatening type but is of a helpful and suggestive type which equip them for transition to school teaching.

### **MICRO-TEACHING AND INSERVICE EDUCATION OF TEACHERS**

Still no or very little attention is being paid to train in-service teachers. There is an urgent need for inservice training to help the teachers to attain their full professional potential through orientation courses of education. Micro-teaching is one of the economical and effective means to improve use of skills and strategies and also to solve a number of problems which the teachers encounter in the schools. It provides motivation to teachers to improve their professional competence with the help of micro-teaching technique. Refresher courses can be organized for acquiring new skills and approaches with the help of micro-teaching.

## **UNIQUE USE OF MICRO-TEACHING IN SCHOOLS**

In view of knowledge explosion and new interpretations and the revision and review of the old and current theories in science, technology, social sciences and literatures, the continuous teacher education has become an imperative need of the day to make education more effective mean of social transformation. As a new curricula, new methodologies are developed, the pre-service or in-service teachers must be trained to develop new skills and to apply them effectively.

## **MICRO-TEACHING AND EDUCATIONAL RESEARCH**

Micro-teaching has an advantage to simplify the complexities of typical classroom situations and provides opportunities for real experimental control & manipulation of variables.

Three broad areas of conducting research in which micro-teaching is used:-

- i. The search for optimal teacher-training procedure for using within a micro-teaching setting.
- ii. More general researches on training procedures and human learning.
- iii. Systematic analysis of relationship between teacher-behaviour and student behaviour.

## **OPTIMIZING THE TRAINING VALUE OF MICRO-TEACHING**

- i. For investigating micro-teaching, systematic research design about optimal length of teaching session, optimal number of students should be developed.

Different time periods and different number of students should be used in different micro-teaching setting for obtaining optimal length of teaching and number of students.

- ii. For investigating its effect as feedback technique, what devices video or audio or supervisor, is more effective, should be identified.
- iii. For investigating its effectiveness over other teacher-training practices, its each component should be evaluated.
- iv. The effectiveness of various schedule of reinforcement in training particular skills can be investigated.
- v. The effectiveness of different verbal or non-verbal reinforces in the training of particular skills can be investigated.
- vi. Supervisor's attitude role and expectancy also affect micro-teaching, so it should be investigated.
- vii. How teacher's performance affect students' performance, can be evaluated in micro-teaching.

The above given points, if taken into consideration, will certainly help in optimizing the training value of micro-teaching.

## **TEACHING SKILLS**

Micro-teaching is used for developing certain teaching skills. There are various teaching skills which can be developed among student-teachers. A teaching skill is a set of teacher's behaviour which helps in bringing about desirable changes in student-teachers effectively.

According to N.L. Gage (1968), "Teaching skills are specific instrumental activities and procedure that a teacher may use in his classroom. They are related to the various stages of teaching or in the continuous flow of the teacher performance."

According to Daniel Linden Duke (1990), "The component teaching skills can be defined as a set of interrelated component teaching behaviours for the realization of specific instructional objectives."



According to Passi, B.K. ed. (1976) "Teaching skills are a set of related teaching acts or behaviours performed with the intention to facilitate pupils learning."

Allen, D.W. and Ryan, K. (1969), Stanford University, USA, described fourteen skills. Borg and his associates (1970) increased the number to eighteen. B.K. Passi, CASE, Baroda has given a test of twenty one skills while Jangira and his associates (1979) gave a list of twenty. Some of the teaching skills are described below:

#### i. Skill or Probing Questions

Probing questions is one of the simplest device, a teacher uses in his classroom teaching. Sometimes, students do not response correctly. In such situations, the teacher should go deep into the pupils, responses or probe into them by asking different types of questions for reaching to the correct response.

Component of the probing questions skills:

- a) **Prompting:** This technique is generally used in theater arts where some one from behind the curtain provides hints about the dialogue. In teaching, the teacher provides hints or cues to the student for achieving the desired response. It helps the student to encourage him for responding.
- b) **Seeking further information:** This technique is used when the student answers partially correct or gives incomplete answers. Further questions in form of what, why, and how are asked for seeking further informations from the pupils.
- c) **Refocussing:** Through this technique, the teacher refocuses the attention to the students on some key points or to compare the phenomenon with other phenomenon for similarity or contrast or for any other relationship. It helps in developing the understanding of the concept.

- d) **Redirection:** This technique is used in case of no response or incomplete response situations. In this case, the teacher asks the question to a number of students. Sometimes, lengthy questions are divided into small units and each unit is put to different pupils. This helps in seeking further informations from the students.
  
- e) **Increasing critical awareness:** When a teacher asks the pupils to interpret the answer meaningfully, then it is known as critical awareness. In this technique, the teacher asks the responding students critically that how can you justify your answer or why do you think so.

## ii. Skill of Narration or Learning

A teacher passes his ideas to the students through narrations or lecturing. Narration is an art which aims at presenting to the pupils through the medium of speech which should be clear, vivid, interesting, ordered sequence of events in such a way that students' minds reconstruct these events and keep them in their memory.

### Component of the skill

- a. Ability of initiate learning.
- b. Fluency in speech.
- c. Pace of the lesson.
- d. Use of audio-visual aids.
- e. Repetition of teaching points.
- f. Change in interaction.
- g. Simple, clear, easy language.
- h. Ability to close the lecturing.

These component skills are, then, rated on a rating of seven points through an observation schedule.

## iii. Skills of Introducing the Lesson or set Induction Skill

When a teacher begins to teach the new lesson, he introduces the

topic by using verbal and non-verbal behaviours, audio-visual aids and other appropriate devices for drawing the pupils' attention and interest towards the lesson to be taught. The success of the introduction of the topic depends on the following points.

- a. Teacher's experience and imagination.
- b. Previous knowledge of the students
- c. Problematic questions should be framed as per needs of the pupils and their maturity level.

#### **Components of the skill**

- a. Testing the previous knowledge.
- b. Asking problematic questions.
- c. Utilization of the past experiences.
- d. Motivation of the pupils.
- e. Pin-pointing the aims of the lesson.
- f. Use of proper devices.
- g. The capability of the teacher to motivate the pupils.

The components of the skill are rated on a seven point rating scale through observation schedule.

#### **iv. Skills of Explaining**

The teacher uses this skill to make the pupils understand ideas, concepts, formulas, laws etc. Explanation is just a few interrelated appropriate statements used by the teacher through verbal behaviour.

#### **Components of the skill**

- a) Selection of clear initial statements.
- b) Interrelating and using the selected statements.
- c) Fluency of the language.
- d) Proper use of audio-visual aids.
- e) Questioning audio-visual aids.
- f) Testing pupils understanding.

- g) Using appropriate concluding statements

#### v. **Skill of Reinforcement**

Reinforcement refers to the use of the techniques for influencing behaviour of individuals in positive direction. The concept of reinforcement is based on the hedonistic principle which envisages that an individual tends to repeat the pleasant experiences and avoid unpleasant ones.

Positive reinforcers are the stimuli which contribute to the pleasant experiences for strengthening the desirable behaviour. Negative reinforcers are the stimuli providing unpleasant experiences for weakening the undesirable responses.

Reinforcers may be verbal or non verbal. The skill of the reinforcement is the technique how effectively a teacher uses reinforcers to modify students behaviour in positive ways.

#### **Components of the reinforcement**

- a) Use of praise words including extra verbal cues like 'hm-hm', 'uh-uh', 'ah-hau.'
- b) Repeating and rephrasing pupil responses.
- c) Use of positive non-verbal reinforcers, (including extra-verbal cues like 'hm-hm', 'uh-uh', 'ah-hau'.) excluding writing pupils answers on the blackboard.
- d) Writing pupils' answers on the blackboard.
- e) Use of blame words.
- f) Use of negative non-verbal reinforcers.

For further details, please read the below referred material

S K Kochhar (1990)	<u>Methods and Techniques of Teaching</u> , New Delhi, Sterling Publishers Private Limited, PP 224-238.	7-1
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#### 7.4 COMPUTER ASSISTED INSTRUCTION

According to George Brown and Madeleine, A (1987):

"Computer Assisted Instruction has now taken on so many dimensions that it can no longer be considered a simple derivative of the teaching machine or of the kind of programmed learning that Skinner introduced. The teaching machine and the linear or branching programmes are to be sure, its immediate ancestors, but it has evolved rapidly."

The impact of the computer on education will be in the area of clerical and accounting efficiency because the great advantages of computer over other kinds of educational technology lies in the nature of the device it computes. Therefore, the computer provides a flexible presentation of materials to the learner and also keeps track of the progress of a number of learners at the same time.

It has three capacities:

- i. In a given subject area, it must have as it disposal a number of different programmes
- ii. When specifying a programme for each student, it must make use of the student's entering behaviour, general ability and personality characteristics.
- iii. It must be able to change programmes during the course of instruction.

Computer Assisted Instruction has the following three modes:

- i. The first mode is the tutorial drill and practice procedure which is an outgrowth of programme learning.
- ii. The systems developed by Atkinson and Suppes at Stanford is commonly used by teachers without the computer. The computer has the advantage of individualizing the activities and of introducing greater learning efficiency through the management of the learning by the computer.
- iii. Another method has been used in the teaching of statistics at the University California at Los Angeles. The student learns a computer language through which he can manipulate large bodies of data, and hence come out of the statistics course able to handle data.
- iv. Another use is in connection with games that stimulate actual problems whereby complex decisions in relation to metropolitan problems or political control systems can be made and their consequences studied.

The following devices are being used in Computer Assisted Instruction

#### **7.4.1 Visual Communication**

Ronald Gentile describes some of the following devices used in computer assisted instruction.

- i. Typewriter as a question under computer control and answer a question under student control
- ii. Film projection devices, on the basis of student responses, select films, present auditory and visual materials and automatically score students responses.

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- iii. Displays superimposed on films highlight certain excerpts on the films.
- iv. With Cathode-ray tubes a pen can be used for drawing curves or indicating answers on a screen. These answers can then be evaluated by a computer.
- v. Random-access slides and films are available. The area of auditory communication presents many unsolved problems. There are two devices developed for auditory communication. They are:
  - a) **Compiled Speech:** Here the computer has random access to pre-recorded phrases which can be arranged on the basis of student response. For example, the computer can tell the student a chemical formula.
  - b) **Synthetic Speech:** Here the computer uses a set of rules to convert stored speech, sound into meaningful speech patterns.

#### 7.4.2 Theory of Computer Assisted Instruction

CAI was developed on some sound assumptions. Therefore, it is popular in the training for different levels and areas of education. This instruction can be arranged for a large number of students with scope for maintaining quality and quantitative education. Computer based programmes provide the maximum amount of flexibility (flexible kind of branching including alternative parts and different examples for the students who may need them). Therefore, the learner goes at his own pace, receives immediate personalized feedback and freely chooses the content, sequencing and degree of difficulty of instruction. CAI has completely individualized sections.

In CAI the performance of the learner during the course of instruction and his performance on the test are automatically recorded. Therefore, his performance can be evaluated by the teacher enabling him to evolve or design the appropriate teaching strategy for the learner in future.



