
UNIT 10 ORGANIZATION OF LEARNING EXPERIENCES IN FACE-TO-FACE MODE

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10.1 INTRODUCTION

A school or a college constitutes micro-level educational organization where formal learning is imparted to the learners. Learners who come to school or college receive a wide range of learning experiences through a variety of means. Learning experiences are provided to the learners by way of organizing different activities both inside and outside the classroom. In the classroom, a learner acquires new learning experiences pertaining to different knowledge areas like Mathematics, Languages, Social Sciences, Sciences, Management and Commerce, Engineering and Technology etc. Outside the classroom, she/he gets engaged in many activities like games, drama, music, study, visits, etc., which also provide learning experiences. Learning experiences, thus acquired from both inside and outside classroom help in the all round development of the learner

– physical, mental, emotional, social and spiritual. In order to impart learning experiences, different ways are adopted by teachers both inside and outside classrooms. In this unit, we shall discuss how learning experiences are organized in face-to-face micro-level educational organizations like school or college.

10.2 OBJECTIVES

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

- explain learning experience;
- discuss the major types of learning experiences;
- describe the different methods of organizing curricular learning experiences;
- discuss the organization of learning experiences through teacher controlled methods, learner controlled methods and group controlled methods; and
- discuss the different ways of organizing co-curricular learning experiences.

10.3 LEARNING EXPERIENCES

Human beings experience new objects, events and phenomena every now and then in life. The early morning when an individual gets up till the evening, she/he starts experiencing different things. From every experience she/he acquires some new knowledge, which may be positive or negative. Those experiences, which contribute to the positive shaping of human behaviour, are considered to be learning experiences. Although an individual acquires learning experiences through out her/his life, society has created formal educational institutions like school or college to impart vast amount of learning experiences in a well designed learning environment. Formal educational institutions like school, college or university provides learning experiences through curricular and co-curricular activities. While curricular activities are related to teaching-learning activities which are organized in different subject areas like mathematics, science, history, economics, languages etc. and lead to scholastic achievement, co-curricular activities comprise all those activities, which are organized for helping a learner to become a successful individual being. These activities are generally non-scholastic activities. You must have observed that a school or a college organizes debates, drama, games and sports, song competition, social service activities, health awareness campaign, etc. All these activities impart learning experiences, which contribute to the development of positive personality in the form of positive attitude, interest, fellow feeling, cooperation, sympathy, empathy etc. A face-to-face formal educational institution adopts several ways to impart curricular and co-curricular learning experiences. Let us discuss how these learning experiences are organized.

10.4 ORGANIZING CURRICULAR LEARNING EXPERIENCES

Curricular activities, as we have already mentioned, constitute teaching learning activities organized in different subject areas. Learning experiences in the curricular areas are provided through imparting of content knowledge in different subject areas to the learners. In order to impart knowledge in different subject areas, a teacher adopts several methods. A method refers to the way learning experiences or the messages are organized and

sequenced, the manner in which the different bits of learning experiences are integrated. In teaching-learning context, a teacher uses several methods. Now list some of the methods you are aware of:

- 1)
- 2)
- 3)
- 4)
- 5)

Well, there are several methods like lecture, discussion, question-answer, debate, seminar, project work, field work, computer-assisted learning, etc. But all those methods, which are available to a teacher to organize learning experiences, can be classified into three broad categories. These are teacher-controlled methods, learner-controlled methods and group-controlled methods. Let us understand the meaning of these terminologies. A classroom-learning environment is generally characterized by teacher, learner and their interaction through transaction of learning experiences with the help of appropriate methods and media. The Fig. 10.1 presents a picture of a classroom teaching-learning environment.

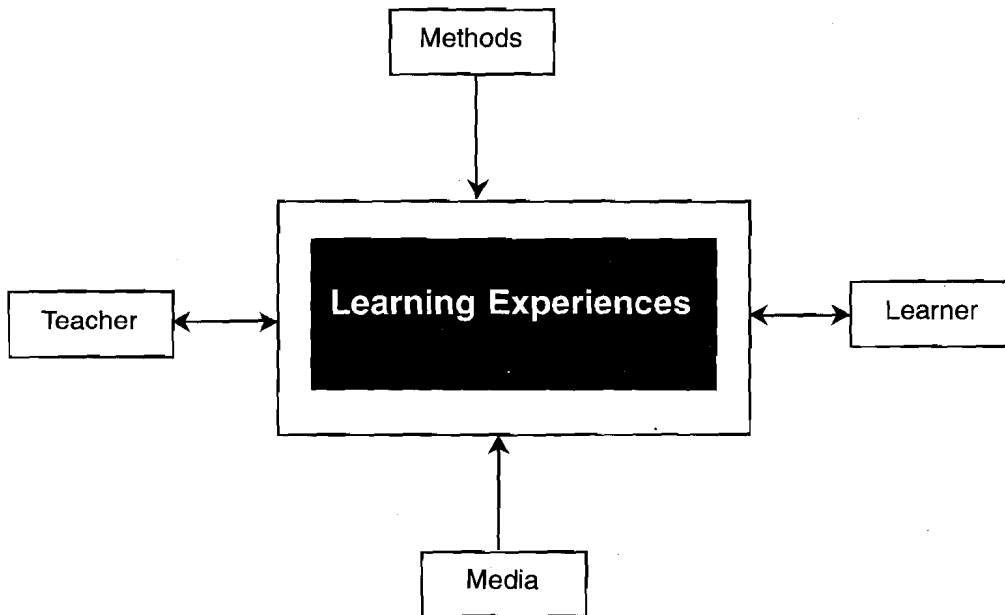


Fig. 10.1: Teaching-learning Environment

In a classroom teaching-learning environment, both the teacher and the learners interact as well as control the teaching-learning environment. When a teacher adopts a particular teaching method, the degree of control is more either with the teacher or the learners. When the degree of control over the teaching-learning environment is more with the teacher, the teaching method being used by the teacher is called teacher-controlled method. Similarly, when the degree of control over the teaching-learning environment is more with the learner, the teaching method used is called learner-controlled method. When the degree of control is more with a group of learners, the teaching method being used is called group-controlled method. The Fig. 10.2 presents teacher-controlled teaching-learning environment. Fig. 10.3 presents learner-controlled teaching-learning environment and Fig. 10.4 presents group-controlled teaching-learning environment.

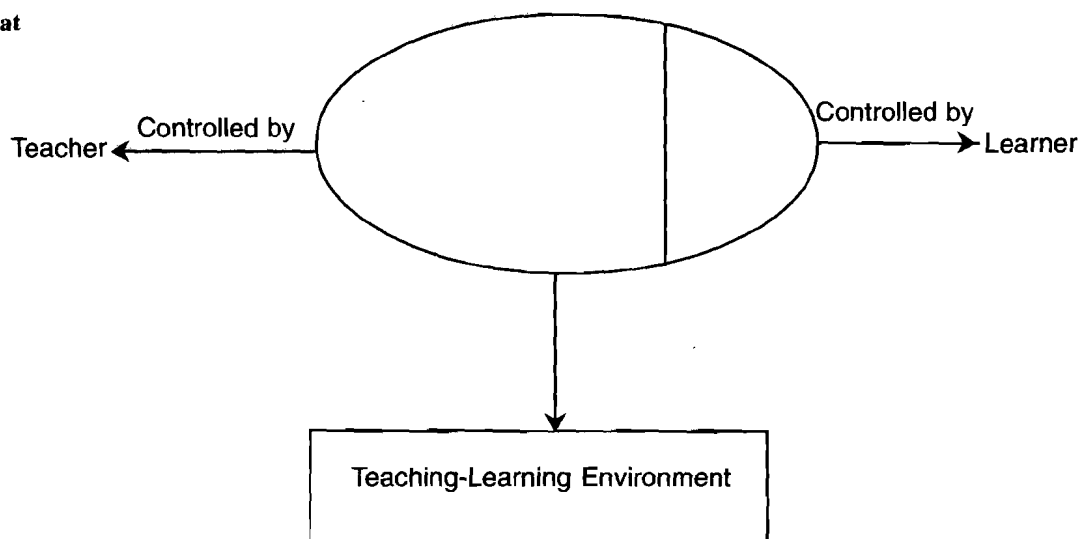


Fig. 10.2: Teacher-controlled Teaching-learning Environment

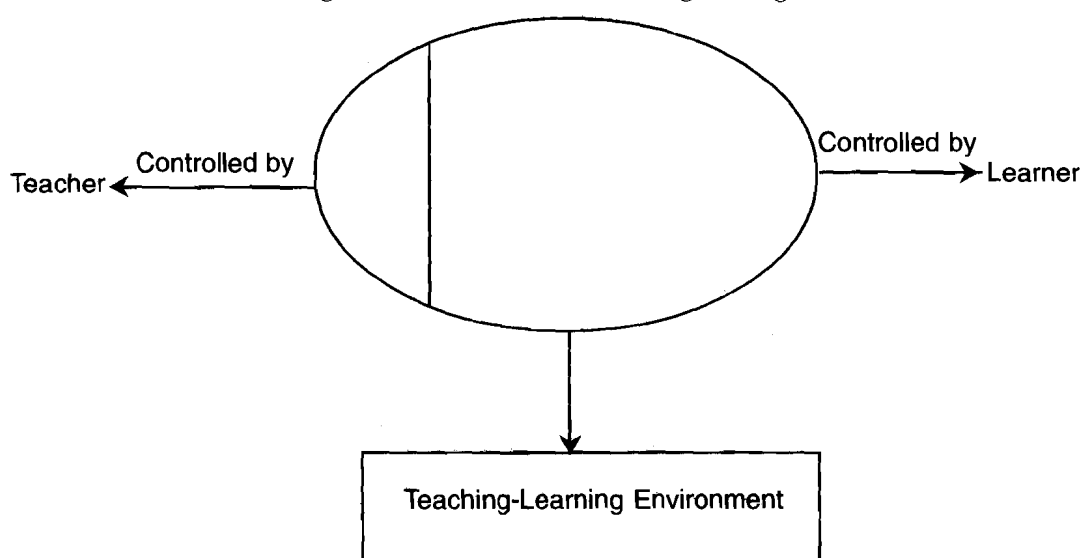


Fig. 10.3: Learner-controlled Teaching-learning Environment

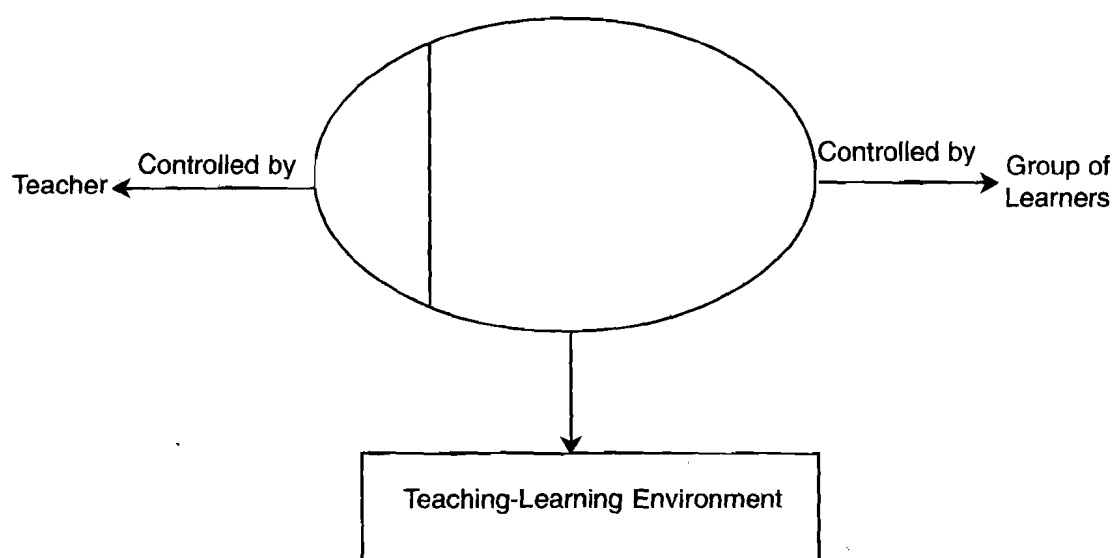


Fig. 10.4: Group Controlled Teaching-learning Environment

Check Your Progress 1

Note: a) Write your answer in the space given below.

b) Compare your answer with the answer given at the end.

1) What do you mean by learning experiences?

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2) What are the major components of the teaching-learning environment?

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3) What is the basis of classifying teaching-learning environment?

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10.5 TEACHER CONTROLLED METHODS

In this section we present four teacher controlled methods. These are lecture, demonstration, team teaching and question- answer methods.

10.5.1 Lecture

The lecture is one of the most common teaching methods used by teachers at the secondary and higher education levels. It is an example of “expository” teaching, in which the teacher who communicates the new information or process directly provides the input. Lecture can be a one-way communication or a two-way communication. It becomes a one-way communication when a teacher talks to the students and it becomes a two-way communication when he/she talks with students. In the Vedic period, lecture was delivered or through question-answer method in Guru-shishya Parampara. In the medieval period, lecture was given by a preacher in a temple or a church as one-way communication. But now, the teacher uses it to integrate with various other methods

and media. The teacher uses it to motivate the students. It is through listening to lectures that students are attracted to different areas of curricular studies.

Organization of a Lecture

The lecture follows some specific steps through which it is carried out. These are planning and delivery. The delivery of a lecture is again divided into three phases: introduction, development and consolidation.

Planning of a Lecture

Planning plays an important role in all human activities. Half of the work is done if it is well planned. Unlike what is commonly believed, the lecture does require systematic planning. Planning a lecture entails a number of activities. The teacher must prepare a lesson plan for the lecture to be delivered. This contains analysis of the content to be taught, the instructional objectives to be achieved, the methods to be adopted, the kinds of communication media to be used, the teaching-learning activities to be organized and the evaluation of students' learning progress etc. Apart from this, the teacher must ensure that required logistics such as chalkboard, OHP, LCD projector, computer, proper seating arrangement, equipments for conduction of science practical are in place. Thus, planning a lecture boosts the confidence of the teacher in handling the class. The teacher plans for humorous interludes, jokes, etc. to make the lecture more interesting.

Delivery of a Lecture

Delivery of a lecture may be done in three phases as follows:

- i) **Introduction of a lecture:** Introductory phase is also called the warm-up phase. The main task of the teacher here is to establish rapport with the students, create interest and motivation among them and gradually lead the learners to the next phase. At this stage the teacher relates the new topic to the one already taught and to the students. He/she may raise a question pertaining to the topic and expects students to answer it, ask students to recall. As summaries has been taught in the earlier class, he/she provides some advance organizer, before proceeding to the topic.
- ii) **Development phase:** The transaction of learning experiences takes place in this phase. The teacher explains the concepts and principles, provides facts, furnishes data and quotes figures, etc. to the learners. In order to explain the content matter, the teacher cites examples, uses communication aids, gives analogies and illustrations etc. In order to ensure students' attentiveness, the teacher maintains eyes and ear contact, move around the room as he/she lectures. The teacher can use humour, visual aids like pictures to break the monotony of the lecture. The teacher can use stimulus variations during lecture. That means he/she can shift room one stimulus to another. For example, he/she can shift from question-answer to group discussion method, from the use of OHP to the use of chalkboards. He/she modulates her/his voice to make lecture effective. Varying the pace of speech and loudness can attract the attention of the students. As and when required, the teacher also adopts different non-verbal communication techniques such as gestures, postures, etc. to facilitate teaching. The teacher can use questions at different cognitive levels such as, knowledge, understanding, application, analysis, synthesis and evaluation throughout the lecture.

- iii) **Consolidation phase:** This is the concluding phase of a lecture. Here the teacher recapitulates whatever s/he has explained; then summarizes the main teaching points of the lecture either verbally or by writing them on the blackboard or by using an overhead projector (OHP). The teacher also asks a few questions on the content matter covered in order to evaluate the students' understanding of the lecture. Thus, the teacher gets to know the learning difficulties of students and accordingly modifies her/his teaching. The teacher also gives some assignments to the students, which they are expected to complete and bring back for the teacher's remarks. The teacher links the topic to those areas, which are crucial to the students in their immediate future.

Advantages of Lecture Method

The lecture method has certain merits for which it can be used in teaching different subject areas. Some of these are mentioned below:

- Lecturing can be used to impart knowledge almost in all subject areas in Sciences, Social Sciences and Humanities.
- Lecturing is a method that can easily be used by people having different personality characteristics.
- This alternative is adaptable to a variable teacher-student ratio. This can be used where there are 5 to 6 students or 100 students.
- The lecture technique is very economical and can be made very effective with proper planning and execution. It can be effectively integrated with other methods and media.

Disadvantages of Lecture Method

- Most of the time, lecture tends to become a one-way communication. This places students in a passive rather than active role. Passivity can hinder student learning.
- It requires a lot of effective writing, speaking and modeling skills on the part of the teacher.
- It places the responsibility of organizing and synthesizing content upon the teacher.

10.5.2 Demonstration

You may be familiar with word 'Demonstration'. It is used by teachers of all subjects at various levels of education. It means showing how something is to be done or not to be done. Through demonstration, a teacher models the behaviours of presentation, analysis and synthesis. The student's role is that of the observer and recorder of information and skills. In schools and colleges, teachers adopt this method especially when something related to the development of skills is required. For example, how to carry out an experiment in science like preparation of oxygen is a skill, which has to be demonstrated. For example, how to draw a map of a country in social studies is a skill, which has to be demonstrated. Recitation of a poem by a language teacher is a skill, which needs to be demonstrated. Demonstrations are most effective when followed by a corresponding student activity. Demonstration involves the art of depicting the skills associated with an action. Sometimes, ideas, attitudes, processes and other tangibles are also demonstrated consciously. Abstract matter like discussing the theme of a novel, organization structure of an institution can be demonstrated. Apart from demonstrating himself/herself, a teacher can make use of audio-visual materials like a film, a diagram or a chart to demonstrate various concepts.

Organizing Demonstration

Organizing demonstration involves preparing for and performing classroom demonstration.

Preparing a Classroom Demonstration

While making preparation for a classroom demonstration the teacher has to:

- Plan a demonstration that will create interest among students.
- Plan every step in the task of demonstration carefully to ensure everything required for demonstration ready prior to the start of the demonstration.
- Relate the task to be demonstrated.
- Outline the various steps of the task to be demonstrated on the chalkboard.
- Make sure that everyone can see and hear, while he/she is demonstrating.
- Prepare written materials, handouts etc. on the task to be distributed. Those materials are to be given to the students at the end of the demonstration.

Performing a Classroom Demonstration

The following points should be remembered by the teacher while demonstrating a skill.

- Communicate properly while demonstrating.
- Keep the demonstration simple and precise.
- Do not digress from the main theme.
- Do not hurry through the demonstration.
- Do not drag out the demonstration too much.
- Make sure that the demonstration is observed by all the students.
- Summarize as the demonstration goes on.
- Distribute handouts in the end.

Advantages of Demonstration

Demonstration makes difficult concepts clear to students. Both teacher and students get a good platform to interact among them. Students observe how **things** happen and manipulate objects with skills. They also acquire a number of social skills such as cooperation, fellow feeling, sympathy and empathy etc.

Disadvantages of Demonstration

It is not effective with large number of students. The teacher, to effectively demonstrate, needs skills and competencies to handle equipment and carry out demonstration step by step. Moreover, the teacher has to make an elaborate plan for demonstration.

10.5.3 Team Teaching

Team teaching is an effective instructional method, though it is not very popular in schools and college. In this method a team of teachers is responsible for organizing learning experiences. It is an innovation in teaching in which two or more teachers plan, execute and evaluate the learning experiences of a group of students. Warwick (1971) defines it as, "A form of organization in which individual teachers decide to

pool resources, interests and expertise in order to devise and implement a scheme of work suitable to the needs of their students and the facilities of the institution". To be brief, team teaching involves a group of persons, or a team instead of an individual, in the instructional process. A team is not just a collection of individuals but a unit in its self-making effort to improve instruction through the reorganization of personnel in teaching. In other words, two or more teachers are given responsibilities, to work together for the instruction of a particular group of students attempting a particular course.

Organizing Learning Experiences Through Team Teaching

Team teaching can be organized through four different ways or styles. These are:

i) Team teaching in the same class period

In this style, the team members discuss the various aspects of the same topic in the same class period. This may bring about the interrelatedness of knowledge through discussions by different teachers from different subjects. The disadvantage with this style is that it may not be workable in institutions where only one teacher is available for each discipline.

ii) Specialization based team teaching

In this style, team members with different subject specializations are responsible for all activities of instruction starting from course formulation to evaluation. The course units can be shared by members of the team, depending upon their interests and abilities. The basic motive behind this technique is to make the best utilization of the available human resources, in terms of subject specialization. For example, while teaching economic life of the people of Indus Valley Civilization a teacher of Economics and a teacher of History can form a team to teach the concept.

iii) Ability based team teaching

Here also, a team is responsible for all the instructional activities. The sharing of units is not done according to subject specialization, but according to abilities involved in teaching activities. With reference to different instructional inputs, there are different abilities and skills involved in activities like lecturing, conducting seminars, guiding discussions, giving demonstrations etc. which are required on the part of the teachers. For example, while teaching the impact of environmental pollution, a teacher can take the lecture session on the topic, whereas another teacher may organize a group discussion or a seminar on the same topic.

iv) Relay style of team teaching

In this approach, another teacher follows a teacher after s/he completes teaching of a unit. In this process, two or three teachers are involved in the teaching of a particular course. Here, the division of work is neither according to subject specialization nor according to the abilities of the members of the team. This approach may not at first glance, appear to have much instructional value, but the worth of it lies in the fact that it can be easily adopted as a beginning in institutions where team teaching is not in practice.

10.5.4 Questioning

Questioning is a powerful technique which can be used in teaching any subject areas. It makes teaching-learning process more interactive and meaningful. Through this technique, the teacher transacts a lot of learning experiences. The teacher asks questions and the students respond to the questions. The teacher provides feedback-both positive

and negative- on the responses of the students. Questions can be used to find out how well students understand a particular block of information, to shift student's attention from one point to another, to increase retention of important points by isolating and emphasizing them, and to put students in the right direction before starting assignments. Questioning facilitates high order thinking skills like analysis, synthesis and evaluation in the students. Questioning can be used to develop a concept, to understand a principle, or to arrive at some conclusions.

Organization of Learning Experiences Through Questioning

In order to organize learning experiences effectively through questioning, the teacher may take the following steps:

- i) **State the question clearly and precisely:** A question must be clear and precise. There should not be any ambiguity in the question. For example, a question "What about Idealism and Naturalism?" does not convey any meaning to the students. It would be better to ask, "How does Idealism differ from Naturalism?"
- ii) **Pause after asking the question and allow it to "hang overhead":** The teacher should ask the question clearly and then pause before calling on someone to respond. This helps students to think about their answer.
- iii) **Call on students at random:** While calling on students, the teacher should not follow any specific pattern such as seating arrangement, alphabetical arrangement, etc. Rather, S/he should call on students at random.
- iv) **Provide immediate feedback to students:** The teacher should give immediate feedback after receiving students' responses. S/he should tell the students if the response is partially correct or wholly correct.

Questions can be asked at various levels of Blooms' Taxonomy of Educational Objectives.

- i) **Knowledge (or simple recall):** "Where is the Iron Pillar situated?"
- ii) **Comprehension (or understanding):** "What do you mean by sovereignty?"
- iii) **Application (using information):** "What would be the time in London when the time in New Delhi is 6.00 a.m.?"
- iv) **Analysis (or pulling an idea apart):** "What is the impact of the British rule on independent India?"
- v) **Synthesis (putting together something new):** "How would you have improved upon Germany's strategy during the Battle of Britain?"
- vi) **Evaluation (making and defending a judgement):** "Are you in favour of globalization and why?"

Questions can be asked according to the following categories:

- 1) **Probing questions:** A teacher can use probing questions to motivate students to go beyond their responses and help themselves in solving the problem. For example, to students' responses, like "Barter economy means exchange of goods for goods." The teacher may say "Good" and ask the students to explain what they mean by exchange of goods for goods. Then he/she may ask them to provide an example of "barter economy".

- 2) **Open-ended questions:** These questions have definite right or wrong answer. Students are free to think on their own and provide answers with logic. A question like "What will happen to the Himalayan glaciers if the temperature on the Earth increases?" may be asked to the students.
- 3) **Convergent questions:** Convergent questions are designed to "converge" on a particular idea or point and are meant for inducing a principle or deducing an answer. An example of a convergent question is "How has liberalization affected Indian economy?"
- 4) **Divergent questions:** Divergent questions are helpful to draw a student's attention away from one point and allow it creative freedom to settle on a different but related point. "What would happen to the Earth if the ozone layer is depleted?"

Check Your Progress 2

Note: a) Write your answer in the space given below.

b) Compare your answer with the answer given at the end.

- 1) Does teacher-controlled teaching-learning methods discard the role of the learners in the learning process? Substantiate your answer?

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- 2) Why is lecture method preferred by many teachers?

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- 6) Why should team teaching be adopted as a method of organizing learning experiences?

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- 7) What are the merits of questioning method?

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10.6 LEARNER CONTROLLED METHODS

10.6.1 Programmed Instruction

Programmed instruction or programmed learning emerged out of the research conducted by B. F. Skinner on operant conditioning. According to this theory behaviour is learned only when it is reinforced. Therefore the tasks of the programmer are to provide contingencies of reinforcement so that correct responses to the questions presented are immediately rewarded and incorrect responses are ignored. The contents to be learnt are divided into small bit of information and presented in frames. Each frame carries a question to which the learner has to respond. The learner's response is reinforced by feedback in the next frame. The learner learns according to his/her own space. Learning is individualized in nature. There are mainly two styles of programmed instruction, namely, linear and branching styles. Let us discuss both these styles through examples of linear and branching programmes.

Example of Linear Programming

Sl. No. 1. There are two ways of presenting the frames. In one style, the first frame leads to the second, the second to the third and so. This leads to a sequence that resembles a straight line until the student acquires the whole information. See the example in the box wherein six frames are sequenced in a linear fashion.

F1→F2→F3→F4→F5→F6→

This type of presentation in which frames appear sequentially one after another in a line is called a frame.

(Go to frame 2)

Correct
answer: linear

2.

In the linear frame, after the information has been provided, there is always a question which may be like 'fill in the blanks' or 'one word answer' to be responded by the student. There is always a blank or a question in aframe for the student to respond.

(Go to frame 3)

Correct
answer: linear

3.

Whether it is a blank or a question, the student has to answer. The activity on the part of the student to complete a blank or to answer a question in a linear frame is called ase.

(Go to frame 4)

Correct
answer: response

4.

As mentioned earlier, this feature of the question and response provides scope for active participation on the part of the students. In the frame, you participated in the instructional process by writing the word response.

Source: Menon, M.B. (1984). *Evolving a multimedia approach to teaching at postgraduate level*, Vol. II, Ph. D Thesis (Unpublished), M.S. University, Baroda

Example of Branching Style

	1.	Examine the frame you are reading at present. Is it an example of a linear frame according to the descriptions given earlier for such frames? Yes, it is – go to frame 3 No, it is not a linear frame - go to frame 2
correct answer:	2.	That is right. It is not a linear frame. You had to choose one of the two alternative answers provided to decide your next frame. Not a linear frame. if you had answered.....you would not have come to this frame. (Go to frame 4)
not a linear frame		
	3.	No, the last frame was not linear because in a linear frame, there is or blend or question to which the student has to respond and he is invariably taken to the next frame in the sequence. Hence the last frame was. (Go to frame 2)
correct answer:	4.	It was a different type of frame .the pattern was different from a linear frame. In a diagram below, Frame 4 gives two alternatives to the student. It has a provision for branching. See the figure here.
Yes		<pre> graph LR Start(()) --> F4 F4 --> F6 F6 --> F7 F4 --> F5 F5 --> F7 F7 --> End(()) </pre> As there is a provision for branching in frame 4, it is known as a Frame. (Go to frame 5)
Correct answer:	5.	What about the last frame where we brought in the word 'branching'. Was it a branching frame or a linear frame? Linear- go to frame 6 Branching –go to frame 7
branching		
Correct answer:	6.	That is right, it was not a branching frame. In a branching frame the student is provided two or more possible responses and he 'branches 'off according to the response he chooses. For example, look at the picture.
linear		<pre> graph LR F5 --> F6[F6 Incorrect answer] F5 --> F8[F8 Correct answer] F5 --> F7[F7 Incorrect answer] </pre> The student goes to two or more different frames according to the choice in the case of a branching frame.
	7.	No, it was a linear frame. It has all the characteristics of a linear frame namely, a blank space was provided for the student to respond and all the students were invariably taken to the next frame. As the above mentioned characteristics were satisfied by the said frame; it was aframe. (Go to frame 6)

Source: Menon, M.B. (1984). Evolving a multimedia approach to teaching at postgraduate level.
Vol. II Ph .D Thesis (unpublished), M.S.University, Baroda.

Stages for Development of Programmed Learning Material

There are three major stages involved in the development of programmed learning material. These are:

- Planning and preparation of the programme.
- Writing of the programme.
- Evaluation of the programme.

Let us discuss each stage in detail so that you acquire the skill of preparing programmed instruction material for your students.

Planning and preparation of the programme: This stage involves a few specific activities. These are as follows:

First you have to select the topic, which is to be programmed. This selection depends on the style of programming to be adopted, the scope of the use of the programme, the field of specialization of the programme and so on.

Second, you have to find out the characteristics of the target population, namely, their age, gender, interests, intellectual level, experiences, cultural background etc.

Third, you have to undertake task analysis of the topic selected for programming.

Fourth, you have to specify the instructional objectives in observable and measurable terms.

Fifth, you have to write criterion questions for all the objectives in observable and measurable terms, which form part of the pre-and post-tests to be administered when the programme is gone through by the student. It provides a basis for evaluating the effectiveness of the programme.

Last, you have to arrange each step/frame/teaching point in a logical sequence. Each teaching point should contain new information. Also, you have to look into the type of learning involved within each teaching point. This is important, as you have to design the instructional strategy accordingly.

Writing the programme: The next important task in programme development is writing the programme. Generally, the teachers prefer either linear or branching style. But, sometimes one does find a combination of both the styles in a programme. So the first decision you have to take is whether you want to follow linear style or branching style or a combination of both. The second task is to take a decision on frame development. There are mainly four types of frames, which find place in a programme. These are:

- **Introductory frames** – The frames are used to introduce information experience.
- **Teaching frames** - These frames provide new knowledge to the students.
- **Practice frames** – These frames provide opportunities to the student to practice what he/she has learned from the teaching frames.
- **Testing frames** – These frames are developed to assess the knowledge gained by the student. The testing feedback will provide information about the level the student has achieved in terms of pre-fixed objectives.

While developing frames, you should pay attention to the following principles:

- Prompts or cues, wherever necessary, should be used to help the learners in selection of right answers. The prompts will help the student to commit minimum errors.
- Superfluous or irrelevant material in the programme must be avoided in order to achieve the objectives of the programme.
- Learning material should be presented in a sequence of small learning steps (frames), each step representing a learning point.
- Immediate feedback should be provided after each response to assist the study to know whether or not he/she is progressing properly.
- The objectives should be spelt out at the beginning of the programme. The study should be allowed to proceed at his/her own speed.

While sequencing the material, you may take two approaches into consideration.

- The first is expository or **Rule-eg** approach in which the rule or principle presented first followed by an example. The second is discovery or **Eg-rule** approach in which an example is given first and it is followed by the rule principle illustrated by the example.
- Prompt: we have already pointed out that while writing the programmed instruction material, prompts or cues should be used to help the students in the selection of the right answers to the questions. It is, therefore, appropriate for you to know the meaning of a prompt. A prompt is stimulus in a frame, which increases the probability of the correct response. Let us understand the concept of prompt with the help of the following examples.
- The device in the frame which increase the probability of correct response is called pr.....
- The capital of France is P.....

Thus, the role of a prompt is to facilitate the probability of a correct response. The incomplete words will the student to provide the correct answer.

Editing the programme: Once that first draft of the programme is ready, you should ensure that the draft is thoroughly edited by the experts. The editing exercise helps in improving the quality of the programme. The benefits of editing are as follows:

- Elimination of ambiguities and inadequacies in the programme.
- Improvement in the logical sequence of the frames.
- Improvement in the technical accuracy of the programme.
- Examination of the appropriate use of maps, charts and illustration etc. in the programme.

Evaluation of the programme: When the writing of the programme is over, the next, for you, is evaluation of the programme. Evaluation of the programme is carried out to assess the efficiency and effectiveness of the programme. The evaluation exercise is divided at three stages. These are:

- a) **Individual testing:** At this stage, the testing is done on one-to one basis. This may be you, as the programme designer and one representative to the target group for whom the programme is meant, are involved in the testing activity. At the outset we should tell the student the purpose of the testing and establish good rapport with him/her. Then you should ask the student to read the frame and respond loudly. When a particular frame is read by the students, you should ask about difficulties faced by him/her and those difficulties should be discussed with the student. Thus, you will be able to locate the inadequacies in the programme, while doing so; you will be able to eliminate those inadequacies.
- b) **Small group testing:** After making necessary modification/improvements in the draft programme on the basis of individual testing, the programme is ready to be tested on a small group of students, say 5-6 students. For this activity you have to give necessary instructions and guidance to the students. At the beginning of the programme, students are administered a pre-test and at the completion of the programme, students are administered a post-test. The data collected from pre-test and post-tests are analysed to assess the effectiveness of the programme.

Necessary improvements in the programme should be made on the basis of the results of the testing.

- c) **Field testing:** This is the last stage of testing the programme. At this time the programme is

administered on a large group of the target population. Pre-tests and post-tests are administered prior to starting and after the completion of the programme respectively. The data thus collected from testing are analysed and the programme is modified and made ready for use.

10.6.2 Project Work

Project work constitutes an important learner controlled method. According to Good (1973), referred in Vedanayangam (1988), "A project is a significant practical unit of activity having educational value and aimed at one or more definite goals of understanding involves investigation and solution of problems and frequently the use and manipulation of physical materials, planned and carried to completion by pupils and teachers in a natural real-life manner." Thus project work provides real-life experiences to the students to help them plan, to observe and to conceptualize. The project work may be of different types.