Any lesson material in any subject can be programmed for CAI with explicitly defining the strategy to be used and the lesson material to be presented in the form of words, pictures and experiments. Because of the variety and versatility, CAI serves as an effective educational tool to meet the varied problems of students on a sound educational basis. In advanced countries the introduction of CAI has created a fear in the minds of teachers that CAI will replace the people of the teacher and to some extent eliminate teachers from the teaching scene. From experiences it is found that the truth is otherwise, since CAI has become a powerful tool for the teacher in his instruction. The teacher has a changing role or play in the new technological society and goes out of his conventional assignment of delivering lectures alone. The teacher takes an active role. It is significant that CAI directly interacts with students individually and with the teacher. In the teaching learning process the teacher employs CAI as a tool to enhance the quality of the instructional process (followed by the teacher) and thereby CAI contributes more to the teaching-learning process.

### 7.4.3 Limitations

De Cacco and Crawford (1987) observed "considerably more progress has been made with the technical development of CAI than with the problem of writing instructional programmes. The chief unsolved technical problem is how to reduce the cost sufficiently to prevent bankruptcy of local schools. As in the case of the general development and use of the instructional media, the temptation has been to dazzle the student with an array of visual and auditory stimuli which serve more to impress him with the capabilities of a computer than to provide him with the necessary instruction."

- i. How to provide for individual difference is not specified clearly. The individual differences are varied in nature depending on the individuals. Therefore, all the differences cannot be accommodated by allowing the computer to generate sequences on the basis of student response.
- ii. We need a classification of individual difference variables especially in terms of learning variables

- iii. The expectation to eliminate the individual differences by any teaching method becomes unrealistic because of "prior differences in student verbal abilities and mental sets".
- iv. Adaptation to individual differences must prove to be superior to teaching which is aimed at the group mean.

#### 7.4.4 CAI and Evaluation

There are many appropriate approaches to the evaluation of educational endeavours, which are evolving in adding to the usual individual measurement approach. Scrivan, M. (1967, PP.59-83) states clearly that "As a matter of terminology, I think that novel terms are worthwhile here, to avoid in appropriate connotations, and I purpose to use the term "formative" and "summative" to quality evaluation in these roles. "These roles" refer to the role of evaluation in improving a course while it is still fluid-being developed and its role finding the worth of a completed product, course, text, instructional package, and so forth. Formative evaluation refers to a student's learning during a course, when changes can be made in the transactions of subsequent instruction on the basis of current attainment. Summative refers to evaluation of a student's assessment at the end of a course or topic or unit, that is, when no subsequent changes in treatment for that learning will be made, therefore, in the former, the focus is upon the alteration of a course or other unit during its development. It should be noted that the word "Formative" is not restricted to the meaning of assessing individual student learning in the on-going classroom.

A textbook author, a teacher in the classroom or a team of curriculum developers are called the 'developers'. Here CAI is an instrument for change. We know CAI is the result of the convergence of two technologies, programmed instruction technology and computer technology. The basis ingredients in CAI may be described briefly. A lesson to be taught is analysed in to the essential message to a student. These message maybe delivered through words, graphs, pictures of any combination. Some messages may be auditory. As materials are presented the student reacts to them by answering questions, working problem identifying points on a graph or objects in a picture giving examples, requesting more information or a change to review messages presented previously and so forth.

Depending upon the student's response, the computer presents the next messages in the lesson, additional messages, ideas given earlier, a review of earlier messages or additional 'developing' questions. These operations can be part of any programmed instruction. However, these operations are controlled by a computer in CAI. Therein lies the special application of CAI to formative evaluation. We know the computer can be used analyse data very rapidly. Besides, the same computer which controls the instruction can be used to collect information the following variables in the learner's responses.

- i. Length of time between presentation of questions and student-response
- ii. Request by the learner for review and material reviewed.
- iii. Request for additional information of examples.
- iv. Number of times the learner reviews an item or responds incorrectly after review.
- v. The computer can store in its memory any 'legal' move.
- vi. The computer can be requested to summarize such variables over students or sub-groups of students.

Consider an example of the CAI Lesson concerning the concept of their relation between volume and pressure in gases. Illustrations and definitions are presented. The student is asked to respond to some questions. He applies the concept to a problem. The students are progressing at different rates in reading the messages (words, pictures, graphs) and in responding to request. The computer keeps track for each student of each of the kinds of variables listed above. Then the computer can summarize the number of 'correct' or 'incorrect' responses across the students. The teacher has sub-grouped the students, for example, by vocabulary level of achievement or marks in science in the previous class, the computer can be requested to summarize each group separately.

We now have a description of every move by each student and a

summary for appropriate sub-group. The computer can then be commanded to show the relationship between moves by a given learner on different items. For instance, did he ask for review on the first problem but not on the second? Again, the computer can summarize such relations over sub-groups.

There are at present some CAI system in which the author can change materials in a lesson, the messages, the questions, and so forth through the use of one of the student stations with a special control. The mere collection of the group data would allow a classroom teacher or curriculum development team to revise lessons in a much better way than is customary today.

For further details, please read the below referred material.

Chauhan, S.S. (1992)	<u>Innovations in Teaching Learning Process</u> , New Delhi, Vikas Publishing House Pvt Ltd. PP.96-106.	7-2
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## 7-5 TEAM TEACHING

Another good innovation is team teaching. The idea originated in USA in 1954 and it found its way to developing courses. It is another thing that the idea was not well received in Pakistan. Any way, the idea of team teaching is worth giving a try.

Spanish defines it as "Team teaching is a type of instructional organization involving teaching personnel and the students assigned to them, in which two or more teacher are given responsibility, looking together, for all or a significant part of the instruction for some group students."

Another definition by an educationist run as follows, "In a team teaching method, two or more teachers make a plan of the subject or subjects cooperatively, carry it out, and always evaluate its effect on the students periodically."

David Warwick, (1972) defines team teaching as, "A team teaching, on the other hand, is a form of organization in which individual teachers decide to pool resources, interest and expertise in order to devise and implement a scheme of work suitable to the needs of their pupils and the facilities of their school".

The simplest form is all teachers of a subject collectively teach a class in that subject.

**Example:** There are 4 teachers of Educational Psychology in your college. All of them will teach your section the subject, they may divide topics amongst themselves. The senior teacher is a team leader.

The main ingredients of team teaching are:

- i) Scheduling
- ii) Grouping of students
- iii) Assigning specific teaching responsibilities to the teachers.
- iv) New building arrangements
- v) Independent study time for pupils.
- vi) Use of para professionals known as teacher-aids a person who assist the teachers and students.
- vii) Replacement of the centralized library with resource centres.

Characteristics features of team teaching include the following:

- i. **Economic Factors:** In traditional teaching, if a film is shown to six sections, it is projected six times. Team teaching would organize one or two shows and thus economise use of projector, bulbs, electricity and energy of the teachers.

- ii. **Structuring in the enthusiasm:** We teach those topics of the syllabus the best which we know best and for which we have a liking. This enthusiasms of the teacher be structured by say factual lessons in few large senior groups with adequate follow up in smaller groups.
- iii. **Development of staff:** How do we deploy the teachers in brain teaching? The deployment of teachers in done according to areas and methods in which they feel most at home.
- iv. **Experience centred work:** It means realistic field work of all kinds is undertaken on some afternoons an two or more members of the staff are involved in one project.

Thomas M. Risk lists the following hypothesis which underline team teaching:

- i. The best teachers in a school are shared by more students. (There is no clamour to change the section).
- ii. Teachers are provided with a schedule which allows time for better preparation and planning.
- iii. Teachers should have and can have, more exact knowledge of their students
- iv. The best teachers in any system are entitled to recognition.
- v. Teachers can grow and keep abreast of increasing knowledge.
- vi. Teachers do not plan and work in isolation, the team approach minimizes repetitions effort.
- vii. Students develop better study habits.
- viii. Flexibility permits grouping and regrouping of students.
- ix. The plan provides for flexible class size.

- x. Resource people from outside the school are more easily used.

### **Guiding Principles in Team Teaching**

The following principles in team teaching are significant.

- i) The size and composition of the group must be appropriate to its purpose.
- ii) The time allotted to any group must be appropriate to its purpose.
- iii) The learning environment must be appropriate to the activities of the group.
- iv) The nature and extent of the supervision of the group activities depends upon the purpose of the group.
- v) The duties assigned to teachers must be appropriate to their special qualifications and interests.

### **Factors Essential for the Success of Team Teaching**

You can yourself - guess, however, the list is as follows:

- i. Desire on the part of head of the institution that team teaching should be a feature of his school.
- ii. Cooperation amongst teacher comprising the team.
- iii. Planning who will teach which topic and when.
- iv. Availability of material and equipment.
- v. The acceptability of this approach on the part of the students. Sometimes, sections maybe combined for this purpose. The students should not resent or protest.

### **Merits of Team Teaching**

- i. The best teacher is shared by all
- ii. The school atmosphere improves. Students do not enjoy unnecessarily free periods.
- iii. It motivates teachers and students alike
- iv. In team teaching, resources (both men and materials) are better utilized.
- v. By observing each other, teachers improve their own working and methods of teaching

### **Demerits of Team Teaching**

- i. The worst teacher is shared by all.
- ii. Team teaching is against the spirit of education no pupil teacher contact develops. No self-realization takes place.
- iii. Everybody's responsibility is nobody's responsibility.
- iv. Our teachers are not favourably inclined. Unnecessary comparison be better avoided. It can give birth to jealousies and hostilities.
- v. Sometimes a teacher may fail to do justice to his topic.

Some more aspects in team teaching are as under:

### **Programming Work of Team Teaching**

- i. Lead lesson and follow up work are two basic concepts of team teaching. A lead lesson serves as a key presentation bringing together the full group or a large section ensuring continuity. Since it precedes the follow up work (the work that follows the



lead lesson), it must have impact drive and variety.

- ii. So far it has been assumed that following work will take place within the conventional frame work of classes or forms. Under this kind of organization, each team member is responsible for a group of 36 children. He deals with the material of lead lesson in any way as long as he keeps within the broad frame work provided by those responsible for that particular part of the course

### **Textbooks and Library**

New types of textbooks have to be used for team teaching. Conventional books may have no use. Treatment of material in the book for team teaching need to be fairly open ended, lending itself to various approaches, raising points for discussion or directing attention to possible local evidence for the material in question. These can be used in a variety of ways. In themselves, they form the basis of a project for an individual, a group or a class.

### **Work Cards, Work Sheets and Questionnaires**

These play an important role in follow up work.

### **Material for children use**

For the children's work, loose leaf files or folders are far more suitable than the traditional kind of exercise book, because rearrangements will be required during work.

### **Tape recorder**

Tape recorder can be used in lead lesson. Within the class room, it can used for follow-up work in several different ways of recording:

- i) Group discussion
- ii) Interview etc.

For further details, please read the below referred material.