Organizing Project Work

Project work is an effective instructional method, which requires participation of both the teacher and the students. With the initiative and direction of the teacher, the students can be fruitfully engaged in the project work. Let us discuss what is expected of a teacher while organizing project work. There are different types of project works, which are organized in schools and colleges. These are:

- i) Library Work
- ii) Laboratory Work
- iii) Field Work

Preparation for Project Work

When preparing for the project work, the teacher should help the student to perform the following tasks:

- Selection of appropriate subjects/skills/procedure/problems/topic for the projects.
- Offering students a choice of subjects/skill/procedure/problem/topic.
- Formulating objectives of the project in clear terms.
- Listing the resources and guiding how to locate and use those resources.
- Sequencing the work efficiently.
- Time-tabling the project realistically.
- Organizing an adequate record system.
- Organizing and explaining the assessment schedule.
- Formulation of evaluation criteria.
- Outlining evaluation procedures.

With the preparation of the above tasks, the teacher should be able to set the stage for implementation of the project. At the implementation stage also, the teacher is expected to perform a number of tasks.

Tasks at the Implementation Stage: The tasks performed by the teacher during the implementation of the project are as follows:

- Organizing a preliminary briefing session for the students. Forming groups for group projects.
- Helping every students select a topic/subject for the project.
- Assisting every student to plan the project by checking the plan outline, eliminating weaknesses, correcting work sequences, suggesting optimal use of resources, checking feasibility of the time-table, suggesting appropriate sources of information etc.
- Checking every student's progress regularly.
- Suggesting modifications to plans when necessary.
- Encouraging and assisting individual student frequently.
- Checking student's evaluation procedures.
- Assessing the project in accordance with the planned scheme.
- Evaluating the whole project with other students including the project report, project product or procedure.
- Organizing an effective group debriefing session.
- Evaluating the efficiency and effectiveness of the project as a learning activity.

Evaluation of Project Work

Evaluation of project work involves both the processes and the product of the project. The product of the project may be some concrete material or the project report.

Role of a Student in Project Work

The student has to play an important role in project work. Though you are there to help him throughout, the main responsibility of carrying out the project work lies with the student. There are three major stages the student has to work through while carrying the projects are:

i) Planning Stage

At the planning stage, the student has to consider the following tasks:

- The student should have a clear idea of the objectives and the criteria of the project.
- If there is any ambiguity, S/he should seek your help.
- S/he should carry out a task analysis of the project in terms of skill(s), problem(s) or procedure(s).
- S/he should design a suitable plan, strategy or method for dealing with the project.
- S/he should arrange the tasks in a sequence and fix a target date to complete the project,
- S/he should discuss with the teacher various aspects of planning.

ii) Implementation Stage

- Collect all necessary information
- Decide about suitable methods of enquiry
- Use resources such as equipment, materials, available expertise etc.
- Cooperate with other students in case of group project.
- Carry out the processes involved in the project, namely, analysis, synthesis, application, decision-making, problem solving etc.
- Stick to time schedule prescribed for the project.
- Secure help and guidance from the teacher throughout the implementation stage.

iii) Reporting Stage

- Interpret information and use materials properly. Draw appropriate conclusions.
- Compile an effective project report.
- Present the report, product, procedure, decision or solution effectively.

10.6.3 Computer Assisted Instruction (CAI)

The computer is a very useful device for teachers at different levels to provide variety, enhance student motivation and individualize instruction. The computer is ideal for developing questionnaires and surveys, writing reports and outlines, summarizing data in charts or graphs and making the calculations required for analysis of data. In computer-assisted instruction, the computer provides instruction directly to the student and allows him to interact with it through the lessons programmed in the system. Students put questions to the computer and feed answers into it with the help of the keyboard. The computer provides feedback to the student on the basis of his performance. In order to carry out this teaching- learning function, the computer utilizes various instructional modes. These modes are.

i) **Drill and Practice**

In this mode, the computer presents to the student a series of exercises which he or she attempts by giving some responses. It provides the student feedback on his/her answer in the form of a congratulatory message if it is right, or corrective comment if it is wrong. For example, CAI packages could be developed on topics like Indus Valley Civilization, Photosynthesis, Environmental Pollution etc and students would be allowed to learn through drill and practice.

ii) **Tutorial Mode**

In the tutorial mode, information is presented in small steps followed by a question. The student's response is analyzed by the computer and appropriate feedback is given. Computer programmes in the tutorial mode could be developed and used for providing individualized instruction

iii) **Simulation Mode**

Learning experiences related to real life phenomena are provided to the student through this mode. For example, the flow of a river from its origin could be very well simulated through computer simulation.

iv) **Discovery Mode**

This mode is the inductive approach to learning in which problems are presented and students solve them through the trial and error method. The discovery mode is very useful for teaching geographical concepts, principles etc.

v) **Gaming Mode**

In the gaming mode, teaching can be imparted through play way method. This mode is very effective for or teaching different subjects. Computerized games could be developed in which students assume roles as pioneers, explorers, government officials, mathematicians and scientists. Games offer students a number of decision-making situations and motivate them to learn many specialized skills. Moreover, students enjoy learning from this mode.

Check Your Progress 3

Note: a) Write your answer in the space given below.

b) Compare your answer with the answer given at the end.

8) What is the main contribution of Skinner's Theory of Operant Conditioning to the organizing of learning experiences?

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9) Differentiate between linear and branching methods of programmed learning.

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10) How can computer-assisted instruction be used to individualize instruction?

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10.7 GROUP CONTROLLED METHODS

There are a variety of group-controlled methods. In group-controlled methods, the learning tasks are assigned to a group of learners. The group is responsible for planning and organizing the learning task. However, the teacher is always there to provide support at every stages of the group work. Let us discuss some group-controlled methods.

10.7.1 Discussion

The simplest form of group-based learning method is the discussion, which can be used in a variety of situations in both secondary and higher education context. The strength of discussion lies in the broad participation of members of the group. It is responsibility of the teacher to encourage all students to participate. For example, situations like giving feedback on the responses of a class test, clarifying the doubts of students at the end of a lecture, resolving the debatable issues raised during the lecture generating alternative solutions to a classroom problem and breaking the monotony of "teacher talk" are some of the situations in which the discussion technique could be used.

Organization: For effective utilization of this technique, the teacher should give sufficient background information so that they already possess it and are ready to use it in the discussion. This is a primary requisite for a discussion to take off. A discussion cannot operate in a vacuum of information. The ability of the teacher to initiate a discussion often decides the ability to postpone. He/she may give his/her judgement later on the issue being discussed and the responses of individual students. The teacher's judgement, through even a non-verbal clue, can affect the nature and pattern of responses.

Instructional potential: It can develop higher cognitive abilities effectively apart from reinforcing knowledge. The uniqueness of this alternative lies in its simplicity, but its effectiveness is related to the abilities of the moderator or leader.

10.7.2 Debate

This alternative is especially suitable for controversial themes or issues and for developing certain skills like logical arguing, weighing evidence etc. in students. Debates may be organized for topics like:

- i) Should foreign Universities be allowed to set up their campuses in India?
- ii) Is the Presidential form of government better than Parliamentary form of government?

Organization: The students could be divided into two groups, one for a proposition and the other against it. The remaining students can form the audience. Towards the end, the audience can involve themselves in a short discussion.

Instructional potential: The uniqueness of this alternative lies in its ability to involve the students to a very high degree in terms of gathering information, processing it and presenting to the audience, proposing, arguing and counter arguing, specially by the previous speakers.

Symposium

This alternative is suitable for teaching topics or themes having various dimensions. A symposium may be arranged on such topics as:

- i) Impact of Globalization on Higher Education in India,
- ii) Revamping the present day examination system.

Organization: Selected students and different staff members can form teams to make presentations. Each team would present a different dimension of the same theme, one by one, in pre-planned sequence. It would then be thrown open to the "floor" for discussion. A chairman initiates and regulates the proceedings.

Instructional: As mentioned earlier, the uniqueness of this alternative lies in its suitability for teaching multidimensional themes or topics and thus it provides a wider perspective to the learners.

10.7.3 Panel Discussion

When the themes or topics are of a very complex or controversial nature, a panel discussion is a good choice as it brings out difficult aspects in a constructive manner. Panel discussion may be organized on such topics as:

- i) Introduction of grading system in the place of marking system.
- ii) Lowering of voters' age limit from 21 to 18.
- iii) Future of the United Nations in a changing world.

Organization: Members of a panel could be selected students or teachers or both. Questions regarding a topic or a series of topics could be collected in advance from among the students. The questions are given to the panel members in advance depending on their expertise on the sub-themes or sub-topics so that they come prepared with answers/evidences etc. A moderator initiates the discussion by explaining the purpose and scope and raises questions in a predetermined order to various members of the panel, then the members of the panel present their views one after the other. Later on each member may also react to others' views. In the end, the different viewpoints and interactions are synthesized and summarized by the moderator.

Instructional potential: The uniqueness of this alternative lies in its ability to resolve issues and seek clarifications of controversial and multidimensional topics and themes.

10.7.4 Brainstorming

This alternative is useful in developing the creative abilities of students. Problems, which demand creative or innovative solutions, can be presented by the teacher to the students for brainstorming. For example, a science teacher asks students of class VIII to tell the consequences of global warming on the climate of the earth. Students come out with a list of consequences of global warming. The teacher writes them on the Chalkboard or on a chart or on OHP transparency which can be projected. He/she does not give any comments or judgement on the list. He/she asks the students to select the right consequences with justification for the same.

Organization: In a classroom, the teacher can select a problem-oriented topic and ask students to express themselves freely on various aspects of the topic. The teacher assures students that their expressions will not be criticized or commented on in a negative way. Students should be encouraged to freely come out with their viewpoints. The teacher takes note of all these expressions. After the sessions, or preferable on another day, the teacher may evaluate, elaborate and integrate the ideas exposed in order to encourage further thinking among the students along newer dimension.

Instructional potential: This technique helps students to think creatively and is suitable for problem-oriented themes.

10.7.5 Tutorials

There are situations when students require the help of the teacher in carrying out assignments, project work and understanding difficult learning tasks. In such cases, tutorials are very helpful. Tutorials are generally used as group-controlled teaching methods at college level.

Organization

Tutorials are informal group situations in which the teacher works as a guidance worker rather than a teacher with formal approach. S/he solves the problems of the student either individually or in a group. Students discuss their problems and seek clarifications from the teacher. The tutorials are very helpful for planning and implementing co-curricular activities.

Instructional Potential

The uniqueness of this method is that it can be used for a variety of purposes. This is useful in solving educational and personal problems. This is highly flexible in terms of its organization and implementation. The effectiveness of this method depends upon the interpersonal relationships of the group members.

10.7.6 Simulation Through Role Playing

This alternative is of use in developing many skills in students like decision-making, communication, building inter-personal relationships and other composite skills.

Organization: Simulation is an alternative, which has many facets, like instruction through mechanical simulators, computer controlled simulators, educational games and role applying. Here we would discuss about simulation through role-playing as an input alternative. Life-like situations can be simulated inside a classroom, by assigning different roles to different students and asking them to play these roles after giving them the background of an episode. Unlike a stage drama, there are no fixed dialogues and so creative expressions of the students will be encouraged within the parameters of the role that they play.

Instructional Potential: The uniqueness of this technique lies in its ability to develop skills using life-like composite problems without causing any dangers or damages to the learners.

10.7.7 Cooperative Learning Method

Cooperative learning method is a group-controlled learning method in which students learn in cooperative groups. These groups are assigned learning tasks that are to be performed by the members collectively. The groups comprise usually four or five members working together towards the learning task. Each member of the group is accountable and responsible for the attainment of the learning objective. The essence of the cooperative group is the development and maintenance of positive interdependence among team members. The group members should engage in team building activities and acquire social skills like cooperation, fellow feeling, leadership etc. for effective teamwork. Cooperative learning also leads to development of interpersonal skills among group members. It also helps group members transcend the gender, racial, linguistic and other differences they may have among themselves.

Organizing Cooperative Learning

While organizing cooperative learner, a teacher should follow the following steps:

- i) **Formation of groups:** The class should be divided into small groups of four or five members keeping in mind the heterogeneity of students in respect or sex, intelligence, socio-economic background etc and also the level of intelligence such as gifted, average and slow learners etc.
- ii) **Preparation of cooperative learning sheets:** These sheets should contain the objectives of the learning tasks, activities to be done by the members according to the content of the topic and evaluation items based on the objectives.
- iii) **Orientation to the students:** Students should be given proper orientation about their role while working on the learning tasks. Learning points are to be discussed collectively. Every one should help each other in performing the learning task and ensure that each one is benefited by the learning tasks. The performance of the group will not be evaluated individually.
- iv) **Conducting cooperative learning session:** For accomplishing a given learning task, time should be allotted. Group members are provided with learning sheets containing guidelines to perform the task. While members are engaged in the learning tasks, the teacher should observe them, provide feedback and lead them in the right direction. After the learning task is accomplished, the group prepares a report and presents it to the teacher for evaluation.

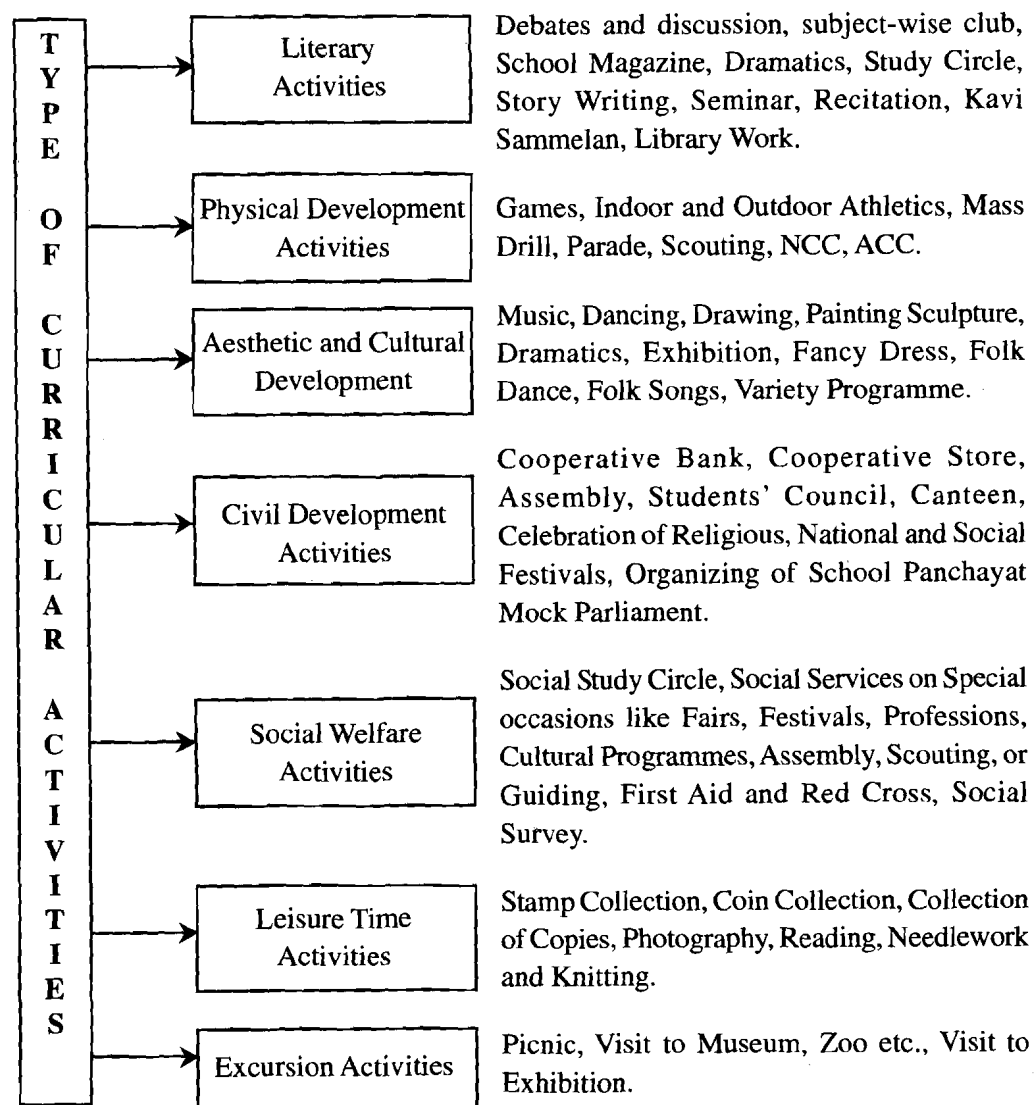
10.8 ORGANIZING LEARNING EXPERIENCES THROUGH CO-CURRICULAR ACTIVITIES

As you know, students get engaged in a lot of activities such as drama, music, debate, social campaign, athletics, etc. These outside classroom activities are as important as those inside classroom activities. Without these activities, the true aims of education cannot be achieved. They in fact supplement the academic curriculum, hence are called co-curricular activities.

10.8.1 Types of Co-curricular Activities

Co-curricular activities are categorized under seven headings:

- 1) Literary Activities
- 2) Physical Development Activities
- 3) Aesthetic and Cultural Development Activities
- 4) Civic Development Activities
- 5) Social Welfare Activities
- 6) Leisure Time Activities
- 7) Excursion Activities



10.8.2 Organization of Literary and Cultural Activities

How to organize these activities? What are the points to be kept in mind to make these activities meaningful and effective?