S.K. Kochhar (1990)	Methods and Techniques of Teaching. New Delhi, Sterling Publishers Private Limited. PP.239-245.	7-3
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## 7.6 PERSONALIZED SYSTEM OF INSTRUCTION (PSI)

Personalized system of instruction is another innovation in the teaching-learning process. It has been realized that individualized instruction is better than collective or group instruction. Personalized system of instruction course is an interesting and rewarding job; at the same time it is not difficult. It utilises conventional classroom facilities. It does not require elaborate physical plant. It easily adopts to the time provision in traditional courses 3 hours per week for actual 26/28 weeks a year for an annual course and proportionately for semester and trimester courses. It relies on traditional texts. However, other hardwares and softwares of educational technology can be used. On the contrary individualizing instruction has not become popular because of the inherent advantages of collective instruction and the disadvantages of the known methods of individualized instruction. We are aware that the individual instruction movement was started in the fifties. This movement was totally against the group oriented and teacher-centred methods of teaching which had not provided to make up the defects and deficiencies due to the individual differences in learning. There are five popular methods using the principles on individualizing instruction:

- i. Personalized system of instruction.
- ii. teaching machine.
- iii. Computer assisted instruction.
- iv. learner-controlled instruction.

The advantages of collective instruction are retained to a great extent in the personalized system of instruction. The PSI or the self paced studies was first originated by Lawton, Denis (1981). The Keller Plan is self-paced, master-oriented, student-tutored for college level instruction. It is felt that Keller plan is definitely a better approach to learning than the conventional spoon-feeding method of classroom lectures. Keller plan is a sequence of three step of cycles of learning process with presentation, response and consequence arranged in such a way as to optimize learning between the extremes of programmed instruction and a semester plan lectures. The course content is divided into about 12 to 20 units. The student is expected to master unit by unit at his own pace. The student first gets the unit-1 along with the study guide. The study guide was prepared by the teacher. It gives explicit objectives which the student has to achieve. When the student has achieved the objectives, he will take the unit test.

In this system the course content is divided into a number of units which can be mastered by the students in about a week. All the behavioural objectives in that unit is assessed by a test of duration 20 to 25 minutes and scoring of the same is done in 5 minutes. The learning materials for each units are textbook and study guides

The following is structure and organization of a study guide: instruction of each unit, behavioural objectives, procedure, text supplement and test questions. The procedure consists of the following what to read, where to look to, where rote learning is necessary and where comprehension is necessary. For each unit, four equivalent but different forms of readiness tests are provided. The course policy is explained to the students in the beginning. The study guide of the first unit is distributed individually and the students start studying them. The instructor goes from student to student explaining individual difficulties. The instructor goes from student to student explaining individual difficulties. The student takes the readiness test provided he thinks that he has fulfilled the behavioural objectives.

The test is scored in the presence of the student with his verbal clarifications. If he clears the test completely without any conceptual mistake, he is provided with the study guide for the next unit. Otherwise he has to attend to the areas requiring further study and appears for the test again. He is given the retest, which may be old or new or on-the-spot

constructed test depending upon the need. After completing, he goes for the next unit. After a little progress, some high pacers are selected from the students to act as proctors (internal as against external wherever possible). The proctors help the instructor in the one-to-one contact with the students when they are studying, and administering and scoring of the test. Proctors are issued with proctors' Guide sheets wherein his duties and the extra material he has to study are mentioned. Proctors are rewarded for their additional labour, interest and regularity. Each proctor is in charge of certain number of peers.

Also there will be some review tests to assess the retentivity of the students. Enrichment activities are also provided, which carry credit or motivational value. These enrichment activities include extension lectures, work visits or experimental work.

The following are the advantages of personalized system of instruction (PSI).

- i. Every student with all his psychological, socio-economic and intellectual, interest and aptitude, is considered as a class
- ii. Students learn at their own pace rather than at the instructor's pace.
- iii. Tested concepts of educational technological methods, viz., feedback to the instructor and continuous formative tests are exploited to the maximum.
- iv. No costly sophisticated media of educational technology are required.
- v. Atmosphere of cooperation is built up because of proctor guidance.
- vi. Negative reinforcement, i.e., punishment, with all defects, is completely avoided.
- vii. Important is given to the written word in the study guide and readiness test.

- viii. Readiness of the students to learn is properly cared for.
- ix. Learning in the students is visible and the teacher acts as a learning facilitator rather than one who teaches.
- x. The student learns to learn.

For further details, please read the below referred material.

Chauhan, S S. (1992)	<u>Innovation in Teaching-Learning Process</u> , New Delhi, Vikas Publishing House Pvt. Ltd. PP 88-95.	7-4
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## 7.7 MODULAR APPROACH

A module is a small part of the whole curriculum. It is a type of planning the classroom programmes or the curriculum. According to Allen and Bush, curriculum can be conceived as an area to be scheduled. The sub-parts of the schedule or the curriculum, the modular units pertain to class, size and length of the period.

The following are the desirable features of a module:

- i. It should focus on a distinctive identifiable skill or set parts of skills. Of course, outcomes other than skills may be the focus of the module.
- ii. It should be fairly short, the shorter the better.
- iii. It should be essentially self-teaching, whether oriented to individuals working alone or in pairs or small groups.
- iv. It may not require the presence of the instructor or information giver.

- v. It should include an objective measurement procedure
- vi. It should include a bibliography suggestive of further readings or sources related to skills.
- vii. It should include alternatives which students may choose.
- viii. It should include specific instructions for students.
- ix. It should blend theory and practice, reading, reflecting and acting.
- x. It should be reality-oriented.
- xi. It should involve the students in real or simulated situations.
- xii. It should not be dull.

Population education has assumed a great significance in our country for several reasons. It is, therefore, important that the future citizens should be made conscious right from the early years? How can we achieve this objective? Should there be a separate curriculum or should it be integrated into the existing curriculum? What should be the methodology of transacting the concerns? These questions form the basis of this module. It will assist you to transact this effectively

After reading the module you will be able to

- i. State at least three reasons for including population education in the school curriculum.
- ii. Specify the relationship between development and population education.
- iii. Distinguish between family planning and population education.
- iv. To identify points in the school subjects wherein population education can be integrated

- v Describe the methodology that can be followed by teaching populating education.

## Learning Activities

### Activity Sheet I

- a. **Picture situation-1:** She snake hatching eggs, swallowing some of its young ones as soon as they come out of eggs: Nature's own way of maintaining balance or equilibrium.
- b. **Picture situation-2:** A Bird couple jointly building their own nest anticipating new arrivals in their family.

### Suggested Activities

A teacher may ask children:

- To narrate their experiences of the young ones of cats, dogs, etc.
- To narrate their observations about various kinds of nests built by birds.

### Activity Sheet II

- a. **Picture situation-1:** A house with two families with two children each, a boy and a girl in each.
- b. **Picture situation-2:** Another house of the same size with again two families only. But in this case there are three children in each family, two girls and one boy in one family and vice versa in another.
- c. **Picture situation-3:** Another house of the same size with again two families only. But the number of each family is four, two boys and two girls each.

## Activities for Children

Let them discuss various situations in these families, facilities etc, available to each child.

- i. Population education is different from family planning. State three reasons.
- ii. Population education should be integrated in different subject areas. State three important reasons.
- iii. Planned parenthood should be taught to children. Give two reasons.
- iv. Population education helps in improving the life. Give three points.

For further details, please read the below referred material.

Javed Iqbal. M (1997)	<u>Pakistan Journal of Distance Education, 1997, Vol.XIV, Islamabad, AIOU. PP.31-45.</u>	7-5
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## 7.8 MULTI-MEDIA TEACHING

Alongwith various instructional techniques, communication media can also be used very easily. By using this, all the learning conditions are created and expected objectives are achieved. The presentation of teaching material in various forms for a single content is called multi-media teaching. It is used not only by teachers, but pupils also use it for learning. In teaching, the use of multi-media teaching is also known as instruction development. In this way, the teaching-learning problems are solved.

It is essential to follow the following aspects for using it effectively in teaching and learning:

- i) Determining and defining the terminal behaviours.



- ii) Managing the content or strategy.
- iii) Applying teaching method or organised strategy.
- iv) Passing through the process of evaluation.
- v) Managing remedial instruction on the basis of diagnosis of the pupils and providing feedback.

It is essential to use the following principles in order to apply teaching approach to the classroom teaching:

- i) To prepare the pupils to use the medium in the class.
- ii) To prepare physical conditions.
- iii) To conduct a continuous evaluation so that the effectiveness of the medium may be known.
- iv) To select a teaching medium in view the objectives.
- v) To provide guidance to the pupils for imitation so that they may succeed in acquiring the experiences.

Sharma, R.A. (1993) discussed the multi-media approach and Rashid, M (1985) has also highlighted the multi-media approach used in Pakistan by Allama Iqbal Open University in teacher education. Please read the below referred books for further comprehending the idea of multi-media approach to teaching.

Sharma, R.A. (1993)	<u>Advanced Educational Technology</u> , Meerut, Loyal Book Depot. PP.242-245	7-6
Rashid, M (1985)	<u>Pakistan Journal of Distance Education</u> , Vol-II, Issue No.1, Islamabad, AIOU. PP.45-59.	7-7

## 7.9 SYSTEMS APPROACH

System approach is a scientific approach to find out the cause of the problem prevailing in the system and remodify it. This concept emerged during second world war. The term 'System Approach' has been borrowed from engineering.

### Meaning

System approach is the practice of looking at educational institutions or other organizations whole system rather than as collection of related and unrelated functions, widely used by management in business, government, education and for organizational study.

### Concept of 'System'

A system has following characteristics:

- i. **Inter relatedness:** A system is a dynamic and integrated whole, it is not merely a sum of its parts.
- ii. **Functional unity:** The system comprises of elements which are functionally inter-linked and are inter dependent.
- iii. **Purposefulness:** The elements work in cooperation with each other to achieve the overarching goal of the system

### Basic Parameters of System

A system can be described in terms of four parameters:

- i. Input is that we put into a system
- ii. Process is what goes on in a system
- iii. Output is the product of a system
- iv. Environment: A system draws inputs from the environment and gives output to the environment. A system has to operate

within the confines of the environmental context. A system cannot revolt against environment constraints.

The effectiveness of the system depends upon the variables which are within the control of the system.

### **System Approach: Its definitions:-**

According to Barathy (1968), system approach to instructional design is known as "common sense by design", a systematic way of analysing a problem and solving it.

According to Twelker et. al. (1972) system approach is as "a management tool that follows individuals to examine all aspects of the problem, to inter-relate of one set of decisions to another, and to optimally use the resources at hand to solve the problem."

Keshow and Michean have given a comprehensive definition of system approach. "System approach is one of the techniques which aims at finding the most efficient and economically intelligent methods for solving the problems of education scientifically."

### **Common Features of System Approach**

- i. Planning, development, delivery and evaluation of instructions are based on system theory
- ii. Goals are based on an analysis of the environment of the system.
- iii. Instructional objectives are stated in observable performance terms.
- iv. Knowledge about the students is crucial for the success of the system.
- v. Considerable attention is paid to the planning of instructional strategies and the selection of media.

- vi. Evaluation is a part of design and revision process.
- vii. Students are measured and graded by their ability to achieve desired standard and criteria rather than comparing one student with other.

A salient feature of instructional design using the system is the use of a diagrammatic model of design process. It has following advantages:

- i. It ensure that all key factors will be discussed, all essential steps will be followed in a logical sequence.
- ii. It communicates effectively to all participants, what will be done, how it will be done.
- iii. It also helps in identifying clearly the roles of the participants within the process.
- iv. It can identify options and assist in decision-making.