For organizing the following points need to be considered:

- Students should feel the need for activities and should demand them.
- Activities should be selected keeping in view students' interests. There are a number of activities and there are also differences in students' interests and liking. An activity should be selected in such a way that all students are able to participate i.e. there should be maximum involvement. More and more students should be involved. Activities should be such that all students are able to participate.
- A teacher should help students plan and organize co-curricular activities. Students should do the ultimate planning and implementation.
- Activities should be worked out for the success of the programme.
- Activities having educational value should be selected. The selected activities should support and enhance classroom learning.
- Activities selected should be such that they provide opportunity to students to learn and also to become self-reliant.
- Activities should not be imposed on students. They have to be selected by students themselves.
- Students should meet and discuss such aspects as the venue, data and resources available.
- Objectives of activities should be made clear.
- Various sub-committees should be formed e.g.
 - 1) Stage committee
 - 2) Decoration committee
 - 3) Seating arrangement
 - 4) Reception committee
 - 5) Invitation committee
 - 6) Overall organization
- Work has to be allotted to various committees depending upon abilities of persons.
- Activities should be supported by teachers, principal, parents, community members and management.
- The rules and regulations regarding activities should be mentioned well in advance to the students.
- The best participants are to be identified.
- Activities should be planned year wise so that they find place in institution's calendar, and that parents know their dates in advance.
- Expenditure on activities should be borne by the institution only. Only in unavoidable circumstances students may be charged.
- Records of the activities should be kept.

In order to make co-curricular activities successful, what should be the contribution of the institution?

The institution should provide necessary facilities and infrastructure, and a dark room to show T.V. or films. It should provide necessary equipment and allocate proper time for various activities. It should also provide required stationery and provide financial help. Apart from all these, it should reduce the workload of teachers in charge of co-curricular activities.

Now let us look at how the physical education activities are organized.

10.8.3 Organization of Physical Education Activities

Physical development is a crucial and important aspect of human development. A sound mind rests in a healthy body. Physically, a person has to be fit in order to concentrate on various activities. So physical training has become one of the important aspects of school education. Physical development activities include mass drill, parade, NCC, sports, indoor as well as outdoor games. Indoor games include chess, table tennis, badminton, etc. Outdoor games include kabadi, cricket, kho-kho, football, volleyball, hockey, etc.

Now we will discuss how to organize games and sports in educational institutions like schools and colleges.

Sports and games should be properly organized in each school or college. Activities of the entire year have to be planned out and also term wise charts should be prepared. Games have to be selected, depending upon available resources. The season must be kept in mind while selecting the games. For instance, outdoor games cannot be played in rainy season and every sport should be planned according to need, facilities, equipments and finances available. Rule and regulations have to be obeyed.

Teachers should get appropriate representation in sports' committee. They should prepare students for inter-school or inter-college competitions. They should point out strong points and should also point out where improvement is needed.

It may be emphasized that it is ultimately the responsibility of the headmaster or the principal of the college to ensure that adequate facilities for sports and games are available in the school or the college. He/she is also to ensure that each student chooses one or the other game or physical activity of students and provide them with necessary guidance.

In short, all students should participate in sports and arrangements for them have to be made. Every student should get an opportunity to play.

Check Your Progress 4

Note: a) Write your answer in the space given below.

b) Compare your answer with the answer given at the end.

7) Differentiate between debate and brainstorming.

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- 8) What is the need of organizing co-curricular learning experiences in the schools and colleges?

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10.9 LET US SUM UP

Right from birth human beings go on experiencing various, objects, events and phenomena. Most of these experiences contribute to the shaping of his/her behaviour and personality. Those learning experiences, which shape human personality in a positive manner, are said to constitute learning experiences. Although human beings receive learning experiences from a wide variety of situations, society has created formal learning institutions like schools and colleges to impart learning experiences in a organized manner. In formal educational institutions, learning experiences are organized through curricular and co-curricular methods. Methods of organizing curricular learning experiences can be classified into teacher-controlled, learner-controlled and group-controlled learning methods. Teacher-controlled learning methods are lecture, demonstration, team teaching, and questioning. Learner-controlled learning methods are programmed instruction, project work, and computer-assisted instruction. Group-controlled learning methods are discussion, debates, panel discussion, brainstorming, and role-play methods. There are various co-curricular learning experiences, which are organized in schools and colleges. We have briefly discussed organization of literary and physical activities in educational institutions.

10.10 UNIT END ACTIVITES

- 1) Visit any school or college in your locality. Discuss with the headmaster or the principal as well as the teachers of the institution regarding the various methods being used by them in transacting curricular and co-curricular learning experiences.
- 2) Identify a topic from any subject from secondary school curriculum and develop Programmed Learning Material (PLM) on the topic using branching style.
- 3) Organize the following group controlled methods in a school
 - a) Debate
 - b) Seminar
 - c) Brain storming
 - d) Cooperative learning

10.11 SUGGESTED READINGS/REFERENCES

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10.12 ANSWERS TO CHECK YOUR PROGRESS

- 1) Learning experiences are those experiences, which contribute to the positive shaping of human behaviour.
- 2) The major components of the learning environment are teacher, learner, learning experiences, methods and media.
- 3) Learning environment is classified into three categories based on the degree of control over the learning environment either by the teacher or the learner.
- 4) No, the role played the learners is less in comparison to that of the teacher.
- 5) Lecture method is preferred by many teachers as it can be used in many subject areas, is easy to handle and can be adaptable to variable teacher-student ratio.
- 6) It is said that two or more minds are better than one. Team teaching which is organized by two or more than two teachers help in the effective organization of learning experiences.
- 7) The questioning method facilitates higher thinking, increases retention of important ideas, and guides students in better understanding of concepts and proposition.
- 8) Individualized instruction or Self-learning
- 9) In linear method, students are directed to proceed from one frame to the next frame while learning the task, whereas in branching method, students are directed to branch off from one frame to a different frame according to the responses s/he chooses.
- 10) Computer-assisted instruction can be used to individualise instruction by different modes such as drill, tutorial, simulation, discovery, and gaming.
- 11) Debates are organized for controversial topics. There are two groups. One group speaks in favour of the topic and the other speaks against the topic. When students are to find out solutions to a new problem, brainstorming is used as a method of teaching.

This is to acknowledge that Unit 10 has been developed with the help of inputs from MES-102 Instruction in Higher Education, ES-343 Teaching of Social Studies and ES-335 Teacher and School Courses of the School of Education, IGNOU, New Delhi with necessary modifications.

UNIT 11 ORGANIZING LEARNING EXPERIENCES AT MICRO-LEVEL THROUGH ODLS

Structure

- 11.1 Introduction
- 11.2 Objectives
- 11.3 Self-Learning
- 11.4 Characteristics of Self-Learning Materials
- 11.5 Design of Self-learning Materials
 - 11.5.1 Unit Structure
 - 11.5.2 Major Parts of a Unit
 - 11.5.3 Formative Evaluation
- 11.6 Academic Counselling
 - 11.6.1 Stages of Academic Counselling
 - 11.6.2 Media for Organizing Academic Counselling
- 11.7 Assignments
 - 11.7.1 Types of Assignments
 - 11.7.2 Evaluation of Assignments and Assignment Comments
- 11.8 Audio and Video Programmes
- 11.9 Project Work
- 11.10 Practical Work
- 11.11 Emerging Technologies
 - 11.11.1 Teleconferencing
 - 11.11.2 Mobile Communication
 - 11.11.3 Interactive Radio Counselling
 - 11.11.4 CD-ROMs
 - 11.11.5 Online Learning
- 11.12 Let Us Sum Up
- 11.13 Unit End Activities
- 11.14 Points for Discussions
- 11.15 Suggested Readings/References
- 11.16 Answers to Check Your Progress

11.1 INTRODUCTION

In Unit 9, we discussed various means of providing learning experiences to learners in face-to-face mode, where the transaction of learning experiences takes place between teacher and learners both inside and outside the classroom. Teacher interacts with learners and provides them new learning experiences using a variety of methods, techniques, models, media and strategies. But this process of imparting learning experiences is not feasible when learning takes place at a distance. In other words, teacher and learners are far away from each other. They do not meet face-to-face on a regular basis, although there is a provision of meeting occasionally. Still then, transaction of learning experiences can take place between teacher and learners through a variety of means. The system of learning we are referring to is open and distance learning system (ODLS). ODLS makes use of different instructional methods and media to provide

distance learners learning experiences pertaining to all aspects of human learning-cognitive (knowing), affective (feeling) and psychomotor (doing). In this unit, we shall discuss the ways learning experiences are organized in ODLS.

11.2 OBJECTIVES

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

- define self-learning and identify its characteristics;
- explain the role of self-learning in open and distance learning system (ODLS);
- identify the basic characteristics of self-learning print material;
- describe the components of a self-learning material unit;
- explain various aspects of designing self-learning materials;
- define academic counselling and discuss its various stages;
- describe various media for organizing academic counselling;
- discuss types and evaluation of assignments and
- discuss organization of learning experiences through audio-video programmes, project work, practical work, teleconferencing, interactive radio counselling etc.

11.3 SELF-LEARNING

The concept of self-learning developed when teaching methods meant for all members of a group failed to meet the varying needs of individual students. The underlying assumption in this method of instruction is that human beings learn many things through their own efforts. Every individual has a natural desire to learn on his/her own. Another assumption is that every individual is unique; he or she learns according to his or her abilities. Hence, any teaching system based on presentation of information to a group cannot take into account the wide variations in the rates at which individual students learn. As the students entering different stages of education vary in their abilities, interests and needs, there is a pressing need for a wide range of instructional alternatives, which may cater to their individual differences.

Self-learning is the only panacea for such needs. The most common description of self-learning methods is that teaching is directed towards individual students rather than the group of students. However, self-learning is not synonymous with independent learning or learning in isolation from other students. Self-learning may encourage independence from the teacher; this, however, is not usually the main aim. During self-learning, the students do not necessarily work in isolation from their peers.

The main characteristics of self-learning are:

- Emphasis on learning rather than teaching
- Recognition of individual differences
- Active learner participation
- Working at one's own pace/self-pacing, and
- Provision of feedback and evaluation.

Self-learning as a method of instruction has certain advantages which make it more suited to the students. They are:

- The students learn more effectively when they learn on their own. Self-learning develops critical thinking in handling of study materials on ones own and enhances communication skills and self-reliance.
- Self-learning prepares the student to face the problems in his/her real life
- Learning on one's own is more enjoyable, exciting and rewarding.
- Self-learning promotes self-discipline in the students.

Open and Distance Learning System (ODLS) is primarily based on the principles of self-learning. Learners of ODLS acquire learning experiences organized through self-learning methods and media. ODLS makes use of several self-learning methods or inputs to organize learning experiences. In this unit, we will discuss a few of them. Of all self-learning inputs; self-learning print material constitutes the most important and is often considered the mainstay of ODLS. Let us discuss the main characteristics of self-learning print materials

11.4 CHARACTERISTICS OF SELF-LEARNING MATERIALS

Self-learning print materials contain the basic characteristics of self-learning. The major characteristics of self-learning are the following:

i) Self-Explanatory

Self-learning materials are self-explanatory in nature. Unlike a face-to-face classroom situation where the teacher explains the content of a topic and addresses the queries of the learners, the self-learning materials are inbuilt with explanations, illustrations, examples, visual presentations in the form of graphics, picture etc. therefore, a learner may not get any difficulty in understanding the content.

ii) Self-Directed

Although the distance learner is without the teacher during learning from the SLM, she/he is provided with necessary directions through the content. Hence, she/he does not face any problem in learning even in the absence of the distance education.

iii) Self-Contained

Self-learning materials are self-contained. A unit or a lesson on a particular theme contains the necessary content inputs that a learner is expected to learn from it.

iv) Self-Motivating

Motivation to learn is a pre-requisite for undertaking any learning tasks. SLMs are prepared in such a way that they not only motivate the learners to learn from them but also sustain their motivation through out the learning process. They arrange curiosity, raise problems, relate to familiar situation and make learning meaningful.

v) Self-Evaluating

A learner gets constant feedback throughout the material through self-evaluating mechanisms like 'check your progress', 'exercises', 'activities', 'unit-end questions' etc.

11.5 DESIGN OF SELF-LEARNING MATERIALS

Design of self-learning materials forms the part of design of distance learning programme. A distance-learning programme may consist of more than one course. Each course comprises a few blocks (three to five). Each block consists of a few units (three to five). Each unit has a unit structure and comprises a few sections. Each section consists of a few sub-sections. The structure of distance learning programme is presented in Fig. 11.1:

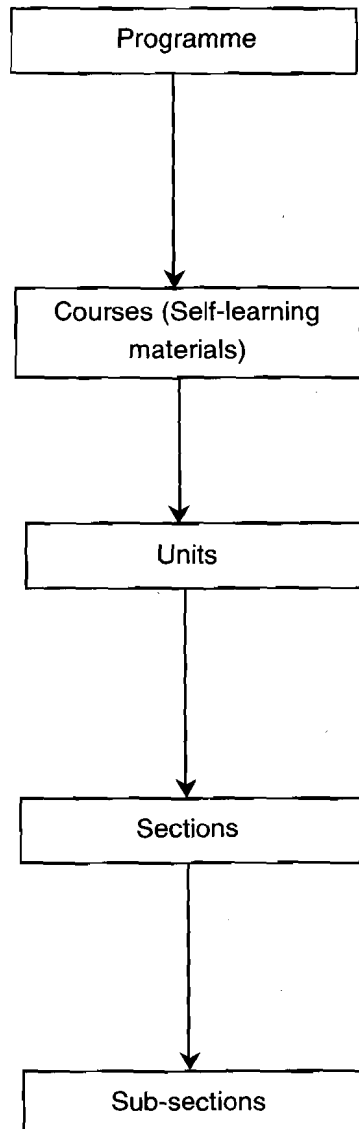


Fig. 11.1: Structure of a Distance Learning Programme

11.5.1 Unit Structure

A distance-learning unit has a structure which is placed in the beginning of the unit. A distance learner can get a glimpse of the unit from the unit structure. It is also called the conceptual structure of the unit. It acts as a mirror of the unit. The unit structure includes introduction to the unit, objectives of the unit, main themes, sub-themes, check your progress, activities, case studies, pictures, cartoons, diagrams, reflective exercises, summary, unit-end activities, points for discussions, answers to check your progress, suggested readings and glossary. The unit structure is presented in Fig. 11.2:

Unit Structure

X.0 Introduction

X.1 Objectives

X.2 Section 1(Main Theme)

X.2.1 Sub-section 1 of Section 1

X.2.2 Sub-section 2 of Section 1

Check Your Progress

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X.3 Section 2(Main Theme)

X.3.1 Sub-section 1 of Section 2

X.3.2 Sub-section 2 of Section 2

Check Your Progress

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X.4 Let Us Sum Up

X.5 Suggested Readings

X.6 Answers to Check Your Progress

Pictures, Cartoons, Diagrams
and, In-text activities etc.

Fig. 11.2: Unit Structure

11.5.2 Major Parts of a Unit

A unit has three major parts. These are:

- Opening Section
- Main Body/Text
- Concluding Section

Opening Section

Opening section contains title and number of the unit or lesson. The structure of the unit outlines the contents of the unit, introduction and objectives. We have already presented the structure of the unit. Introduction explains the brief contents of the unit. It relates the theme of the unit to the previous unit. It connects the previous knowledge of the learner with the new knowledge. Therefore, it acts as an advance organizer to the new contents. Introduction provides learners motivation to undertake the learning tasks. It builds up confidence in the learners to proceed further. It also provides information and guidance to comprehend the unit properly. Hence, a proper introduction to the Unit is very important in organizing learning experiences through print material.

Instructional Objectives of the Unit

Instructional objectives are statements, which specify the Intended Learning Outcomes (ILOs). These are to be achieved by the learners after going through the materials and completing the necessary assignments given in the unit. Objectives explain what the learners are expected to learn or do after they have gone through the unit. Those direct in organization of content (methods), selection of media (charts, pictures, cartoons) and evaluation questions.

Areas of Objectives (Based on Bloom's Taxonomy of Educational Objectives)

General Objectives

Specific Objectives in action verbs



Knowledge
(To Know)

list, define, identify, name, label, etc.

Comprehension
(To understand)

describe, distinguish, differentiate, discuss,
associate.

Application
(To apply)

calculate, examine, modify, change, classify
demonstrate

Analysis
(To analyze)

arrange, divide, select, infer.

Synthesis
(To synthesize)

re arrange, compose, rewrite, formulate,
design, plan, prepare.

Evaluation
(To evaluate)

assess, rank, grade, judge, conclude, recommend
grade.

Examples of Specific Objectives

- Define the concept of 'Barter System'.
- Name the main sectors of Indian economy.
- Differentiate between herbivorous and carnivorous animals.
- Explain the law of motion.
- Describe the functions of legislature in parliamentary system of government.
- Distinguish between a triangle and an octagon.
- Identify the major systems in a human body
- Discuss the impact of the British rule on India.
- Differentiate between education and literacy.