The diagrammatic models have common features outlined above but they also differ from one another due to several factors given below:

- i. Instructional setting:**
  - a) What are the individuals working in the system?
  - b) What is the level of education? Primary, Secondary or Higher Education.
- ii. Who is involved in the design process?**

An individual teacher or a team of teachers, or a team of developers, evaluators and media experts.
- iii. Scope of the project:**

Whether designed for:

- a single lessor, or
- a course, or
- an entire curriculum, or
- a national educational system.

#### iv. **The author's Perspective**

Most models clearly indicate the strength(s) and biases of their author (s).

Some educational technologists give more weightage to media selection, production and utilization, others may utilize students' characteristics, needs, assessments etc. Philosopher's approach is totally different.

System approach is both effective and efficient but only when there is an ideal fit between the model and the project

Andrews and Goodson (1980) described three types of models on the basis of their origin, purpose, uses and documentation:

- i. **Integrated Models:** Concerned with communications, feedback and the prediction of one action on the other parts of the system.
- ii. **Task-oriented Models:** Concerned with all necessary tasks performed in the system.
- iii. **Prescriptive Models:** Concerned with the solutions of the problem. Provide a series of "if then" statements.

Gustafson (1981) classified models into four new categories:

- i. **Classroom-focussed Models:** These models emphasis, the selection and adaptation of existing material rather than developing new ones. Main focus is on teacher, learners, content, curriculum & institutional facilities

- ii. **The Product-focussed Models:** Main emphasis is to produce one or more specific instructional packages
- iii. **The System-focussed Models:** Main purpose is to develop an instructional system. It may include materials equipments, a management plan and at times an instructor training package.
- iv. **The organization-focussed Models:** Main focus is to modify the organization rather than instructions

For the convenience, these four models can be merged into two:

- i. **Classroom/Product Models:** Those models which focus on objectives, a single course or the design production field testing and evaluation of a single instructional sequence come under this group. These models are product oriented and focus on the "how" questions e.g. How can an objective be met? How can a unit be designed? and so on. These are meant for improvement of teaching and learning.
- ii. **Comprehensive Models:** Those models which deal with entire programme of study (e.g. course, curricula, educational system etc) come under this group. These models require the involvement of several individuals and deal with "Why" a programme exists and "What" should be in it.

The key of system approach is to select the particular model or to decide to combine models, so that needs, resources and priorities of a particular project are met as closely as possible.

#### **Elements of the Model**

- a. Statement of objectives
- b. Pre-assessment of students

- c. Design
- d. Implementation of formal instructions
- e. Evaluation (provides feedback)

Most of the models contain needs assessment step early in the design process

The key to success of system-approach is the inter-relationship of objectives to student-performance i.e. revision is continued until a pre-stated level of student-performance is achieved and objectives are met. Generally, there is work-flow in the over all design i.e. from step 1 to step 2, step 2 to step 3 and so on.

### **Characteristics of these Models**

- i. They focus on what and why as well as how questions prevailing in the systems i.e. basic assumption about the content and structure of the programme tend to be questioned.
- ii. They emphasise on need-assessment in both, selecting the project and determining the goals and objectives.
- iii. While teacher or faculty members is responsible for content decisions even instructional developers, evaluators, media specialists have the responsibility for coordination, quality control and accomplishing certain tasks.
- iv. Once an over all programme or curricula is designed, the entire design process is repeated for the major elements within that programme.
- v. Formal statement of instructional objectives are made until the overall goals of the programme are known, the entering behaviour interests and needs of the students are identified and instructional content and sequence determined.
- vi. They use formative and summative evaluation and rely heavily on data-collection and interpretation through-out the process.

Romiszowski, R.A. (1984) identified five conditions that should be avoided if a project, selected for the improvement of the system, is to be successful. A project can not be a success:-

- Where content expertise are lacking
- In those schools or departments which are undergoing administrative change.
- When project involves only one teacher or faculty member (when they leave the project, it usually dies).
- When projects do not have strong administrative support.
- Where what is expected is unrealistic in terms of time and existing resources.

Romiszowski, R.A. further identified five key areas which should be considered to make a project successful.

- i. Social, political, national needs and priorities (what problems exist? How important are they?)
- ii. Administrative consideration (stability, long-term growth potential, etc.)
- iii. Potential for success (commitment, quality of staff, realistic goals).
- iv. Support agency resources (availability of staff and time)
- v. Political override.



## II. Comprehensive Model

model

The comprehensive has two phases:

- Phase I: Project selection and design
- Phase-II: Use classroom/product model, production, implementation and evaluation

**Step 1: Project Selection:** It is decided by need assessment (step 1.1.) and institutional resources or available resources (step 1.2) Noel Entwistle (1988) divided needs assessment into two:

- i. External Needs Assessment (i.e. needs of an individual beyond the formal education).
- ii. Internal Needs Assessment (i.e. needs within an organization).

Need Assessment process helps in identifying:

- i. What is;
- ii. What should be;
- iii. Change requirements;
- iv. Continuation requirements; (step
- v. Possible intervention;
- vi. Selected interventions.

Need assessment provides data that determine if a project should be under-taken but also to define the overall goals once it has begun.

**Step 2: Designing for the ideal:** Once the goals of a project are identified, an effort is made to identify the entering behaviour, needs, interests, attitudes of students, instructional objectives and specific competencies for success in the course or in the job. The design team

is asked to prepare an ideal plan. In the plan, the inter-relationship of topics is developed, a flow of content evolves and the points for remediation, exemptions are identified.

**Advantage of this step:**

- i. It tests assumptions about structure and time.
- ii. It tests assumptions about content.
- iii. It forces sensitivity to the needs and priorities of the specific student-population that is being served.
- iv. Teachers find the concept of designing the best possible programme exciting and challenging.

**Step 3: The operational design:** Once the ideal design is formed, the design team reviews the available resources (i.e. teachers, part time instructional assistants, facilities and equipments etc.), the time available for instruction, number of students who must be taught, and then present trend in teaching/learning or using technology. The ideal imaginative design is modified into what the team feels is realistic and possible. Once, it is determined, classroom/product model is implemented. A design should always be flexible to have more chances of being successful.

## Conclusion

The system approach represents a process for solving an instructional problem. It is both-effective and efficient. It can assist both teachers and administrators by bringing rationality in the system.

## Advantages of System Approach

- i. It provides conceptual frame work to build plans for implementing change for education.
- ii. It helps to identify the suitability of the resource material to achieve the specific goal.
- iii. It helps to assess the resources needs, their sources, and facilities in relation to quantities, time and other factors.
- iv. Technological advancement could be asked to provide integration of machines, media and people for attaining the defined goals
- v. Rigidity in plan of action is avoided as continuous efforts desired beneficial changes to be made successively.

For further details, please read the below referred material.

Das, R.C. (1993)	<u>Educational Technology: A Basic Text</u> , New Delhi, Sterling Publishers, Pvt. Ltd. PP.215-239	7-8
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## 7.10 ACTIVITIES

1. Draw a diagram indicating the steps involved in micro teaching.
2. Write below any three benefits of computer assisted instruction.

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3. Write below the uses of multi-media in Pakistan especially for teacher education.

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4. Discuss the importance of approach with any educationist and prepare a report of the outcome of your discussion.

## 7.11 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1      Discuss the significance of micro teaching.
- Q.No.2      Explain the concept of micro teaching.
- Q.No.3      What are the steps involved in micro teaching? Give examples in support of your answer.
- Q.No.4      "Computer Assisted Instruction has now taken on so many dimensions that it can no longer be considered a simple derivative of the teaching machine or of the kind of programmed learning that Skinner introduced". Discuss.
- Q.No.5      Discuss the advantages and disadvantages of computer assisted instruction.
- Q.No.6      Describe the concept of team teaching.
- Q.No.7      Critically examine the significance of team teaching.
- Q.No.8      "Team teaching is a type of instructional organization involving teaching personnel and the students assigned to them, in which two or more teachers are given responsibility, looking together, for all or a significant part of the instruction for some group students." Discuss.
- Q.No.9      Discuss the concept and significance of personnelized system of instruction. Also give benefits of PSI.
- Q.No.10     Critically examine the modular approach in teaching.
- Q.No.11     Explain the advantages and disadvantages of modular approach.

- Q.No.12 Which media are used in multi-media teaching? Give example to support your answer.
- Q.No.13 Critically examine the usefulness of multi-media approach in teaching-learning process.
- Q.No.14 Define the term system approach.
- Q.No.15 Discuss the concept of system approach, its usefulness, and limitations in teaching-learning process.

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UNIT - 8

MANAGING TEACHING LEARNING PROCESS

BY  
PROF. DR. MUHAMMAD RASHID

## UNIT-8

## MANAGING TEACHING LEARNING PROCESS

- 8.1 Introduction
- 8.2 Objectives
- 8.3 Theories of organization
- 8.4 Meaning of management
- 8.5 Concept of management of teaching learning process
- 8.6 Steps for managing teaching learning process
- 8.7 Teacher as a manager
- 8.8 Activities
- 8.9 Exercise
- 8.10 Bibliography

## 8.1 INTRODUCTION

The tasks facing educational managers and planners have become more challenging and complex over recent decades and their intensity is likely to increase further in the future. There are five important reasons for this: (i) Phenomenal expansion of educational system to meet the needs of growing population. (ii) Explosion of social expectations of the people for education; (iii) New requirements arising from socio-political and cultural changes; (iv) Scientific and technical manpower requirements of growing economies; and (v) Use of technology in educational management and planning.

Though formal school system will continue to be a dominant structure within the educational system, its internal processes have already begun to change. Open university, schools of the air, schools without walls, a variety of non-formal and non-instructional educational arrangements are reducing the domination of the formal school. According to many, adjustments in educational structures, process, planning and financing would be necessary in the future.

In recent times expectations from the schools have increased enormously. In earlier decades what was expected from the schools was quite limited. We wanted them to teach three R's and certain disciplines which were quite well demarcated and delimited.

Educational management will have to be geared to the solutions of the problems of quality, quantity, equity, utility and financial outlay in education. At the same time management and planning styles will have to be relevant and responsive to indigenous conditions.

I.K.Davies introduced the concept in the field of education. This concept includes four steps which manage the teaching profession. The teacher is the manager of the teaching learning.

## Four steps of managing-teaching system

<u>Step</u>	<u>Activities</u>
i. Planning	<ul style="list-style-type: none"><li>a. System Activities</li><li>b. Task Analysis</li><li>c. Entering behaviour</li><li>d. Specification of knowledge, skill and attitudes.</li><li>e. Identification of needs.</li><li>f. Formulation of objectives</li><li>g. Criterion Test</li><li>h. Construction of Criterion Test.</li></ul>
ii. Organising	<ul style="list-style-type: none"><li>a. Organising learning resources</li><li>b. Implementing teaching activities.</li><li>c. Selecting communication strategies.</li><li>d. Motivation and inforcement.</li></ul>
iii. Controlling	<ul style="list-style-type: none"><li>a. Evaluation of teaching system.</li><li>b. Observing learning system.</li><li>c. Modification in teaching system on the basis of feedback.</li></ul>

### 8.2 OBJECTIVES

After reading the unit, you should be able to:

1. discuss the theories of organization;
2. explain the meaning of management;
3. analyse the concept of management in teaching-learning process;
4. specify the steps for managing teaching-learning process; and
5. appreciate the role of teacher as a manager.