In self-learning print materials, the writer of a unit needs to write objectives in the unit in the specific objective form and use action verbs.

Main Body /Text

The main body of the unit comprises the learning experiences in the form of unit contents which are to be provided to the students. While writing the unit, simple and easily understandable language ought to be used. The distance teacher should avoid unfamiliar words, double negatives, passive voice and difficult language structure. She/he should use learner friendly approach in her/his presentation. Attempts should be made to remove feeling of isolation by the learners. The personal touch needs to be built in the units. She/he can incorporate cartoons to create interest and humour. In the main body each major theme of content has some sub-themes. Contents can be organized using several instructional methods such as deductive method-from general to particular, inductive method-from particular to general, from familiar to unfamiliar and from simple to complex. Similarly, matrices, advance organizers and concept maps can also be used to

organize learning experiences. The distance teacher needs to build in teacher-learner interaction throughout his/her presentation. Clear and comprehensible illustrations and diagrams need to be provided in the unit.

Concluding Section

The concluding section includes 'summary/'let us sum up', 'answers to check your progress', suggested readings/references, key words and their explanation. The summary of the learning material comprises the recapitulation of main learning points in a logical sequence. It offers concluding comments on the learning unit. It also links the present unit with the next unit.

11.5.3 Formative Evaluation

One of the important features of self-learning materials is that they are designed with self-assessment exercises in the form of 'check your progress', self-check questions, activities, in-text questions, etc. They provide feedback to the learners on their progress through the learning materials. They also serve as effective teaching-learning tools for the learners as the learners move from one section of a learning unit to another only after they have successfully attempted the self-check questions. They are well integrated into the contents of the learning materials. Moreover, they also develop practical skills of the learners by expecting learners to do practical activities.

11.6 ACADEMIC COUNSELLING

In the Open and Distance Learning System, academic counselling constitutes a significant method of organizing learning experiences. Unlike print material, learning experiences are organized on a face-to-face mode at the study centres on weekends. Counselling activities are organized by academic counsellors who are mostly from face-to-face learning institutions. Academic counselling is not similar to classroom teaching of conventional learning institution. It is not course-centred, but learner-centred. Unlike teaching in which flow of information is from the teacher to the learner, in counselling the flow of information takes place from the learner to the counsellor. In the context of distance learning, counselling means three activities. These are: -

- i) Informing,
 - ii) Advising, and
 - iii) Counselling
- i) **Informing:** It refers to providing correct information to learners about different aspects of the academic programme like eligibility for taking admission in a specific programme.
 - ii) **Advising:** It means providing different alternatives for a particular academic decision but recommending one suitable for the learner. For example, the counsellor may suggest different available programmes to learner but recommend the most appropriate considering his/her entry qualification.
 - iii) **Counselling:** Through this activity, a counsellor helps a learner to take the appropriate decision for himself/herself regarding any kind of academic, personal or career-related problems.

11.6.1 Stages of Academic Counselling

Academic counseling is organized at different stages of an academic programme. Let us discuss these stages.

- i) **Pre-entry:** At this stage, counselling activities pertain to information on courses, eligibility for taking admission into a programme, choice of courses, registration etc.
- ii) **Entry:** Counselling information at this stage includes information related to tutorial sessions, dates of submitting assignments, the procedure of changing courses etc.
- iii) **During the Course:** This is the most important stage of counselling. Learners get content and assignment difficulties clarified by the academic counsellors when they come to the study centres for counselling sessions. They also discuss their personal problems and problems related to delivery of materials with the counsellors.
- iv) **During Examination:** A learner of distance education receives all kinds of information pertaining to term-end examination and practical examination, their time/place of conduct etc. He/she also receives information about the nature of questions to be used in the examinations and how to prepare for them.
- v) **Post-Study :** After a distance learner completes a course, he/she may require information regarding other courses, which he/she wants to pursue. A counsellor needs to provide counselling at the post-study system.

11.6.2 Media for Organizing Academic Counselling

Counselling can be organized through different media. These media are:

- i) **Face-to-face Counselling:** This is the most important form of counselling but sometimes time consuming and expensive. In this form of counselling both the distance teacher and the learner interact face-to-face regarding various problems.
- ii) **Group Counselling:** It takes care of the problems of face-to-face counselling as counselling is provided to a group of learners at a particular place.
- iii) **Telephone Counselling:** Distance teachers can provide counselling on one-to-one basis through telephones and on one-to-many basis through teleconferencing.
- iv) **Counselling by Letters:** Many distance learners seek information through letters. Such learners can be provided desired information through reply letter.
- v) **Counselling by Handbook:** A lot of information regarding distance learning programmes can be provided through student handbooks and programme guides.
- vi) **Counselling by Audio and Video Programmes:** In some open and distance learning institutions, audio-video cassettes are used to provide learners counselling tips. Even these programmes may comprise messages from the head of the institution, talk by distance teachers and the learning experiences of the distance learners.
- vii) **Counselling by Broadcast and Telecast:** Distance learning institutions organize broadcast and telecast from time to time. During such time, both live counselling and pre-recorded counselling can be presented to the learners.
- viii) **Counselling by Interactive CD-ROM:** Counselling tips recorded in interactive CD-ROM may be made available at study centres for the benefit of the learners.
- ix) **Counselling by INTERNET:** INTERNET provides several platforms like e- mail, chat, special interest groups, websites, etc. which can be used to provide learners counselling services at their doorsteps.

Check Your Progress 1

Notes: 1) Write your answer in the space given.

2) Compare your answers with the one given at the end of the unit.

1) What is the main principle of organizing learning experiences in ODLS?

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2) Mention the main characteristics of self-learning print material.

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3) Why are objectives important in a self-learning unit?

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11.7 ASSIGNMENTS

Assignments play a significant role in organizing teaching-learning experiences. In distance learning, they serve two major purposes. They function as a method of organizing teaching-learning experiences and as an evaluation tool. They also serve as a means of interaction between the academic counsellor and the learners and as a continuous evaluation mechanism. Assignments are generally questions of various types- long answer type, short answer type and objective type- which are prepared on the contents of a course and are given to the students to answer and submit to the university for evaluation and feedback. Since, this is a compulsory component of the instructional system in distance education, learners go through the course and assess their own understanding of the course through feedback on assignment responses. They help the learners to prepare themselves for the term-end or final examination.

11.7.1 Types of Assignments

Assignments are of two types: i) Tutor Marked Assignment (TMAs); and ii) Computer Marked Assignments (CMAs).

- i) **Tutor Marked Assignments:** Tutor Marked Assignments are those assignments which are assessed and evaluated by academic counsellors. They comprise long answer type, short answer type and objective type questions.
- ii) **Computer Marked Assignments:** Computer Marked Assignments are those assignments, which are evaluated by the Computer named Optical Mark Reader (OMR) and comprise objective/ multiple-choice type questions.

Helping Distance Learners to Prepare Assignment

An academic counsellor should help distance learners to prepare good assignments. Some important points, which he/she should tell the learners to keep in mind while writing assignment, are: correct information, logical sequence and coherence, preciseness, clarity of expression, correct use of language, comprehensiveness, legibility, sticking to word limit, avoidance of copying etc.

11.7.2 Evaluation of Assignments and Assignment Comments

Evaluation of assignments comprises providing feedback in the form of comments and awarding marks of grades. Comments provided by the academic counsellors are of two types: teaching type and non-teaching type of comments. Teaching type of comments consists of positive feedback which a learner uses to understand his/her strengths or weaknesses and accordingly improves his/her progress. On the contrary, non-teaching type of comments provide negative feedback and does not serve any pedagogic purpose. Let us study some non-teaching and teaching type comments.

Non-teaching Type Comments

There are Five categories of non-teaching type comments. Let us discuss them.

Harmful Comments

These comments block the interaction between the academic counsellor and the learners. Since they are harsh and rude in nature, learners are not benefited by such comments. Examples of such comments are: 'Horrible language.....', 'Unwanted jargon', 'Where is the explanation? etc.

Hollow Comments

These comments do not mean much to the learner. For example, 'go through your answer—', 'Consult the print material' etc. are comments which are not helpful.

Misleading Comments

Misleading comments require the learner to do something, which does not lead to any kind of learning improvement. For example, a comment like 'Read the lesson again and redo the assignment' does not guide the learner on a corrective path. The above three comments are harmful and must be avoided.

Null Comments

These comments do not confirm or question, refute or approve of anything. They include non-verbal remarks like question marks, underlining, circling, brackets, etc. In fact, a learner does not get any meaning of these comments.

Negative Comments

These comments provide negative views on the facts, explanations, illustrations, etc given by the learner. For example comments like "Explanations are not clear", "Inadequate answers", "Examples are not relevant", etc, may serve as correctives for the learner. Because the learner can improve his/her performance based on the feedback.

Positive Type Comments

The positive type comments are discussed below:

Constructive Comments

These comments are meant for helping the learner improve his/her academic performance. These are constructive suggestions written on the margin of the

assignments. For example, "You should have given some illustrations to support your arguments in the answer" is a constructive comment.

Global Comments

Apart from providing comments on the assignment responses, the academic counsellor can use a sheet to provide overall/global comments on them.

Personal Comments

These comments are not academic in nature. But they are powerful means of providing motivation and personal touch to the learners. They can also eliminate the feelings of isolation in the learners.

11.8 AUDIO-VIDEO PROGRAMMES

Audio-video programmes serve as supplementary materials to printed materials. They strengthen the theoretical knowledge of the students by way of providing direct experiences on various contents of a subject. Audio programmes are generally in the form of debates, lectures, panel discussions, role-plays etc. Through audio programmes, distance learners are provided with views, opinions and comments of the eminent educationists, researchers and subject specialists. Audio programmes are very effective for developing listening skills of the learners. They can be developed for any kind of issues, problems or sequence of events.

Video programmes have added advantage of providing distance learners visual messages along with audio messages. They can depict actual reality and practices in a particular area of knowledge. They can be used to foster cognitive, affective and psycho-motor abilities in the learners. They can be documentary, narrative or dramatic. They can portray distant objects, places, people, events and processes discussed in a subject or in a distance education course.

In distance learning system, audio-video programmes are made available at the study centres. When learners come for counselling, these audio-video programmes can be displayed to them and can also be used to trigger discussions on various contents.

The video programmes are also telecast on National Network of Doordarshan and Gyan Darshan of Indira Gandhi National Open University. Similarly, audio programmes are broadcast from selected stations of All India Radio and Gyan Vani FM Radio Channels. In case of IGNOU, students are provided with the dates of broadcast and telecast of programmes through IGNOU News letters.

Check Your Progress 2

Notes: 1) Write your answer in the space given.

2) Compare your answers with the one given at the end of the unit.

4) Why is Counselling considered an integral part of distance learning system?

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- 5) Why are positive comments on assignment responses of learners considered important?

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11.9 PROJECT WORK

In many distance-learning programmes, especially professional development programmes at higher level like management, computer, teacher education, medicine, etc. project work constitutes an important component of instructional system. Through project work, learners are expected to study in depth one problem in their area of subject and find solutions to that problem. Sometimes, under the project work, they can design an innovative practice, which can form a part of their professional areas. Each learner is expected to develop a project proposal incorporating the title of the problem, objectives, research questions or hypotheses, methodology and implications. The proposal is sent to the concerned faculty members of the institution where the learner is pursuing the programme for feedback and approval. After receiving necessary feedback and suggestions from the faculty, the learner carries out the research work and submits the findings in the form of a research report to the headquarters for evaluation.

11.10 PRACTICAL WORK

Practical works are organized for those programmes, which have practical as a component of the programmes. Science programmes have practicals in the form of laboratory work. Similarly, Health Science programmes expect students to carry out practicals in the hospitals. Computer science programmes require student to perform practicals in computer laboratory. Teacher education programmes expect teacher trainees to conduct practicals in schools and identified teacher education institutes. Therefore practicals are held at designated institutions for which the institution provides schedule. Attendance at practicals is compulsory.

11.11 EMERGING TECHNOLOGIES

11.11.1 Teleconferencing

Teleconferencing is a latest technology which connects electronically a number of users located at different places to interact through audio-video or computer technology. The technology is very useful for distance education system as it provides both learners and teachers of distance system to link themselves for teaching-learning purpose. All of us know that interaction is an effective way of providing feedback in the teaching-learning process. In a face-to-face mode, a learner receives immediate feedback when he/she interacts with the teacher. He/she also receives feedback from the peers. In fact, the interaction process which takes place in face-to-face mode may be one to one (between a teacher and a student) or one to many (between a teacher and a group of students). The

same kind of interaction patterns exist also in teleconferencing. There may be interaction between a distance teacher with a distance learner, between a distance teacher with a group of learners and amongst distance learners themselves. Several instructional methods like brainstorming, questioning, role play, group discussion, problem-solving, debates etc. Teleconferencing provides a platform wherein the distance learners can interact with guest speakers or scholars of national and international eminence. In teleconferencing, there are mainly teaching end and several learning ends. Teaching end is a studio with an uplink facility. In the case of Indira Gandhi National Open University (IGNOU), the studio of Electronic Media Production Centre (EMPC) serves as the teaching end. Learning ends are centres having downlink facility as well as telephone talk-back system. In the case of IGNOU, all the Regional Centres and a number of Study Centres serve as learning ends. Distance learners of IGNOU came to these learning ends and interact with the resource persons at the teaching end. IGNOU used teleconferencing for the first time to organize Extended Contact Programme (ECP) of PG Diploma in Higher Education (PGDHE) students in October 1993. The IGNOU head quarters in Delhi was linked with ten regional centres throughout the country. A one-way video and two-way audio mode of teleconferencing was adopted for the purpose. Fig. 12.3 presents the Communication links as involved in the teleconferencing programme in 1993.

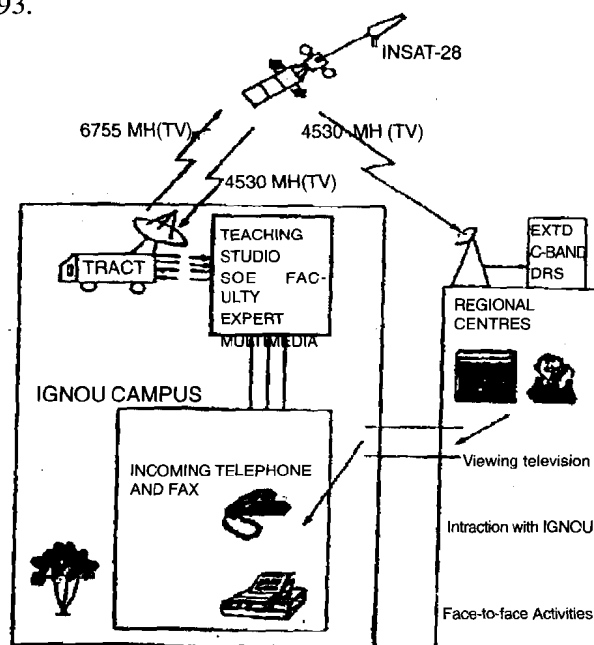


Fig.12.3: Teleconferencing programme of the School of Education, IGNOU

Source: Menon, M.B. (1995) *Utilization of New Technologies in Distance Education (Report of Project sponsored by Spencer Foundation, Chicago)*. School of Education, IGNOU, New Delhi)

Types of Teleconferencing

There can be different types of teleconferencing based on different types of technological configurations. For your purpose we discuss three types of teleconferencing system being used in India these days. They are:

- Audio teleconferencing
- Video teleconferencing
- Computer teleconferencing

These types have been classified according to the use of the technological configuration. Let us discuss each type in detail.

Audio Teleconferencing

You might have the experiencing of talking to a person located at a distant place over the telephone. But with the help of latest technology, you can talk with more persons located at multiple sites. The technology which facilitates conversation with more persons located at different places over the telephone is called audio teleconferencing. This technology is useful to organize learning experiences. Through this technology distance learners can talk to the teachers as well as hear fellow learners. It is an effective communication tool for sharing information/ideas/experiences pertaining different aspects of distance learning. The role of teacher in audio-conferencing is very important as he/she designs and directs the process of conferencing towards the achievement of learning goals. He/she can motivate distance learners and remove the feeling of isolation among them. It is a fully interactive medium and interaction takes place in real time. The major teaching function served by audio conferencing have been given by the (COL 1997).

- Dialogue can be established.
- Tutor(the distance teacher) diagnoses students' problems, offers help.
- Isolated student can get in touch with other students and tutors.
- Tutor can guide students, question their values, suggest alternative views, help them assimilate knowledge.
- Audio conferencing accomplishes student discussion.

Limitations of Audio Conferencing

- Learners may not be able to see visuals.
- Both learners and teacher need to be trained to use the technology for learning purpose effectively.
- If teacher uses lecture method too much, it may be problematic for student learning.

Video Conferencing

Video conferencing is the teleconferencing technology in which both learners and the teacher can see and hear each other. This is becoming a useful medium of organizing learning experiences in distance learning system. These are:

- Two-way video conferencing
- One-way video conferencing

Let us discuss each type in the following paragraphs.

Two-way Video Conferencing

In two-way videoconferencing, participants are linked by two-way vision as well as two-way audio. Both audio and visual messages are exchanged between distance teacher and learners located at different places. Both at the teaching end and learning ends, there are television screens, which display pictures from distant locations. The links are essentially telephone connection. These links are more costly than those for audio conferencing because for more data must be transferred, either by broadband ISDN cable or through television transmitters and receivers via satellite. (COL, 1997).