### 8.3 THEORY OF ORGANIZATION

The theories of organisations are given below:

#### i. **Classical theory of organization (task-centred)**

The main assumption is that Members of the organization have the capacity to perform a task and follow the instruction given. But they do not have the capacity to initiate and take decision about the problem of the organization. They can not influence the working system of the organization. The members are just like a machine or work force, nothing more, nothingness.

**Application in Education:** According to this theory, teacher controls all the activities of teaching-learning process. Students are passive listeners. They have to follow the instructions of the teacher. Main emphasis is on presentation knowledge and skills are developed in the interest of organization. The teacher does not consider the interests, attitudes and values of the learners.

#### ii. **The Human relationship theory of organization (relationship-centred)**

According to this theory, the organization has the influence of the interest, feelings, attitudes, values and goals of members of the system. The education system is organized in such a manner that can be helpful in all around development of the students. A teacher is like a friend, philosopher, and guide. His main duty is to provide opportunity to students and encourage them for equal participation in teaching-learning process. To make the content more meaningful and interesting, maximum use of audio-visual aids is prescribed. Psychological principles of learning are applied. It does not stress on rote-memory learning but more stress is given on meaningful activities like project-work, discovery games, sports etc.

#### iii. **Modern theory of organization (task and relationship-centred)**

Members of an organization have the capacity for problem-solving and taking decisions. More emphasis is given on perception and thinking of

the members of the organization

**Application in Education:** In education-system teaching is child-centred or objective centred. In organizing teaching, students' interests, needs, abilities, capabilities etc are taken into consideration. A teacher tries to establish a relationship among students' variables, task variables and organization-variables.

These theories indicate that teaching-learning is based upon system-approach.

For further details, please read the below referred material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.162-164	8-1
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#### 8.4 MEANING OF MANAGEMENT

It is a specialised activity required for the running of all these social institutions which are composed of a group of human beings. This activity is called management in the field of business and industry. In other fields it is, largely called as administration.

Organisation is the label which is used, conventionally to refer to the structured responsibilities and relationships allocated to the various executive and supervisors positions in almost all the fields of employment including government departments. It refers to the structure or the form of the organisation, the vertical and horizontal lay-out of the power positions in the organizations. However, the word 'organisation' has been used occasionally, by some writers to refer to the process of management. In such situation, it creates a confusion between management and organization. But it is done rarely. One who understand this situation is not likely to be misled.

On the other hand, a distinction is drawn in certain fields between administration and management. The phase of business enterprise which concerns itself with the overall determination of the major policies and

objectives is, generally, called administration. Management, then, is the executive function that concerns itself with the carrying out of the administrative policy laid down by administrators. In this way administration in certain organisation is the policy making sector of the organisation.

The level of organisational operation is mainly concerned, then, with laying down of the broad objective to be achieved by the organisation. Where this part of the organisation exists separately, its management part consists of all those functions and people who have to strive for the achievement of these objectives. Thus, in an organisation where these two functions stand separated administration refers to the force which forms policies and lay down objectives, while the management is the force that leads, guides, and directs the organisation in the accomplishment of these goals.

Moreover, management is largely considered as a social process. It is held responsible for the effective and economised planning and regulation of the operations of the organisation. This may consist of a number of sub-functions such as planning, decision-making, implementing plans and decisions, guiding other employees, integrating and motivating them, supervising the personnel, managing conflicts, and so on.

Finally, educational management has been seen as the process which helps, through the schools and colleges in the development of human personality. It is a science and an art mainly concerned with the right education of the pupils in the society. It is the process that aims at maintaining the institutions of education and making them function efficiently and effectively.

For further details, please read the below referred material

Vedanayagam, E.G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publishers Private Ltd, PP.127-128.	8-2
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## 8.5 CONCEPT OF MANAGEMENT OF TEACHING LEARNING

According to Herbartina approach, teaching is presentation-oriented. There is no emphasis on objectives of teaching. Later on, B.S. Bloom modified the concept of teaching. According to him, presentation is a means, not an end. His main emphasis was on objectives. He described teaching as a tripolar process. According to him, the cognitive, affective and psychomotor domains of the students are developed by using different teaching methods, strategies tactics etc.

Gage, N.L. (1978) described that teaching can be organized at 3 stages: Pre-active stage, (2) Inter-active stage, and (3) Post-active stage.

I.K. Davies (1971) has given a new concept of "Managing teaching-learning.". According to him, teacher is not only a friend, philosopher or guide but he is the manager. He manages teaching-learning process.

Management depends on the stability, nature and structure of an organization.

Heim, Alice (1976) have worked on industrial management and described three theories of organization. These theories have been borrowed in the field of education

For further details, please read the below referred material.

Vedanayagam, E.G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publihsers Pvt. Ltd PP.128-132.	8-3
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## 8.6 STEPS FOR MANAGING TEACHING LEARNING PROCESS

I.K. Davies (1971) have given a concept of management of teaching-learning which is based upon Model theory of organization. Davies calls the teacher as a manager because he has to organize learning resources and then, to use them in teaching-learning activities will be organized. These four steps are given below:

### Step-I - Planning

According to I.K. Davies (1971), "In teaching, planning is the work of a teacher done to establish learning objectives."

A teacher has to perform three activities as this step:

- i. Task analysis
- ii. Formulation of objectives
- iii. Writing objectives in behavioural term

### (i) Task Analysis

This concept was given by Ryans, David, G. (1969). It has emerged from Training Psychology. It helps in developing understanding about the task i.e. what to perform and why to perform and in developing skills about how to perform the task.

According to Davies, task may be defined as "unit of performance which collectively constitute a function"

Task analysis has four characteristics:

- a) Description of learning activities.
- b) Identification of desired behaviour.
- c) Selection of appropriate teaching, strategies tactics and techniques of motivation.
- d) Developing criterion test for measuring the desired behaviour change.

Task analysis is classified into three categories which are quite different and serve different purpose:

- (a) Content Analysis.
- (b) Job-Analysis
- (c) Skill Analysis.

**(a) Content Analysis**

According to I.K. Davies, "Content analysis is the analysis of topic or content unit to be taught, into its constituents or elements and arrange them in a logical sequence.

By using Davies Matrix technique, the selected content is splitted into sub-topics, sub-topics to element. These elements are arranged in a logical sequence to facilitate learning among students. Logical sequence may follow the below given maxims of teaching:

- From known to unknown.
- From simple to difficult.
- From concrete to abstract.
- From part to whole.
- From observation to logical thinking.

These success of teaching depends how a teacher synthesizes these elements by using his imagination, insight and creativity.

Various sources are explored by the teacher for content-analysis. Some of the important sources are:

- Available literary sources to get the valid content-material.
- Entering behaviour of the learners and their needs.
- Objectives of teaching-learning.
- Teaching aids (audio-visual aids)
- Pattern of examination system.
- Teaching skills.

A teacher should make proper use of these sources, in analysing the content and make teaching effective.

### **Characteristics of content-element**

- An element is complete in itself and can be understood by the student.
- An element can be evaluated independently.
- An element can be taught independently.
- An element can bring change in the learner's behaviour.

### **(b) Job Analysis**

In job-analysis, some social and professional activities and roles of the person are analysed.

In the same manner, job of the teacher is analysed to find his social and professional activities.

### **(c) Skills analysis**

Skill involved in a specific jobs are analysed to perform the task successfully. For example, specific skills for a teacher are questioning motivating, blackboard writing etc.

### **(ii) Formulation of Objectives**

Bobbitt (1918) quoted by Rashid M. (1998) was the first person to use objectives in a more technical manner in educational administration.

Tyler, W. (1969) mainly emphasized on formulating educational objectives.

B.S. Bloom ed. (1956) (Tyler's former student) developed two taxonomies of cognitive and affective objectives.

Mager (1962) argued that:

- a) behaviour should be specified only in observable terms and action words like know, understand, define, feel, appreciate should be used.
- b) Standard of performance should be specified in minute detail and with a built in assumption of master or near master (e.g. 90% of students should get 90% of questions, correct a test covering addition and subtraction of two digit numbers).
- c) To avoid any ambiguity, the conditions of performance should be clearly identified.

Mager and Gagne (1965) were interested in instructional designs which referred to the detailed planning of instructional events in accordance with the principles of behaviourist psychology.

### **Meaning and definition of objectives**

Objectives means a goal, intention or aim in general. While technically, it refers to an intended and prespecified outcome of a planned programme of teaching and it is expressed in terms of what it is hoped the students will have learned. an objective has three main characteristics:

- a) It provides direction to the activity.
- b) It helps in bringing desired change.
- c) It provides the basis for organizing the activity.

B.S. Bloom has given a comprehensive definition of educational objectives:

"Educational objectives are not only the goals towards which the curriculum is shaped and towards which instructions are guided, but they are also the goals that provide the detailed specification for the construction and use of evaluative technique."

B.S. Bloom described teaching as a tripolar process.

**1. Educational Objectives**



**2. Learning Experience 3. Change in Behaviour**

Learning experiences are provided by teaching activities to achieve educational objectives and change in behaviour is evaluated in terms of educational objectives. Thus, educational objectives provide basis for teaching activities and evaluation techniques.

Instructional objectives are formulated by a teacher to plan his teaching i.e. the students will be able to recall the definition of noun. Learning is the outcome of teaching in terms of change in behaviour of the learners. So, a teacher evaluates his teaching in terms of learning objectives i.e. the students are able to.

Human-behaviour has got three aspects: cognitive, affective and psychomotor. On the basis of these domains, B.S. Bloom has classified the learning objectives in three categories:

- a. Cognitive objective.
- b. Affective objective.
- c. Psychomotor objectives.

Cognitive objectives describe about what will student do. Affective objectives reveals that how will he express it while psychomotor objectives show that how will he do it.

### Taxonomies of three objective-domains

Cognitive objectives	Affective Objectives	Psychomotor Objectives
1. Knowledge	1. Receiving	1. Impulsion
2. Comprehension	2. Responding	2. Imitation
3. Application	3. Valuing	3. Manipulation
4. Analysis	4. Conceptualization	4. Coordination
5. Synthesis	5. Organization	5. Control
6. Evaluation	6. Characterization	6. Habit formation

Educational objectives are identified in view of social philosophy, form of government, trend in social change, and needs of nation, society or students because these are always in a flux by change of time.

#### Procedure of writing objectives in behaviour term

##### I: To formulate objectives

- (i) In formulating objectives, four main dimensions are taken into consideration.
  - a. Content to be taught or planned.
  - b. Behaviour i.e. which behaviour domain has to be changed.
  - c. Conditions, such as needs of the nation, society, institution and learners, form of government etc.
  - d. Standard i.e. entering behaviour of learners.
- (ii) Krathwohl, et. al. (1965) distinguished three level of specificity in terms of language and purpose:

(iii) **Status of Objectives:** In general, an objective possesses its three status:

**a) Structural status:** A group of objectives is said to constitute a learning hierarchy when it can be represented by a structure rather like a family tree, in which achievement of each objective is dependent on the achievement of all objectives. A hierarchy is developed by logical analysis breaking down an objective into sub-objectives until each step constitutes a clearly distinguishable learning task.

The terminal objective represents the end of a learning sequence and needs to be justified in its own right.

An enabling objectives situated in the middle of a sequence, needs to be justified in terms of its role in facilitating the achievement of one or more terminal objectives.

**b) Logical status:** Logical status of an objective greatly affects the part it might play in planning and teaching. According to White (1971), behavioural objectives can mean one of the two things:

- Objectives which themselves consist in pupils behaving in certain ways.
- Objectives whose attainment is tested by observing pupils behaving in certain ways.

Lists of objectives are often used to express aspirations rather than expectations and syllabus or content-material often includes a mixture of two. More significantly, an objective which is an expectation for one student may be an aspiration for another.

**c) Political status:** The status of an objective is also affected by political factors. Who specifies them and with what authority?

Who uses them and how strongly do they feel obliged to keep within the specification?

(iv) **Purpose of formulating objectives**

Using objectives in curriculum development

**Advantages:** Generally, second level objectives are used. They help to clarify the intentions of the developers, and focus their attention upon the learner and the teacher.

**Disadvantages:**

- i) Using objectives is not a solution for pupils over what should be taught.
- ii) The user of objectives is not always a skilled person in use of language, therefore, objectives may be, some times, ambiguous.
- iii) Clarification of teaching-intentions is a very difficult task which requires devotion, deep insight and delicacy of phrasing

Success of using objectives in curriculum development depends:

- On whether curriculum developers want to use them or merely feel obliged to use them.
- On whether they are genuinely seeking agreement as opposed to finding a form of words which maximizes the independence of individual teachers.
- On whether intentions are easily communicated by other means as common text books or examination.



## II. Using objectives in lesson-planning:

### Advantages:

Krathwohl's third level of objectives are used. It is very much defining the course than one of the inspiring teachers to move their students beyond the level of routine completion of text-book exercises or memorization of content.

### Disadvantages:

- a. David, J. R. (1976) says that objectives are totally inadequate in describing teacher's tasks (especially for gifted, backward or weaker children).
- b. According to Gage, N L (1978), outstanding teaching revealed not the achievement of objectives but the creation of productive learning conditions and securing students' involvement.
- c. A number of objectives distract the teacher from the primary task of securing involvement in learning.
- d. Atkin (1968) says that higher order objectives can be set whenever opportunity arises rather than according to planned schedules.

Until, there is good evidence of objective based teaching, the use or non-use of objective, should remain a matter of personal preference.

## III Use of instructional designs

Use of third level objectives in instructional designs improve its quality by providing proper base, logical sequencing of elements and objective based evaluation.

#### IV Use of evaluation

Objectives are not the absolute criteria for monitoring the students' achievement but just an indication of their attempts to express their intentions. Objectives may be used as a guide to test-construction or as an aid to data-analysis.

#### V Use of communicating to students

Several studies have shown (that students learned better from ) textual materials rather than a teacher. Objective based teaching or instructions, some times, have positive effects and some times there are none, but there are no reports of negative effects.

After considering the following factors, the terminal objectives are decided in general term. Then, these objectives are thoroughly analysed into specific objectives.

According to Eisner (1969) objectives can be classified into three categories:

- a. **Instruction objectives:** These objectives are pre-specified and are short-termed.
- b. **Expressive objectives:** These objectives are not specified but the educational situations, tasks are specified. It cannot be predicted whether students will achieve these objectives or not. Students are encouraged to develop personal perspective and insight.
- c. **Emergent objectives:** These objectives are not formulated in advance but which, when opportunity arises, are seen contribute important educational aims.

These three objectives are collectively called educational objectives. The main focus of educational objectives is to bring change in behaviour of the learners.

Behaviour has got three domains.

- a. Cognitive (knowing aspect)
- b. Affective (feeling aspect)
- c. Psychomotor (doing aspect)

In education, cognitive domain can easily be measured while the affective and psychomotor domains of behaviour are difficult to be assessed.

Formulation of objectives is illustrated with an example:

### **Step I.**

The following conditions are to be taken into consideration before formulating objectives.

- Purpose: Lesson planing (for student-teacher)
- Topic: Flower, its parts and their functions.
- Behaviour: Cognitive behaviour to be changed.
- Standard of students: female, age group 14-16 years class IX.
- Time: 45 minutes or so.
- Number of students in the class: 30
- Medium of communication: English
- School: Muslim Girls School.

### **Step II**

#### **Content analysis**

Selected content is read thoroughly by the student-teacher and then, analysed. For example:

**Topic:** "Flower, its parts and their functions"

### **Step III**

Content elements are displayed in a matrix form to show their role and relationship. Elements are arranged in a logical sequence follow, mainly, two principles to teaching. i.e. from simple to difficult and in order to that positive transfer of learning occur.

#### step IV

The table displays the objectives on one side and content-elements on other. It shows the total number of behavioural objectives. The number of behaviour objectives are equal to the number of teaching-points.

**Two Way Table of Objective-Specification**

Objectives Elements	Knowledge	Compre h-ension	Application	Analysis	Synthesis	Evaluat-ion
E1	_ /					
E2	_ /	_ /				
E3	_ /	_ /				
- - - - - and so on						

This scaffold or diagram helps the teacher to -

- Select his range of objectives and test-questions.
- Relate and inter-relate his objectives and associated test questions to other objectives and questions in both cognitive and affective domains.
- Ensure that proper balance and weightage is given to each objective and questions.
- Determine that higher-order objectives are being realized.

Once teachers and instructors are appreciative of value or using taxonomy when they plan their objectives of teaching and examination, the over all quantity of classroom teaching and examination will improve.

These formulated objectives are quasi-operationalized, till they are

not written in behavioural terms.

### **(iii) Writing objectives in behavioural terms**

It requires the following steps.

**(a) Sequencing of formulated objectives:** Sequencing of elements of form of behavioural objectives may take the pattern of.

- Overlapping.
- Cyclic Sequence, or
- Spiral Sequence.

### **Robert Mager's Approach (for writing objectives in behaviour term)**

Robert Mager (1962) emphasised that behavioural objectives should be written in behavioural terms. He made use of Bloom's taxonomies (Cognitive and Affective) and content-analysis in identifying objectives (in terms of categories) and elements of the content. Then, he prepared a list of action-words for each category. On the basis of the nature of the content and objective, an appropriate action-word is selected for each element. It is an intelligent activity which develops insight among the teachers in the content to be taught. Action verbs of each category indicate the level of teaching and learning activities. Objectives can be written in behavioural terms by combining action verbs with an element of action:

Objective in behavioural terms = Element of content + Action verb of that category.

Bloom's cognitive and affective taxonomies and associated action-words are given below:

### Cognitive Objective and Associated Action Verbs

Objective	Associated Action Verbs		
1. Knowledge	Define State List Name	Write Recall Recognise Label	Underline Select Reproduce Measure
2. Comprehension	Identify Justify Select Indicate	Illustrate Represent Name Formulate	Explain Judge Contract Classify
3. Application	Predict Select Assess Explain	Choose Find show Demonstrate	Construct Compute use Perform
4. Analysis	Analyse Identify Conclude Differentiate	Select Separate Compare Contrast	Justify Resolve Break-down Criticise
5. Synthesis	Combine Restate Summarize Precise	Argue Discuss Organize Derive	Select Relate Generalize Conclude
6. Evaluation	Judge Evaluate Determine Recognize	Support Defend Attack Criticise	Identify Avoid Select Choose

## Affective Objectives and Associated Action Verbs

Objective	Associated Action Verbs		
1. Receiving	Listen Attend Prefer	Accept Receive Perceive	Beware Favour Select
2. Responding	State Answer Complete	Select List Attain	Indicate Decide Influence
3. Valuing	Accept Recognise Participate	Increase Develop Attain	Record Develop Derive
4. Organization	Organize Judge Relate	Find Determine Correlate	Associate Form Select
5. Characterization	Revise Change Face	Accept Judge Develop	Demonstrate Identify Decide

### Example

Topic: Flower and its parts

Teaching objectives in behavioural term:

- (a) Learners are able to label the diagram of a flower.
- (b) Learners are able to identify the given parts of the flowers.
- (c) Learners are able to illustrate the diagram of sepals.
- (d) Learners are able to describe the function of sepals and so on.

In planning teaching-learning process, these objectives are written in present tense, while in lesson-planning, student-teachers have to write these objectives in future tense.

### **Limitations of Robert Mager's Approach**

- a. Main emphasis is given on action verbs rather than mental processes that involve in performing actions.
- b. This approach is based on S-R learning theory while in human-learning, it is now workable. On human learning, mental process plays a very significant role.
- c. Only lower level teaching objectives can be written in behaviour terms, higher level objectives are not clear to what action verb should be selected.
- d. There is a repetition of action verbs in different categories. It creates confusion in the minds of teachers to what action verb should be used for that particular objectives.
- e. Psychomotor objectives can be written in behavioural term by using Mager's approach.

### **Millers's Approach for Psychomotor domain:**

Miller, L.K., Witty, D.S. and Comas (1965) prescribed the following pattern of writing psychomotor objectives in behavioural terms

- a. His approach was based on skill-analysis.
- b. An indicator on which the activity, relevant-indication appears.
- c. The indicator or one which calls for a response.
- d. The control objective is to be activated.
- e. The activation or manipulation is to be made.
- f. The indication or response should be adequate or feed back.

Miller's approach can be used as a procedure-manual for doing the job.

### **RCEM Approach:**

A team of teachers reviewed the limitations of Mager's approach and realized the difficulties.



Keeping in view the limitations, the following suggestions were made by the RCEM teachers.

- a. Human learning can be best explained in terms of mental processes or mental abilities rather than behaviour.
- b. Main focus is on process rather than on product.
- c. A slight change is made in Bloom's cognitive-taxonomy. Six categories of cognitive domain converted into 4 categories: Knowledge, Understanding, Application and Creativity.
- d. These four categories are further divided into seventeen mental abilities or processes. These mental abilities are used for writing the objectives of cognitive, affective and psychomotor domains in behavioural terms.
- e. In writing objectives in behavioural term, first, content is analysed into its element. Objectives are formulated keeping in view the nature of content and needs of students. Then, set of mental process, related to objective, is used including the particular element.

### According to RCEM Approach

Taxonomy of objectives	Mental process for Mental abilities
1. Knowledge	<ol style="list-style-type: none"> <li>1. Recall</li> <li>2. Recognize</li> </ol>
2. Understanding	<ol style="list-style-type: none"> <li>1. Seeing relationship</li> <li>2. Cite an example</li> <li>3. Discriminate</li> <li>4. Classify</li> <li>5. Interpret</li> <li>6. Verify</li> <li>7. Generalize</li> </ol>
3. Application	<ol style="list-style-type: none"> <li>1. Reason out</li> <li>2. Formulate hypothesis</li> <li>3. Establish hypothesis</li> <li>4. Infer</li> <li>5. Predict</li> </ol>
4. Creativity	<ol style="list-style-type: none"> <li>1. Analyse</li> <li>2. Synthesize</li> <li>3. Evaluate</li> </ol>

The format for writing objectives in behavioural term is like: "The learner is able to..."