Two-way video conferencing is very much interactive in nature. Learners can see and talk with their teachers and vice-versa. They get a lot of motivation from the teachers when they are engaged in live dialoguing. They can raise questions, clear doubts and seek clarifications from teachers.

One-way Video Conferencing

In one-way video conferencing, audio communication takes place two-way between teaching end and learning ends and visual communication is one-way from the teaching end. The type of video conferencing IGNOU started with in the early nineties was two-way audio and one-way video conferencing. Distance learners watch the presentations by the experts on television screens at the learning centres (namely, Regional centres/ Study centres in the case of IGNOU) and talk with experts at the teaching end (namely, studio of Electronic Media Production Centre (EMPC) of IGNOU) using long-line telephone facilities.

This technology has been very useful for organizing different kinds of learning experiences cutting across various disciplines in sciences, social sciences, humanities, management, health sciences, computer and information sciences, law, agriculture sciences, etc. The teaching functions of video conferencing have been given by the (COL, 1997).

- Most closely approximates a face-to-face lecture or training session- the 'virtual' classroom.
- Creates social presence and comfortable electronic social environment for learning.
- Lecture format is appropriate for state of the art subject levels, e.g., postgraduate courses or professional updating.
- Variant formats, involving less lecturing and more demonstrating or pre-prepared video presentations, enable to show what could not be seen live.
- Document cameras enable the use of text and pre-prepared graphics.
- Studio-produced videoconferences present discussions amongst experts, e.g., with voice over and visual footage.

Limitations

- Demands much higher energy levels than face-to-face lecturing because of need to concentrate simultaneously on content, visual material and students at remote sites.
- Learners find medium more intense as well slight blurring, incomplete synchronization.

Computer Conferencing

The term computer conferencing refers to computer-based meeting, for exchange of pictures, words, graphics etc., between multiple sites. Special hardware and software systems are used to support computer conferencing activities in both real time and non-real time. Real time, in this context, implies synchronous communication in which messages can be sent and received as you view the screen and interact with the system and the other participants tied in the network. The non-real time elements i.e. asynchronous communication, in contrast, may encompass a series of longer message, a central database of information and a record of current and past comments and all the participants can see (Mirabito, 1994).

There are number of specific learning activities for which computer conferencing works very well, if appropriately designed and integrated with other resource materials. These include:

Educational Operations at Micro-level

- Seminars
- Small group activities
- Role plays
- Debates
- Assignments
- Simulations
- Guest expert visits
- Whole class discussions
- Problem solving.

Teaching functions of computer conferencing have been given by the COL (1997).

- The textual nature of the interaction develops written communication skills, enhances in-depth processing and recall of course material.
- Computer mediated conferencing (CMC) particularly suited to collaborative discussions and peer activities e.g., brainstorming, seminars, small group work, peer learning.
- Fosters active learning, with learners engaged in construction of meaning.
- Socializing is made possible, enhancing motivation to participate.
- Promotes intercultural sharing, since writing in another language easier than speaking.
- Intimate context makes CMC suitable for personal counseling.

Limitations

- Writing takes longer to produce and to read than speech.
- Less confident learners tend to be dominated by the more confident.
- Teachers require social and communications skills and time to facilitate discussion appropriately.
- A poor medium for decision-making processes, and convergent thinking.
- Lack of focus on personal characteristics can lead to overheated discussions.

11.11.2 Mobile Communication

Satellite-based communication can help learners at two levels. One, they can be provided electronic gadgets like radio, cellular phone, etc., which will allow them to remain in touch with the teachers while they are on move from one place to another. It is expected that in future more number of learners would be mobile for their work or business purposes. Secondly, specially designed mobile van fitted with audio equipment; talk back facilities, etc., can be developed. These vans can move from one area to another to impact conduct on the spot education/training. Interested groups can be created around a learning centre (preferably in a centrally located village) in the rural and remote area where learners in the adjoining locality can assemble and share their problems with resource person/teachers located at the block or district centres. They can interact with teachers located at different centers using satellite technology. The number of mobile phone users has increased leap and bound in the recent years. As a result of various technological options the mobile phone users in the country are increasing day by day.

11.11.3 Interactive Radio Counselling

Interactive Radio Counselling (IRC) is an effective method of interacting with the distance learners live. It is a form of audio/radio conferencing. Various issues, concepts, problems on different subject areas are presented and discussed by experts through IRC. Learners can ask queries to the experts' presentation from their homes through toll free telephone. These interactive sessions are organized from different radio stations of the country.

11.11.4 CD-ROMs

CD-ROMs are effective means of packaging both theoretical and practical experiences. CD-ROMs can be made available to distance learners so that they learn at their own convenience and pace. Because of the in-built scope in CD-ROM, the learners can repeat a section of the contents many times if they find a concept or practice difficult to acquire. CD-ROMs are also very effective in skill development programme like professional and vocational education programmes as complex skills can be very well animated and depicted in a CD. In case a learner misses the practical training session, he/she can learn skills with the help of CD.

11.11.5 Online Learning

Internet has become a powerful technological tool for organizing learning experiences online in open and distance learning system. It can be understood as a network of computers across the globe wherein information is shared and exchanged among the people of the world in a short time. Morrison (1997) defines Internet as a vast telecommunication network consisting of a group of internationally interconnected computers that communicate electronically. Galbreath (1997) has defined the Internet as a network of networks with a universal addressing tool allowing real-time, computer-to-computer, local-independent communication and information exchanging. Communication on Internet takes place on synchronous or asynchronous, one-to-one, one-to-many and many-to-many basis.

Internet can be used to provide online learning programmes to distance learners. Online learning programmes comprise self-learning materials, audio-video support, assignments, academic counselling, teachers-learners conferencing, etc. Like print based material, online self-learning materials comprise text, structures, diagram, self-check exercises etc. But unlike print based material it contains animation, audio and video integrated with text material and provide the learner with a lot of scope for interactivity. Audio-video support can also be made available to learners through online independent of learning material. The design of learning materials on the net is based on using new pedagogical models based on constructivism. The academic counselling can also be provided through online using lectures, discussions and synchronously or asynchronously, wherein the learners can raise queries and clear their doubts. Assignments and feedback on assignment responses can also be provided to students online. The most important aspect of online learning is that it facilitates collaborative learning through online conferencing. They can engage themselves in virtual classroom learning. They form collaborative groups in the form of cyberclub among themselves regarding their learning problems using e-mail. In many subject areas, like medicine, sciences and other applied areas practical, training can be provided in simulated learning environment.

Check Your Progress 3

Notes: 1) Write your answer in the space given.

2) Compare your answers with the one given at the end of the unit.

- 6) Differentiate between one-way video conferencing and two-way video conferencing.

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- 7) What is Interactive Radio Counselling?

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11.12 LET US SUM UP

Unlike face-to-face learning situation, learning experiences in Open and Distance Learning System (ODLS) are organized through different methods and media. The principles of self-learning are taken into consideration while organizing learning experiences through ODLS. Self-learning print material constitutes the main stay of distance learning system while academic counselling serves as face-to-face input to the learners in distance education. It is meant to address academic and personal problems of the learners. Assignments provide learners feedback on the progress of their learning. Audio-video programmes serve as supplementary materials to the print materials. Project work and practical work are important components of professional and science based programmes. Teleconferencing, Interactive Radio Counselling and CD-ROM are the latest technologies, which help in organization of learning experiences in ODLS effectively.

11.13 UNIT END ACTIVITIES

- 1) Identify any two distance learning programmes offered by any Open University or Correspondence Course Institute (CCI). Find out the methods and media being used in these programmes to organize learning experiences.
- 2) Visit the nearest Study Centre of any Open University or CCI in your area and find out how academic counselling is organized at the centre.

11.14 POINTS FOR DISCUSSIONS

- 1) Discuss how different instructional inputs in distance learning can be optimally used to attain learning outcomes.
- 2) What are the difficulties in organizing learning experiences in ODLS? How can they be overcome?

11.15 SUGGESTED READINGS/REFERENCES

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11.16 ANSWERS TO CHECK YOUR PROGRESS

- 1) Self-learning
- 2) Self-explanatory, self-directed, self-contained, self-motivating, self-evaluating;
- 3) Objectives are important in a self-learning unit because they direct organization of content, selection of media and evaluation questions.
- 4) Counselling is important in distance learning system as it addresses academic, administrative and personal problems of distance learners.
- 5) Positive Comments on learners' assignment responses help them to know their academic shortcomings and suggest them how to improve their academic performance.
- 6) In one-way video conferencing, the video information is one-way whereas audio information is two-way. Learners located at different learning ends can watch video images and listen to audio messages from the teaching end, but can only send audio message through telephone lines or audio-based hook-up.

In two-way video conferencing, both video and audio information are two-way. Learners located at different learning ends can watch video images and listen to audio messages from the teaching end. Similarly, experts at the teaching end can also watch video images and listen to audio messages from learning ends.
- 7) Interactive Radio Counselling (IRC) is a kind of audio conferencing, which is organized through different radio stations of the country. In this, while teaching end is an identified radio station, learning ends can be anywhere where radio instrument and telephone facility are available within the receiving range of the radio station. The learners listen to the experts' presentation from the teaching end and ask questions to the experts through toll free telephone facility.

UNIT 12 CURRICULUM TRANSACTION IN CLASSROOM SITUATIONS

Structure

- 12.1 Introduction
- 12.2 Objectives
- 12.3 Curriculum According to Different Perspectives
 - 12.3.1 Curriculum According to Objectivists' Perspective
 - 12.3.2 Curriculum According to Constructivists' Perspective
- 12.4 Curriculum Transaction
 - 12.4.1 Planning for Instruction
 - 12.4.2 Three Levels of Planning
- 12.5 Steps in Instructional Planning
 - 12.5.1 Content Analysis
 - 12.5.2 Formulation of Instructional Objectives
 - 12.5.3 Selection of Instructional Methods
 - 12.5.4 Selection of Media
- 12.6 Means of Curriculum Transaction in Classroom Situation
 - 12.6.1 Verbal Exposition or Teacher Talk
 - 12.6.2 Classroom Discussion
 - 12.6.3 Questioning and Answering
 - 12.6.4 Learner Participation
- 12.7 Teaching Effectiveness
 - 12.7.1 Self-Observation
 - 12.7.2 Observation of Others
 - 12.7.3 Action Research
 - 12.7.4 Maintenance of Diary
 - 12.7.5 Building Up a Feedback System
 - 12.7.6 Resorting to Active Learning Activities
- 12.8 Let Us Sum up
- 12.9 Unit End Activities
- 12.10 Points for Discussions
- 12.11 Suggested Readings/References
- 12.12 Answers to Check Your Progress

12.1 INTRODUCTION

As we understand people get educated both through formal and informal ways. So far as our various senses are awake, stimuli from the environment in which we live in keep on influencing our mind. Depending upon the extent of impact that any stimulus causes on our mind, we begin to focus on that stimulus which captures our attention most. The more we focus on it, the greater is our perception about it. Further, learning through informal ways is a slow process. It takes a long time to get people educated in that way. With the intention of instructing the youngsters and equipping them with essential knowledge, skills, attitudes and values within a short span of time, we have set up organizations known as schools/colleges. Looking into the specific needs and aspirations of the youngsters, their age and their readiness for learning, chunks of knowledge are selected and/or a series of learning experiences prepared with a view to educating them

in the best way possible within a specified span of time. This series of topics or learning activities that is to be carried out for educating them is known as curriculum. In this Unit, we are trying to learn what curriculum is, how instructional planning is done for curriculum transaction, how it is transacted in the classrooms through different means, and what teachers need to do to bring about better learner participation in curriculum transaction and greater learning effectiveness.

12.2 OBJECTIVES

When you have learned through this unit, you will be able:

- define curriculum and explain it from different perspectives;
- explain curriculum transaction in the classroom;
- explain the need of instructional planning for curriculum transaction;
- enumerate the three levels of instructional planning;
- discuss the steps of instructional planning;
- highlight the various means of classroom curriculum transaction namely teacher talk, discussion, questioning and answering and learner participation;
- explain what learner participation means and how it can be promoted in the classroom; and
- elucidate the concept of teaching effectiveness and suggest ways through which it can be accomplished.

12.3 CURRICULUM ACCORDING TO DIFFERENT PERSPECTIVES

Curriculum, as we have already seen in the introduction to this unit, refers to an organized course of study undertaken for a particular group of students under the aegis of an institution of learning. Curriculum comprises the totality of learning experiences – be they curricular or co curricular – to which learners are subjected with a view to educating them. For convenience the contents under a curriculum may be broken up into a number of subjects. The totality of topics/learning experiences that fall under each subject is called syllabus. Apart from the list of topics/learning experiences, the syllabus of a subject may state the goals and objectives of teaching that subject; the techniques and methods that could be used for teaching and learning it and how to find whether or not the educational ends have been met.

12.3.1 Curriculum According to Objectivists' Perspective

Curriculum is generally built around a set of assumptions about the nature of knowledge and the way it is acquired. Most of the curricula presently are built on the objectivists' perspective that regards knowledge as truths to which humans have access. Teachers are persons who have acquired sufficient chunk of basic knowledge revolving around a particular discipline. The role of teachers is to transmit this knowledge to learners. As knowledge is seen as something known and relatively fixed, formal schooling organizes knowledge into formal and standard curricula for all students to learn. Students who learn through the system of curriculum built on the objectivist perspective would generally demonstrate their mastery in the knowledge through performance on standardized tests.

12.3.2 Curriculum According to Constructivists' Perspective

An alternative to the above perspective, a new system of evolving curriculum namely the constructivists' perspective has recently come up in the sphere of education. Instead of viewing knowledge as something fully known, fixed and transmittable, the constructivists believe that knowledge is rather personal and that meaning is constructed by the learners through their experience. The proponents of this view see learning as a social process in which learners construct meanings which is resultant of the interaction of prior knowledge and new information being learned.

Instruction, when seen from the point of view of this new perspective, is not telling or transmitting of fixed truths to students but rather as providing students with relevant experiences and subsequent opportunities for dialogue and interaction. In this way, the system allows meaning to get evolved and constructed. Institutions that follow this new perspective, no longer view curriculum as a document of important information but as a set of learning events and activities through which students and teachers jointly negotiate content and meaning.

Check Your Progress 1

Notes: 1) Write your answers in the space given below.

2) Compare your answers with those given at the end of this Unit.

1) What is meant by curriculum?

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2) Differentiate between Objectivists' and Constructivists' perspectives on curriculum.

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12.4 CURRICULUM TRANSACTION

Curriculum, be it of the objectivist perspective or of the constructivist perspective, is a tool and it has to be transacted or implemented if learning is to take place. Transaction consists of the process of putting into practice the set of activities listed or of covering the topics given in the curriculum. Transaction of a curriculum is not an easy task. It demands on the members of the teaching staff a considerable amount of reflection, visualization and planning. It calls for the maximum utilization of all available resources – physical, material, financial and human, if we wish it to be efficient and effective.

As we have already seen, for convenience of transaction, curriculum is divided into a number of subjects. The totality of all the topics or activities that fall under each subject is called the syllabus. Each syllabus is spelt out and elaborated into a textbook. Organizational heads entrust the teaching of these textbooks on teachers looking into their areas of specialization and competence. Each teacher takes up the subject allotted to him or her and makes use of the textbook through meticulous planning. Planning is a demanding process that calls forth sophisticated understanding and skills through which to control what happens through purposeful organized activities that lead to targeted outcomes. By using adequate techniques and methods, be they teacher controlled, learner controlled or group controlled, teachers transact the content of the textbook, thereby enabling children to pick up relevant knowledge and develop necessary skills and attitudes. This process is known as curriculum transaction. If teachers are to transact curriculum effectively and efficiently, they require the needed competence in organizing activities.

Curriculum transaction, as we have already pointed out, involves planning. In the planning process, curriculum is transformed and adapted by additions, deletions and interpretations and by decisions about place, sequence and emphasis. The process of planning and developing is to develop a step-by-step procedure for teaching that takes into account the variables of learners, resources and facilities that lead to attainment of predetermined objectives.

12.4.1 Planning for Instruction

Both theory and common sense suggest that planning for any purposeful activity shows results. In addition, planning that leads to shared understanding and acceptance of clear and attainable goals enhances students' performance. Planning can give both teachers and students a sense of direction. It helps them to become aware of the goals that are implicit in the learning task they are asked to perform. Learning objectives, thus, have a focusing effect on students. Another positive aspect regarding planning is that it produces a smoothly running classroom with minimum discipline problems and interruptions. Educational research consistently shows that planning is the key to tackling most of the management problems. All these bear testimony to the need for organizing learning activities.

For content transaction, both teachers and educationists follow a rational linear model of planning. This model puts focus on content analysis as the first step in the process of planning. Instructional objectives are formulated based on the content analysis. Modes of action and specific activities are then selected from among the various alternatives available for accomplishing these objectives. Good educational planning, when seen from this point of view, is characterized by carefully specified objectives normally stated in behavioural terms, teaching actions and strategies designed to achieve predetermined objectives and careful measurements of learning outcomes, namely student achievement.