The gap includes mental process first and then, element.

For example:

Topic: The flower and its parts

Teaching Objectives: Knowledge, understanding.

### **Objectives in behavioural terms:**

- a. The learner is able to recognize sepals from the diagram given (knowledge)
- b. The learner is able to discriminate between androecium and gynoecium. (understanding)

### **Advantages of RCEM Approach**

- a. It is a very easy and useful approach.
- b. It is very specific and definite than Robert Mager's approach.
- c. It is applicable for objectives of all domains of behaviours.
- d. This approach explains the human learning in terms of mental processes or abilities.
- e. Main focus of this approach is to process than to product.
- f. This approach has emerged in Indian conditions, therefore, it seems to be useful when applied in teaching-learning process in Indian schools.

### **Limitations of RCEM Approach**

- a. It did not provide any psychological or scientific basis for mental abilities. Thurstone has described 6 or 7 primary mental abilities while Guilford describes about 120 mental abilities. Seventeen mental abilities described by RCEM approach do not fit of the psychological theory of intelligence.
- b. There is no balance in mental-processes of the four categories given. More emphasis is given on understanding.
- c. The same mental abilities can be used for all the three domains of behaviour. But there is a lot of difference in the three domains of behaviours. Cognitive domain is related to knowing aspects, affective domain is related to feeling aspects while psychomotor domain is related to doing aspects.

- d. There may be more than one mental processes for an element. So, the problem arises in selecting the appropriate mental process for that particular element.

For further details, please read the below referred material.

Vedanayagam, E.G. (1994)	<u>Teaching Technology for College Teachers</u> , New Delhi, Sterling Publishers Pvt. Ltd. PP.132-140.	8-4
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## 8.7 TEACHER AS A MANAGER

The teacher works with active learner than with passive recipients. The teacher has to be active, alert and arrange situations accordingly so that children also remain active. The teacher is thus in the role of 'Director of activity'. Here the teacher wants his pupils "to think and act for themselves, to do rather than to know to originate rather than to repeat.

In short there can be three different roles for a teacher

- i. Teacher as an experimentalist because he is to create learning situations. An ordinary teacher or a teacher without vision may fail in this role.
- ii. Teacher as a friend and helper. Here we quote the late Professor Prem Nath, "The teacher is a friend and a helper! he is to provide the child with opportunities for experimenting in the school and on the field."
- iii. Role of the teacher. Midway between naturalism and idealism. Naturalism had no place for a teacher. On the other hand (also to help you to recapitulate) in idealist scheme of education, a teacher is next only to God. In Pragmatism, it is middle of the road. When in difficulty, the child can depend on the teacher, can call help and assistance.

For all these novel 'approaches', we call pragmatic education progressive education also. School atmosphere must be a good social atmosphere. Pupils should be given all freedom to think. Natural interests of the child be aroused, satisfied and sustained. The problem of indiscipline will not arise.

Lastly, talking of morals, values like honesty, truth etc., are impressed upon. There is no super-imposition of morals. When socialized activity in a school is there, discipline will be maintained. According to Dewey, "Discipline is a mental attitude and in order to maintain this attitude, socialized activities are essential. Social projects will lead to moral training or character training. These activities will result in permanent attitudes of cooperation, sympathy, self-defence, self-reliance, independence and initiative. Discipline is thus a result of social sequences.

Freedom is an element of discipline, freedom does not mean license. Freedom and discipline are related. Discipline includes freedom and it should lead to joy and happiness.

For further details, please read the below referred material.

Curzon, L.B. (1997)	<u>Teaching in Further Education: An Outline of Principles and Practice</u> , London, Cassell, PP.185-193.	8-5
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## 8.8 ACTIVITIES \*

1. Draw diagram indicating the theories of organization.
2. Discuss the concept of management of teaching-learning with any planner and prepare a report of your discussion.
3. Write below any four steps for managing teaching-learning process:

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4. Write down any three characteristics of the role of teacher as a manager.

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## 8.9 EXERCISE

Hopefully, you have read the unit and the referred material, now please reply the following questions.

- Q.No.1 Discuss the theories of organization.
- Q.No.2 What you understand by the term 'management'? Give answer with examples to clarify the concept of management.
- Q.No.3 Explain the concept of management of teaching-learning process.
- Q.No.4 Critically examine the steps involved for managing teaching-learning process.
- Q.No.5 Discuss the role of teacher as a manager.
- Q.No.6 Write short notes on the following:
- i) Taxonomy of objectives.
  - ii) RECM approach.
  - iii) Meaning of management.

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UNIT - 9

LESSON PLANNING

BY

PROF. DR. MUHAMMAD RASHID

UNIT-9      LESSON PLANNING

Introduction  
Objectives  
Meaning of definition of lesson plan  
Approaches to lesson planning  
Types of lesson plan  
Elements of teaching unit  
Activities  
Exercise  
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## 9.1 INTRODUCTION

Teaching is a complex activity. It needs proper preparation and planning. Lesson plan is a blue print of teaching activities undertaken in the classroom. Every teacher tries to plan the content in his own style so that he can teach systematically and effectively.

The significance of lesson planning is given below:

- i. Proper lesson planning helps the teachers to do justice with different aspects of the lesson.
- ii. Lesson planning helps teacher in identifying the teaching objectives and managing teaching-learning to achieve these objectives.
- iii. Lesson planning helps the teacher to plan and use essential component behaviours and teaching skills helpful in realization of teaching objectives. It develops reasoning, thinking and imagination powers of the teacher.
- iv. Lesson plan helps in making teaching more purposeful, properly coordinated and gives the student-teacher more confidence and better performance.
- v. Lesson planning prevents wastage of time and energy because it helps the teacher to be systematic and orderly. It saves him from haphazard teaching.
- vi. The pattern followed in a lesson plan helps the teacher to teach, revise and evaluate his teaching. Thus, it helps the pupil in fixing up the knowledge of the subject-matter in their minds.
- vii. Proper lesson planning helps in maintaining discipline in the classroom by keeping the students busy in teaching-learning process.

viii. It helps in maintaining the sequence of content presentation and prevents the teacher from deviate from the topic. Thus, it prevents duplicacy and confusion.

Lesson-planning gives the teacher extra and makes the teaching-learning process slick. It provides adequate lesson summaries, helps in assignments and in the selection of proper strategies, tactics and audio-visual aids.

## 9.2 OBJECTIVES

After studying the unit, it is hoped that you will be able to:

1. discuss the meaning of lesson planning;
2. specify different approaches to lesson planning;
3. explain types of lesson plan; and
4. evaluate the elements of teaching units.

## 9.3 MEANING AND DEFINITION OF LESSON PLAN

Different educationists have defined 'lesson plan' in different ways:

- i. According to Bruce Joyce, Weil Marsha (1980, P.77) "Lesson plan is the title given to a statement of the objectives to be realized and the specific means by which these are attained as a result of activities engaged during the period."
- ii. According to Smith. B.O. (1983, P.91) "Daily lesson planning involves defining the objectives, selecting and arranging the subject-matter and determining the method and procedure."

- iii According to Copper Thomas E. (1978, P.113) "A teaching outline of the important points of a lesson arranged in order they are to be presented, it may include objectives, points to be made, questions to be asked, references to materials, assignments etc."

Thus, a lesson plan is a detailed plan prepared by the teacher in advance for the daily lectures. He follows the maxim of 'whole of part' teaching. It is considered that these units (parts) help in the understanding the whole concept.

For further details, please read the below mentioned material.

Rai, B.C. (1994)	<u>Technique and Methods of Teaching</u> , Lucknow, Prakashan Kendra, PP. 28-30.	9-1
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#### 9.4 APPROACHES TO LESSON PLAN

Different approaches to lesson planning are given below:

##### (i) **Herbartian Approach to Lesson Planning**

It is based on a apperceptive theory of learning i.e. mind of the child is like a clean slate. If the new knowledge related to previous knowledge is given, it will be more easy and retainable for a longer period.

This approach is influenced by classical human organization theory because it is a teacher centred approach.

This approach is used for memory level teaching and involves five steps.

- a) Preparation
- b) Presentation
- c) Comparison,
- d) Abstraction
- e) Generalization.

This approach is commonly used in teaching of various school subjects. On the basis of five steps, outline of a lesson plan is given in the following form.

Date \_\_\_\_\_ Class \_\_\_\_\_ Period \_\_\_\_\_

subject \_\_\_\_\_

Topic \_\_\_\_\_

### **General Objectives**

These objectives are formulated by the teacher in his subject keeping in view of entering behaviour of the learners.

For example: 1. To develop the knowledge of grammar among the students.

### **Specific Objectives:**

These objectives are formulated on the basis of general objectives and considering the nature of the topic and level of students. These are specified in terms of knowledge, skill or appreciation. These objectives are written in behavioural terms.

For example

- Student will be able to recall the definition of noun.
- Student will be able to enumerate the examples of noun....

### **Introduction:**

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

### **Teaching aids:**

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



### **Previous knowledge:**

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

### **Statement of aim:**

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

### **Presentation:**

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

### **Explanation:**

The teacher is supposed to explain the answers of the given answer form.

### **Blackboard summary:**

the teacher has to prepare the blackboard summary of his teaching points and explanations.

### **Review questions:**

The purpose of these questions is to practice the students' learning and evaluate their performance whether they have comprehended the teaching unit or not. These review questions are asked only after running the blackboard summary. For example: Q.1 What is the definition of Noun? Q.No.2. Give some examples of noun.....

### **Home assignments:**

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

### **Advantages:**

- a. The lesson plan is prepared logically which will work psychologically for learning.
- b. It is used for teaching all subjects and almost every where.
- c. It employs deductive-inductive method of teaching i.e. from general to specific teaching.
- d. It can be used for achieving objectives of cognitive domain effectively and efficiently.

### **Limitations:**

- a. It is a teacher-dominated approach.
- b. Lesson plan is highly structured and does not provide any opportunity for learners' creativity and originality.
- c. Only cognitive objectives can be achieved effectively, there is no provision for objectives of affective and psychomotor domains.
- d. Specific objectives are not written in behavioural terms.
- e. It mainly emphasises on best presentation of content-matter.
- f. It does not provide any scientific basis for teaching.

### **Modifications**

Herbart, himself, divided "presentation" step into "matter and method". There will be scientific method for scientific teaching.

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## **(ii) Morrison's Approach**

It is not a very popular approach to lesson plan, used only in USA. This approach is known as "Unit Method". According to Morrison, "Unit is a comprehensive and significant aspect of environment of an organized section and art."

According to Wisely, "The unit is an organized body of information and experience designed to effect significant outcomes for the learners."

Morrison has formulated "Cycle plan of Teaching" major emphasis is on learning objectives and students' needs in planning teaching tasks. His cycle plan of teaching includes five steps.

- (a) Exploration.
- (b) Presentation
- (c) Assimilation
- (d) Organization
- (e) Recitation.

Main stress is on assimilation. Mastery teaching can be done by dividing whole content into units and each unit should be planned and taught. Each unit is psychological in nature. It creates problematic situation which helps in raising level of motivation. Students' involvement increases and thus, learning occurs.

This approach is used at 'understanding level of teaching', especially for higher classes or secondary classes. It is more useful for subjects of science or mathematics.

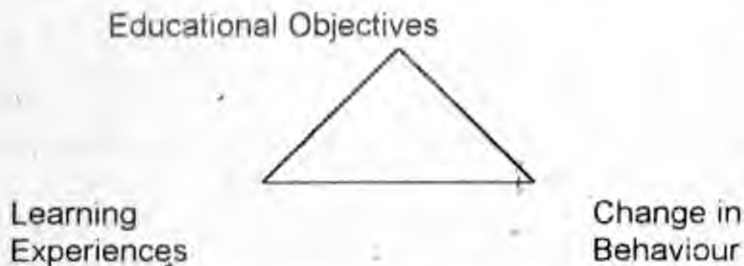
## **(iii) Bloom's Evaluation Approach**

It is an American approach in which Robert Mager and Gagne have also contributed. It is the latest approach which has been followed in our teacher education for student-teachers.

According to Bloom, education is a purposeful activity. It is objective-centred. Testing is based on teaching objectives.

According to Bloom (1956), education is a tri-polar process involving mainly three activities.

- (a) Formulation of objectives.
- (b) Creating learning experiences.
- (c) Evaluating the change in behaviour.



In view of educational objectives, learning experiences are provided to bring desirable changes in the learners' behaviour. These behavioural changes are evaluated in terms of educational objectives. Therefore, evaluation is done not only of students' performance but whole of the education process i.e. teaching learning and testing based on educational objectives.

Evaluation approach does not confine itself only to cognitive development but to the all round development of the child. To evaluate teaching learning process three things should be kept in mind:

- Some behaviour.
- Conditions or situations in which behaviour will occur
- Determination of level of performance.

Students' performances are measured in terms of learning objectives cognitive, affective and psychomotor.

**(a) Formulation of objectives:**

Predetermined, organized activity to bring desirable change is known as an objective. In formulating objectives, the following things are considered:

- Nature and need of the subject.
- Nature and need of the content.
- Students' level of aspiration, need, their socio-economical conditions, cultural needs.
- Students' growth and development.
- Students' intelligence, ability, interest etc.

After considering the above given points, content is analysed into elements/units. First, general objectives are formed on the basis of these teaching units and then, these objectives at cognition level are specified in behavioural terms by using Robert Mager's approach.

**(b) Creating Learning Experience:**

On the basis of learning objectives, appropriate teaching strategies, tactics and audio-visual aids are selected for generating environment for learning experiences. Learning experiences may be provided inside or outside the classroom.

Cognitive Objectives	Learning Experiences
1. Knowledge	Lecture, demonstration, chart, models, textbooks, programmed instruction, home work.
2. Understanding	Question-Answer strategy, seminars, discussions, maps, textbooks, home work.
3. Application	Project method.
4. Creativity	Problem solving methods, seminars, excursions, workshops, field trips etc.

The above table shows the objectives and specific learning experiences for pupil teacher.

**(c) Evaluating the change in behaviour:**

Learning experiences bring desirable changes in the behaviour of learners. These changes are evaluated in terms of learning objectives. A criterion test (objective type or essay type) is used for measuring cognitive objectives.

In Lesson plan, oral questions are asked for evaluating learners' cognitive, affective and psychomotor domains of behaviour.

On the basis of evaluation approach, outline of a lesson plan is given below:

Date..... Class..... Period.....  
Subject.....  
Topic

**Specific objectives:**

1. Student are able to describe....
2. Student are able to recall...

Presentation (Learning experiences)

<b>Teacher's activities</b>	<b>Student's activities</b>	<b>Teaching Methods and Teaching aids</b>	<b>Objectives</b>
Questions	Answers	Teaching strategies or tactics and audio-visual aids if any.	Knowledge or comprehension or application.

### **Evaluation:**

Oral questions are asked to evaluate cognitive, affective and psychomotor domains.

Q.1.....

Q.2.....

### **Home work:**

Home work is assigned to the learners to involve them in studies and develop interest among them.

### **Merits of Bloom's lesson plan:**

- A relationship between input and output of teaching process is established.
- Teaching is made more scientific and systematic.
- Maximum behavioural changes can be brought by minimum effort.
- It helps to check wastage of human energy and time and leads teachers and students towards the desirable goal.

### **Demerits of Bloom's lesson plan:**

- This approach is highly structured and mechanized. There is no scope for creativity or originality of the teacher.
- One teaching activity does not confine to one domain. It is used for other domains also. Therefore, it is difficult to decide at what level, that teaching activity should be used.
- Mental processes or mental activities are not taken into consideration in writing objectives in behavioural terms.
- Motivational techniques are not used for developing interest in students.



#### (iv) John Dewey and Kilpatrick Approach

John Dewey was a great American pragmatic philosopher as well as a great psychologist. He has shifted the focus of education to social efficiency. The knowledge of students should be related to their life situations. The learning experiences should be provided by solving the real problems.

W.H. Kilpatrick has developed a project-method and introduced an integrated approach to the curriculum. A project is whole hearted purposeful activity proceeding in a social environment. It is also a pupil centred purposeful task accomplished in real life. It involves self-activity and experiences of life situations.

For further details, please read the below mentioned material.

David Minton, (1997)	<u>Teaching Skills in Further and Adults Education</u> , Revised ed. London, City and Guilds, PP. 70-76	9-2
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#### 9.5 TYPES OF LESSON PLANNING

There are various types of lesson planning

##### Classification I:

- (a) Macro-lesson plans: These are used in normal teaching. Duration of lesson plan is for 35-45 minutes.
- (b) Micro-lesson plans: These are used in teacher training programmes, especially in micro-teaching duration is five to ten minutes.
- (c) Unwritten lesson plan: In normal day to day teaching, unwritten lesson plans are used by the teachers to make teaching systematic and effective.

## Classification II:

- On the basis of objectives, lesson plan may be of:
- (a) Cognitive or knowledge based lesson plan: More emphasis is given on knowledge. These are used in the subjects like science, mathematics, social sciences.
  - (b) Affective lesson plans: These lesson plans are to develop aesthetic abilities of the learners. These are used in the subjects like music, art, language etc.
  - (c) Psychomotor lesson plan: These lesson plans help in developing skills and creative art. These are used in subjects like science, home science drawing etc.

The paradigm of lesson plans differs from country to country. Therefore, two approaches to lesson planning are described below:

**American Approach:** It is a new approach. It's main emphasis is given to learning objectives. Teacher activities should generate appropriate learning situations for bringing desirable changes in the learner's behaviour. The teaching and learning is evaluated in terms of realization of objectives through a criterion represent test. Instructional procedures can be revised and improved on the basis of students' performance.

**British Approach:** It is an old and traditional approach. Here main emphasis is on teacher and content presentation. Teacher is the authority. He has to manage teaching by planning, organizing, leading and controlling. Students' performance is evaluated by using standardized achievement tests. Sometimes, oral or objective type tests are also used for measuring students' achievement.

In order to have a comprehensive idea about types of lesson planning, please read the below mentioned material.

Saxena Swarup, N.R. and Oberoi, S.C (1994)	<u>Technology of Teaching</u> , Meerut, R. Lall Book Depot, PP.162-166	9-3
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## 9.6 ELEMENTS OF TEACHING UNIT

A teaching unit is a core, a back bone, a key concept, or pivot of lesson planning. It concerns with the subject-matter, content and teaching strategies. The content is analysed into its units. These units are complete in itself. These are arranged logically which work psychologically in effective and permanent learning. These units can be taught independently and can be measured independently. These teaching units help to decide the teaching strategies, teaching tactics and audio visual aids. These units provide basis for linking new knowledge with the previous knowledge of students. Units help in relating teaching with learning. A teaching unit employs three steps.

### i. **Pre-active phase or introductory phase:**

New knowledge is linked with the previous knowledge so as to develop apperceptive mass of the students by teaching units. these units help in motivating students. They provide awareness of teaching objectives to learners.

### ii. **Inter-active phase:**

With the help of units, appropriate experiences are provided to perform certain activities to facilitate student learning.

### iii. **Post-active phase:**

The teaching units help in evaluating learning objectives in terms of students' performance. It also provide feedback to teaching-learning process.

### Elements of Teaching Units:

- a. **Overview:** Objectives of a teaching unit are formulated on the basis of level of student i.e. their previous knowledge, age, intelligence, interest and social, cultural and personal needs and nature of the subject-matter.
- b. **Inventory or background:** Previous knowledge of students is explored. Their motivational state and level of aspiration are also explored by asking some questions or giving a pre-test.
- c. **Presentation:** Every element of teaching unit provides new learning situations or experiences to learners. They are presented in a logical sequence which help in more retainable learning. Lecture, discussion, demonstration or any teaching strategy supplemented with teaching aids and question answer technique encourage student's participation.
- d. **Motivation:** It is an important factor for facilitating learning. It is also known as leading phase of learning. It involves several techniques, use of audio-visual aids etc.
- e. **Summarization:** Induction-deduction approach (i.e. whole to part teaching) is utilized for comprehension of the unit. The elements of teaching units are summarized at the end of presentation.
- f. **Drill and review:** Drill and practice of elements of a unit is must. The student learns better and retains longer if the drill is organized or review is done. Drilling and reviewing is done orally.
- g. **Organization:** Assignments are given to students to organize their learning experiences according to their own ability.
- h. **Evaluation:** Evaluation is done by short answer questions orally to ascertain how far the teacher could achieve real learning outcomes by presenting teaching units.

In order to have a comprehensive idea about types of lesson planning, please read the below mentioned material.

Rai, B.C. (1994)	<u>Technique and Methods of Teaching</u> , Lucknow, Prakashan Kendra, PP.32-33.	9-4
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## 9.7 ACTIVITIES

1. Discuss the significance of lesson planning with your colleagues in the school and prepare a report of the outcome of your discussion.
2. Prepare a chart of various steps involved in the lesson planning.
3. Ask your students to prepare a lesson plan on any topic of their choice and then present it in the class.

## 9.8 EXERCISE

Hopefully, you have studied the material of unit 4, now please answer the following questions:

- Q.No.1 Explain the meaning of lesson planning.
- Q.No.2 Discuss different approaches to lesson plan.
- Q.No.3 "Proper lesson planning helps the teachers in identifying justice with different aspects of the lesson". Discuss the statement and give examples in support of your answer.
- Q.No.4 Discuss the Herbartian approach to lesson planning.
- Q.No.5 Critically examine the steps involved in lesson planning.
- Q.No.6 What are the advantages of lesson planning? Also discuss its limitations.

Q.No.7

Write short note on the following:

- i) Bloom's approach.
- ii) Horrison's approach.
- iii) John Dewey's and Kilpatrick approach.

Q.No.8

Explain various types of lesson planning

Q.No.9

Discuss the important elements of teaching unit.

## 9.9 BIBLIOGRAPHY

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