12.4.2 Three Levels of Planning

In the beginning of the academic year, even before teachers enter the classroom for teaching, they are expected to do a good deal of work by way of planning. The planning they are expected to carry out at the pre-instructional phase may be seen in terms of three levels, namely (i) Course planning; (ii) Unit planning; and (iii) Lesson Planning. As these three levels of planning are of vital importance, they need to be discussed briefly.

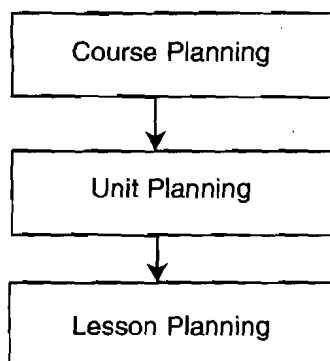


Fig. 12.1: Three Levels of Instructional Planning

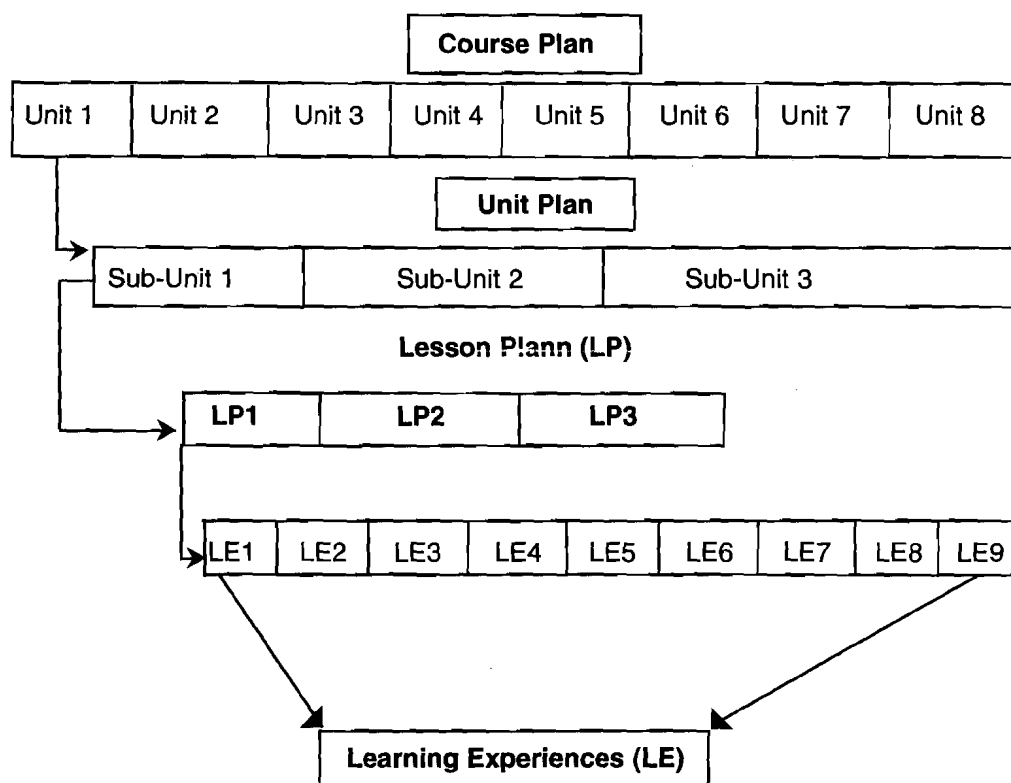


Fig. 12.2: Schematic Presentation of Three Levels of Instructional Planning

Source: Dash, N.K. (2003) *Power Point Slides for Teacher Education Workshop*, SOE, IGNOU, New Delhi

i) Course Planning

In the beginning of the academic year, even before teachers embark upon their teaching, they are expected to plan for the entire course of studies or the total content of textbook they are supposed to handle. It involves planning for all the units or the chapters in the course. For example a teacher in Geography or a teacher of Mathematics for class VIII has to plan for the entire course of Geography which may comprise a few units or chapters, say eight, that has to be transacted in the given academic year. They ought to know the total content and the order in which it is to be taught. They also need to make a streamline sequence for the year and an inventory of the various activities they propose to undertake and a note as to how much time to allot to each of them. This study of the textbook will provide the teachers not only with an overview of the content but also with knowledge of the goals and objectives of teaching it. Once they have done this, looking into the nature and complexity of the content involved, teachers would need to distribute the content as basis for the annual course planning.

ii) Unit Planning

Once the course plan is completed, teachers enter the second level of planning; namely Unit Planning. A unit is essentially a chunk of content and associated skills that are perceived as fitting together in a logical way. A unit plan is an integrated plan for instruction covering several days and including several lessons aimed at achieving a common set of goals and objectives.

Before initiating into teaching, teachers should subject the content of each unit or chapter for thorough analysis. Every chapter consists of a main topic that, in turn, is broken up into sub-units or sub-topics and their elaboration showing their interrelatedness. While analyzing the content, teachers should pick up the main ideas and sub ideas and reject the details. They should then divide the various ideas they picked up into sub-units and arrange the ideas under each sub-unit logically. This process of picking up various ideas or concepts in each unit and arranging them into their proper sequence is known as content analysis.

Another competency that teachers require when it comes to unit planning is the ability to analyse the task or goal to be accomplished as a result of instruction of the unit. Goal is a general statement as to what we expect our students to achieve as a result of understanding instruction of the unit. Goal is something that learners achieve towards the end of instruction of the unit. The goals may be broken up into its respective competencies and each competency in turn may be broken up into skills. As teachers teach day after day, they keep focusing on specific skills and when a composite of related skills they pick up, they achieve a competency. When pupils pick up all the competencies expected of them, they attain the goal for which the unit was planned for teaching.

Unit plan involves not only ability to analyze content and the analysis of the task but also it involves the ability to select appropriate techniques and methods from among the various alternatives available for curriculum transaction. Looking into the nature of content as well as the types of objectives that are to be realized they select the skills. Instruction involves a number of skills such as the skill of introducing the topic, the skill of explanation, the skill of illustrating with examples, the skill of questioning etc. Ability to select appropriate skills is one of the most important competencies the teachers require for curriculum transaction.

Apart from those competencies discussed above, unit planning presupposes the ability check understanding of the students, as they undergo instruction pertaining to the unit.

In short, the unit plan links together the content, objectives, techniques and methods employed for realizing the goal. The format of a unit plan is given in Figure.

Table 12.1: Unit Plan

Subject/Course :		Unit :	Class :
• Previous Knowledge/Entry behaviour of Students • Major objectives of the unit. • Overview of the theme of the unit:			
1 Sub-Units Teaching topics No. of Periods	2 Major Teaching point under each topic	3 Specific objectives Of each teaching point	4 Methods/media approach adopted Teacher's and pupils' activities, Learning Resources.
• Reference for pupils • Reference for teachers • Evaluation/Assignment			

As the above Table 12.1 shows, unit plan deals with a section of the content that is closely linked, taken as a whole and taught on consecutive days and tested together at the end of the unit. The unit plan is quite short and it tells in brief what concepts are being covered, with what objectives in mind, using what techniques methods and media and how long it would take.

iii) Daily Lesson Planning

At the time of unit plan, the content of each chapter is divided into sub-units. When we plan daily lessons, we begin by taking up the first sub-unit or a portion of it, which could be handled effectively in the span of a period of 35 to 40 minutes. A good lesson plan usually contains at least four sections. In the initial section, there is information about subject, class, topic, entry behaviour, general objectives of the lesson, methods and media to be used etc. In the introduction section, it revises what has been done on the previous day. It serves as a link between the present learning experiences and the past learning experiences. In the presentation section, it involves presentation of new learning experiences in a variety of ways using different methods and media. It shows the use of communication media- audio, visual and audio-visual, it reflects actions, demonstrations, and a variety of drills and revision and testing of the new teaching points. The closing section deals with recapitulation/revision/evaluation, home assignment and blackboard work. Although the daily lesson plans follow certain steps as above, we should bear in mind that there is no plan that is so good as to adhere to it in all situations. Enough flexibility should be there to adapt it to different circumstances.

Table 12.2: Format of a Lesson Plan

Subject:			
Target Group:			
Topic:			
1) Entry behaviour			
2) General objectives of the topic			
3) Methods and Media			
4) Introduction			
5) Presentation			
Teaching Points sequence	Specific objectives in behavioural terms	<u>Learning experiences</u> Teacher's Pupils' Activities Activities	Partial Evaluation
6) Recapitulation/revision/evaluation			
7) Home assignment			
8) Blackboard work plan			

Example of a lesson plan

Subject : Economics
Target Group : Secondary Students
Topic : Population Problem

I) Entry Behaviour

Students are aware of the "Population explosion" as one of the burning problems of India. Students know the factors of production and the characteristics of factors of production as well. They are aware of labour as an important factor of production which is directly related to population.

II) General Objectives

- i) Students will appreciate the seriousness of the population problem.
- ii) Students will understand the relationship between population growth and the resources available in the country.
- iii) Students will understand why the population problem is more acute in developing countries than in developed countries.
- iv) Students will know that a speed or rapid increase in population is bound to be problematic for any country.

III) Methods

Question-answer, Discussion, Lecture

IV) Media

Blackboard, picture, chart

V) Approach

Comparative

VI) Introduction

Good morning, everybody! Today, I will present my lecture on population problem. But, before we begin, let me show you some pictures. (Hence the teacher will show four pictures one by one)

- | | | |
|-------------|---|---|
| Picture I | - | Fish swimming leisurely. |
| Picture II | - | Fish swimming easily but not leisurely. |
| Picture III | - | Congested-almost no space to move around. |
| Picture IV | - | Cracked!!! |

All of you have seen the pictures and must have identified some resemblance to one of the advertisements shown on television.

Now, tell me, why has this advertisement been shown/telecast in India?

Student: This advertisement is about the population explosion. And the population explosion is the biggest problem of India. It is shown in India to make the people aware of the population explosion and its impact on the country's growth.

Teacher: Very correct! It seems that all of you are aware of the population problem, the biggest curse of our country.

Now, today, we will try to know more about the population problem, especially from the economic point of view.

VII) Presentation

Teaching points sequentially ordered	Specific objectives	Teacher's activities	Expected students' response	Evaluation
1) Over- Population	1) Students will be able to relate population problem in the context of quantum of existing factors of production. 2) Students will be able to state the reasons for overpopulation being a hindrance in India's development- social and economical.	1) Teacher will ask questions: i) What are the factors of production? ii) What is the unique characteristics of labour as one of the important factors of production? 2) Teacher will explain how labour is directly related to population. 3) Teacher will explain how over-population itself is not problematic. 4) Teacher will give examples where increase in population may turn out to be a blessing viz. America. 5) Teacher will ask the students to give relevant examples	1) Students will answer the question asked by the teacher: i) Land, Labour, Capital and Entrepreneurship. ii) Living in nature. 2) Students will listen to the teacher attentively. 3) Students will give relevant example like Australia and Singapore.	Explain in your own words why over population is a problem in India and not in America or Australia.
2) World and Population Problem	1) Students will able to write data regarding populations of developing as well as developed countries.	1) Teacher will classify the countries into two: i) Developed and ii) Developing 2) Teacher will explain that population problem is more acute in developing countries and not in developed countries	1) Students will note down the main point from blackboard. 2) Students will learn to the teacher attentively. 3) Students will answer the questions asked by the teacher (if any)	Explain in your own words why population problem is more acute in developing countries than in developed ones.
		3) Teacher will write on blackboard the Per Capital Income (PCI) of different countries like. 4) USA 34370, Japan 35,420, U.K. 25,200, Sri Lanka 890, Indonesia 570, India 450	4) Students will ask the difficulties.	
3) India's population and reasons for its growth	1) Students will able to write data regarding India's population from 1901 to 2001	1) Teacher will explain with the help of line graph the increase in Indian population.	1) Students will listen to the teacher attentively.	

Teaching points sequentially ordered	Specific objectives	Teacher's activities	Expected students' response	Evaluation
	2) Students will be able to draw a line graph showing speedy increase in population of India. 3.) Students will be able to state reasons for growth in populations. 4) Students will be able to state minimum two reasons for growth in birth rate. 5) Students will be able to state at least two reasons for decline in death rate.	2) Teacher will explain why is it called population Explosion? In 50 years the population has increased by 66 cores. 3) Teacher will ask the students to take down population data while she writes on blackboard. 4) Teacher will ask the students the reason for growth in population. 5) Teacher will give reasons for growth in populations difference between birth rate and death rate is high. Teacher will state reasons for this difference. Root of population problem lies in insufficient fall birth rate.	2) Students will note down the main points from blackboard. 3) Students will answer to the question asked (if any) 4) Students will ask questions/difficulties (if any)	Explain in your words the reasons for growing in population in India.

VIII) Recapitulation

Teacher will recapitulate by asking questions:

- 1) Why is over-population a blessing in America and Australia?
- 2) Why is over-population a problem in India?
- 3) Why is the population problem more acute in developing countries?
- 4) What factors are responsible for the growth of population in India?

IX) Blackboard Summary

Population Problem

Over-population	India's population
World & population	1901-23.6 crores
Per capita income	1951-36.0 crores
USA-34,370\$	1991-84 crores
Japan-35,420\$	2001-102 crores
U.K-25,200\$	Reasons
Sri Lanka-890\$	Difference between Birth rate and Death rate
India-450\$	

Source: <http://www.worldbank.org>.

X) Assignment

Write an account on: "Ever increasing population- an obstacle to the social and economic development of a country".

Source: IGNOU (2000)

Check Your Progress 2

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of this Unit.

3) What is curriculum transaction?

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4) Explain the significance of instructional planning in curriculum transaction.

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5) What are the levels of instructional planning?

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12.5 STEPS IN INSTRUCTIONAL PLANNING

By now, we have discussed the major types of instructional plans a teacher is supposed to do for the transaction of curricular experiences in the classroom. In each of the instructional planning processes, namely, course planning, unit planning and lesson planning, a teacher has to follow certain steps. We discuss these steps in the coming sections.

12.5.1 Content Analysis

In the instructional planning process, the first task a teacher is expected to do is to carry out content analysis. As you know, a teacher in a school or in a college is given the responsibility of transacting the curriculum in his/her area of study. For example, a

science teacher in class X is supposed to transact the curriculum in science in an academic year. Each subject area contains certain contents, which are generally in the form of a few chapters or units. The contents of a unit comprise several concepts and propositions which a teacher teaches to his /her students.

Content analysis refers to identifying various concepts and propositions in a given content and structuring and sequencing them for the purpose of teaching and learning. Content analysis is very important as it directs other activities in instructional planning, namely, formulation of instructional objectives, selection of methods and media, organizing teaching-learning activities and carrying out assessment of student performance.

You might be familiar with what a concept is. Concepts such as animal, tree, fruit, vegetable and furniture are examples of concrete concepts. Each of these concepts has sub-concepts. For example, the concept 'vegetable' has sub-concepts like cabbage, potato, tomato, onion etc. There are also abstract concepts like democracy, secularism, honesty etc. Hence, concepts are objects, events or any phenomenon, which have common characteristics and carry a single name. In a given content, apart from concepts, there are statements, which comprise more than one concept, and there is relationship between these concepts. Such statements are called propositions. Propositions can be a principle, rule, law, theory, hypothesis, assumption, inference, etc. For example, study the following:

- 1) Human beings are descendants of ape
- 2) Two and two makes four
- 3) Amperes equal volts divided by ohms'
- 4) Student learning is related to students' achievement motivation'.

All these are examples of proposition. The proposition one is a theory; proposition two is a rule; proposition three is a law and the proposition four is a hypothesis. In each of these propositions, you find more than one concepts forming the propositions- Let us analyze proposition one.

Proposition one: Human beings are descendants of ape.

In this proposition, there are three concepts, which form the proposition. These concepts have meaningful relationship with each other. Unless there is a meaningful relationship among the concepts in a statement, it cannot form a proposition.

A teacher, therefore, has to identify concepts and various types of propositions in a given content as part of the task of analyzing content.

12.5.2 Formulation of Instructional Objectives

The next step in the process of instructional planning is to formulate instructional objectives. Instructional objectives, which spell out the objectives of a given instructional task and provide a basis for deciding method, media, teaching-learning activities and evaluation procedures. They also specify the learning outcomes, which would accrue out of instructional process. Instructional objectives are very important from the viewpoint of learners as they can organize their learning activities and prepare themselves for examinations.

Instructional objectives which a teacher formulates for classroom instruction pertain to three domains of human abilities. These three domains have been propounded by Benjamin Bloom(1956). They are:

- Cognitive: thought or knowledge (To know)
- Affective: Feelings (To feel)
- Psychomotor: Doing (To do)

The above three domains have been presented by Bloom in the form of taxonomy of educational objectives. Let us have an understanding of the taxonomy of educational objectives in three domains.

Table 12.3: Major Categories in the cognitive Domain of the Taxonomy of Educational Objectives (Bloom, 1956)

Description of the Major Categories in the Cognitive Domain

- 1) **Knowledge:** Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
- 2) **Comprehension:** Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words of numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.
- 3) **Application:** Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.
- 4) **Analysis:** Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.
- 5) **Synthesis:** Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviours, with major emphasis on the formulation of new patterns or structures.
- 6) **Evaluation:** Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgements are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus value judgements based on clearly defined criteria.

Source: Gronlund Norman, E. (1981). *Measurement and Evaluation in Teaching*, 4th ed, New York: Macmillan, p.568.

Table 12.4: Examples of General Instructional Objectives and Clarifying Verbs for the Cognitive Domain of the Taxonomy

Illustrative General Instructional Objectives	Illustrative Verbs for Stating Specific Learning Outcomes
Knows common terms	defines, describes, identifies, labels, lists, matches, names, outlines, select, reproduces, selects, and states.
Knows specific facts	
Knows methods and procedures	
Knows basic concepts	
Knows principles	
Understands facts and principles	converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes
Interprets verbal material	
Interprets charts and graphs	
Translates verbal material to mathematical formulas	
Estimates consequences implied in data	
Justifies methods and procedures	changes, computes, demonstrates, discovers, manipulates, modifies, operates, operates, predicts, rewrites shows, solves, uses
Applies principles to new situations	
Applies theories to practical situation	
Solves mathematical problems	
Constructs charts and graphs	
Demonstrates correct usage of a procedure	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, point out, relates, selects, separates, subdivides
Recognizes unstated assumptions	
Recognizes logical fallacies in reasoning	
Distinguishes between facts and inferences	
Evaluates the relevancy of data work (art, music, writing)	
Writes a well-organized theme	categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes revises, rewrites, summarizes, tells, writes
Gives a well-organized speech	
Writes a creative short story (or poem)	
Proposes a plan for an experiment	
Integrates learning from different areas into a plan for solving a problem	
Formulates a new scheme for classifying objects (or events, or ideas)	
Judges the consistency of written material	appraises, compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, support
Judges the adequacy with which conclusion are supported by data	
Judges the value of a work (art, music, writing) by use of internal criteria	
Judges the value of a work (art, music, writing) by use of external standards	

Source: Gronlund Norman, E. (1981) *Measurement and Evaluation in Teaching*, 4th ed, New York: Macmillan, p.569.

Affective Domain of the Taxonomy of Educational Objectives

The Affective Domain addresses interests, attitudes, opinions, appreciations, values, and emotional sets. If the teaching purpose is to change attitudes/behaviors rather than to transmit/process information, then the instruction should be structured to progress through the levels of the Affective Domain:

Receiving

The student passively attends to particular phenomena or stimuli [classroom activities, textbook, music, etc.] The teacher's concern is that the student's attention is focused. Intended learning outcomes include the pupil's awareness that a thing exists. Sample objectives: listens attentively, shows sensitivity to social problems. Behavioural terms: asks, chooses, identifies, locates, points to, etc.

Responding

The student actively participates. The student not only attends to the stimulus but also reacts in some way. Objectives: completes homework, obeys rules, participates in class discussion, shows interest in subjects, enjoys helping others, etc. Behavioural terms: answers, assists, complies, discusses, helps, performs, practices, presents, reads, reports, writes, etc.

Valuing

The worth a student attaches to a particular object, phenomenon, or behavior. It ranges from acceptance to commitment (e.g., assumes responsibility for the functioning of a group). It includes attitudes and appreciation. Objectives: demonstrates belief in democratic processes, appreciates the role of science in daily life, shows concern for other's welfare, demonstrates a problem solving approach, etc. Behavioural terms: differentiates, explains, initiates, justifies, proposes, shares, etc.

Organization

Bringing together different values, resolving conflicts among them, and starting to build an internally consistent value system: comparing, relating and synthesizing values and developing a philosophy of life are parts of organization. Objectives: recognize the need for balance between freedom and responsibility in a democracy, understands the role of systematic planning in solving problems, accepts responsibility for own behavior, etc. Behavioural terms: arranges, combines, compares, generalizes, integrates, modifies, organizes, synthesizes etc.

Characterization by a Value or Value Complex

At this level, the person holds a value system that controls his/her behavior for a sufficiently long time. Behavior is pervasive, consistent and predictable. Objectives are concerned with personal, social, and emotional adjustment, display of self reliance in working independently, cooperation in group activities, maintenance of good health habits, etc.

The third dimension of Bloom's Taxonomy is the psychomotor domain that reflects the motor skills. Let us understand this domain in detail.

Psychomotor Domain of the Taxonomy of Educational Objectives

Instructional objectives and derived questions/tasks typically have cognitive/affective elements, but the focus is on motor skill development. The suggested areas for use are speech development, reading readiness, handwriting, and physical education. Other areas include manipulative skills required in business training [e.g., keyboarding], industrial technology, and performance areas in science, art and music. In the psychomotor domain, performance may take the place of questioning strategies in many cases.

- 1) Reflex movements. Segmental, inter-segmental, and supra segmental reflexes.
- 2) Basic-fundamental movements. Loco-motor movements, non-locomotor movements, manipulative movements.
- 3) Perceptual abilities. Kinesthetic, visual, auditory and tactile discrimination and coordinated abilities.
- 4) Physical abilities. Endurance, strength, flexibility, and agility.
- 5) Skilled movements. Simple, compound, and complex adaptive skills.
- 6) Non-discursive communication. Expressive and interpretive movement.

How to formulate instructional objectives?

Based on the content analysis, a teacher can formulate instructional objectives in these domains. Instructional objectives are formulated at two levels. The first level is general instructional objectives and the second level is specific instructional objectives (See Table 12.5). The difference between general instructional objectives and specific instructional objectives are given below.

Table 12.5: General and Specific Instructional Objectives

General Instructional Objectives	Specific Instructional Objectives
• Knows a concept • Understand a theory • Applies a principle (Abstract, not measurable)	- Define a concept - Explains a theory - Demonstrates a principle (Concrete, hence measurable)

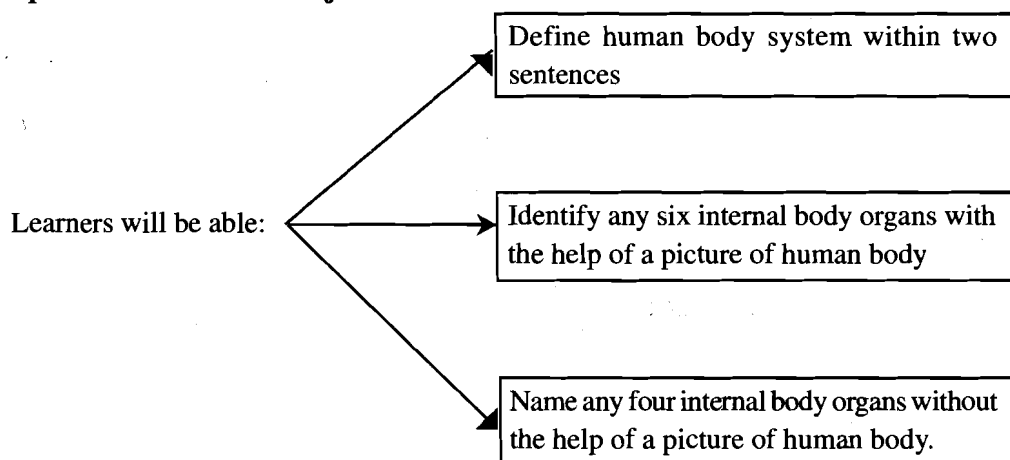
While general instructional objectives are abstract in nature and cannot be measured, specific instructional objectives are concrete in nature and hence measurable. Knowing a concept does not reflect the knowledge of a learner unless he/she defines that concept. Similarly, applying a principle does not reflect the application ability of a learner unless she/he demonstrates the application of that principle on a concrete situation.

Having an understanding of instructional objectives in three domains of Bloom's Taxonomy of Educational objectives and the difference between general instructional objectives and specific instructional objectives, Let us see how they are formulated with the help of the following examples.

General Instructional Objective

"Learners will be able to know the human body system".

Specific Instructional Objectives



In the above examples, you observe that general instructional objectives can be specified into more than one specific instructional objective. There are four criteria which you should bear in mind while formulating specific instructional objectives. These are:

- 1) Audience : Learners/Students
- 2) Performance : Define/Identify
- 3) Criterion/Standard : Human body system/ Any six internal body organs
- 4) Conditions : Within two sentences/ with the help of picture of human body

Now, you will be able to formulate general and specific instructional objectives on different concepts and propositions. Both the content analysis and instructional objectives decide what kinds of methods and media a teacher would adopt to transact a particular content. Let us discuss selection of methods and media.

12.5.3 Selection of Instructional Methods

In Unit 10, we have discussed different methods of teaching. There are mainly teacher controlled methods- lecture, demonstration, team teaching, question-answer method; learner controlled methods-project works, programmed learning, self-learning materials, computer assisted instruction, library work, laboratory work and group-controlled methods- group discussion, debate, brainstorming, panel discussion, simulation, tutorials etc. Apart from these methods, there are also a number of methods adopted by teachers like- story telling, narration, role-play, dramatization, etc. But out of a plethora of methods, a teacher has to select the appropriate method to transact a particular content. Selection of methods depends upon the following factors.

Teacher's Ability

The use of a method by a teacher depends upon his/her competence to use that method. For example, a lecture to be delivered effectively by a teacher would require a number of skills such as skills of introduction, explaining, questioning, illustrating, summarising etc. Similarly, use of project method requires the skills of planning, executing and evaluating the project work. Hence, abilities and skills of a teacher need to be taken into consideration while selecting a method.

Learner's Characteristics

Learner's characteristics such as their previous knowledge, socio-economic conditions, mental level, home background, maturity level, interests, aptitudes, study habits, etc. do influence the selection of methods.

Availability of Resources

The use of a method is dependent on the availability of resources. For example, availability of resources like OHP, computer, TV, Internet, blackboard, maps, charts, posters, etc. decides the selection of a particular method. If there are no computer facilities in a school, it is not possible to opt for computer-assisted learning.

Size of the Class

Size of the class determines what method is to be selected for transactions a particular context. If the size of the class is big, lecture method is suitable but a tutorial is a suitable method for a small group.

12.5.4 Selection of Media

Like selection of methods, a teacher needs to select appropriate media to transact a given content matter. There are a number of media (both conventional and electronic) which are now a days available for a teacher. But the decision to select appropriate media depends on several factors. You can have a detailed understanding of various media available to a teacher from the Table 12.6.

Table 12.6: Classification of Media

i)	Audio
a)	Voice(any human sender of the message)
b)	Gramophone records
c)	Audio tapes, to be used in a tape-recorder or language laboratory
d)	Stereo record/tapes
e)	Radio
f)	Telephonic conversations
ii)	Visual(Verbal) print of duplicated
a)	Textbooks, supplementary books
b)	Reference books, encyclopedia etc.
c)	Magazines, newspapers etc.
d)	Documents, clippings from published material
e)	Duplicated written material
iii)	Visual (non-projected, two dimensional)
a)	Messages/pictures on roll-up board
b)	Flat pictures, cut-outs
c)	Posters, charts, graphs etc.
d)	Cartoons, comics etc.
iv)	Visual (non-projected three dimensional)
a)	Models, mock-ups, display materials
b)	Diagrams
c)	Globes or maps (three-dimensional)
d)	Specimens (animate or inanimate)
e)	Puppets
v)	Visual (projected-still)
a)	Slides
b)	Film strips
c)	Overhead transparencies
d)	Micro image system: micro film, micro card, micro fiche
vi)	Audio-visual (projected-motion)
a)	Film

- b) Television
- c) Close-circuit television (CCTV)
- d) Video cassettes
- vii) Multi-Media packages (for more than one sense)
 - a) Slides + tape + workbook
 - b) Slide + tape + workbook
 - c) Radio + slide or posters (Radio vision)
 - d) Film+ posters + workbook (print materials)
 - e) Any of the above+ group discussion
 - g) Any of the above+ introductory and summarizing talks by teacher/ leader of the group.
- viii) New emerging media (all of these are multisensory)
 - a) Tele-conferencing (group discussion through telephones)
 - b) Cable television (localized television where feedback is possible)
 - c) Satellite television/communication satellites
 - d) Computer networking/Internet
 - e) Video discs
 - f) Mini computers/micro computers/word processors.
 - g) Mobile technology (Mobile phones)
 - h) Direct to Home Television (DTH)
 - i) EduSat

Source: School of Education (2003)

The factors which influence the decision of media are the following:

- i) Content to be taught.
- ii) Instructional objectives to be achieved
- iii) Ability/Training of the teacher to use the media
- iv) Learner's characteristics
- v) Availability and accessibility of media in the institution-school, college or university
- vi) Cost of media
- vii) User friendliness and interactivity of media, which means the learner can interact with media with ease
- viii) Pedagogic utility of the media (media should cater to achievement of learning in three domains-cognitive, affective and psychomotor).
- ix) Effective communication (media should be able to communicate to the learners effectively)
- x) Infrastructure facilities (school or college should have the required infrastructure facilities for the media, e.g. a computer lab is needed for computers).

Check Your Progress 3

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Unit.

6) Differentiate between unit planning and lesson planning.

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7) What is content analysis?

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8) Give three examples of specific instructional objectives at knowledge, understudy and application level.

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9) What are the factors that need to be considered in selection of methods?

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12.6 MEANS OF CURRICULUM TRANSACTION IN CLASSROOM SITUATION

12.6.1 Verbal Exposition or Teacher Talk

Verbal exposition or teacher talk is by far the greatest means by which curriculum transaction is generally carried out in the classroom of today. It is through their talk that teachers introduce the topic, put the content across the class and create interaction between

themselves and the students and among pupils. It is through language they carry out recapitulation and evaluation. Teacher talk is so ubiquitous in the classroom that teachers use it for giving directions, eliciting information, asking contribution of the students to the development of the content, use the visual illustration or refer to the textbook. Whatever the resources, be they simple or sophisticated, it is the language used that mainly contributes to the lesson. Teachers may use the latest audiovisual equipment to assist them in their instruction but these do not in anyway change the underlying strategy of verbal exposition.

Teacher talk is so important as an aspect of curriculum transaction that it has invited the attention of a large number of educationalists as well as researchers. Teacher dominance of classroom communication was thoroughly documented by Ned Flanders in his numerous studies on teacher-student interactions conducted during the late 1960s and early 1970s. Flanders (1970) concluded that in most classrooms two thirds of the talk is done by teachers.

This, however, does not mean that teacher talk is the only means of classroom communication. At some point in most lessons, teachers are found resorting to such techniques as classroom discussion and questioning and answering. These are found occurring towards the end of lecture lessons as teachers strive to check for understanding and help students extend their thinking about particular information or concepts. An inquiry lesson, similarly, demands constant dialogue to accomplish the instructional objectives. In a seminar type of lesson or in a cooperative learning lesson, dialogue or questioning and answering is found to be a part of the teaching procedure. In short, these techniques form a part of the syntax of most of the methods. Hence, we need to deliberate on them a little.

12.6.2 Classroom Discussion

Today, in some form or another, discussion seems to be gaining ground in the classroom. It is found to be favorite among teachers who want to reduce their own talk in order to actively involve their students in the teaching-learning process and lead them to discovery. The contemporary view recognizes discussion as a strategy that does not have to necessarily stand-alone but can be employed across all models of teaching in a variety of situations. When and where it is to be used is a matter of choice as to whether discussions are needed among students to help them achieve their goals.

Teachers find discussion to have great capacity in accomplishing many of their instructional objectives. To grow a complex thought system requires a great deal of shared experiences and conversation. It is in talking and arguing about what we have seen, done and observed that ideas multiply, become refined and finally produce new questions and further explanations.

Discussion is seen as externalization of thinking that expresses one's invisible thoughts. It serves as a partial window to teachers for viewing the thinking process of their students and setting for providing correction and feedback when faulty or incomplete reasoning is noted. Thinking out loud also provides students with opportunity to acquire their own thinking and that of others and learn how to monitor their own thinking process. Discussions also improve students thinking and help them to construct their own meaning about academic contents. Discussing a topic also helps students strengthen their existing cognitive structure and help them increase their ability to think. In short, using discussion in the classroom as a tool is found helping the students in many ways.

12.6.3 Questioning and Answering

Besides teacher talk and discussion, questioning and answering is found to be another important aspect of classroom communication. It is a tool that teachers generally use for shaping and molding interactions in the classroom as well as a primary source of data for evaluating the substantive knowledge and intellectual skills of students. Questioning and probing can be fine tools for digging deep into the content thereby taking the learners to higher levels of cognition such as analysis, synthesis, evaluation and appreciation. Because of its undisputable capacity to lead learners to insight and discovery, great teachers like Socrates accepted questioning as the main tool for education.

The way teachers ask questions and the type of questions they ask have been the focus of considerable inquiry and concerns during recent decades. Mark Gall (1970), reviewed the research on questioning to find out the effect of factual and higher order questions on student learning and thinking. His review found that emphasis on fact questions is more effective for promoting young disadvantaged children's achievement than primarily involves mastery of the basic skills. Emphasis on higher cognitive questions is more effective for students of average and higher ability where more independent thinking is required. Rowe (1974) also carried out studies on classroom questioning. He found that patterns of questions and responses occurring across classrooms were remarkably alike. His study found that when teachers asked questions, they waited less than one second for a response before moving on to another question or another student. He also found that when students provided responses, teachers waited less than one second before reacting or asking the next question. Rowe found that improper use of the wait time (the time a teacher waits for a student to respond to a question and the time a teacher waits before responding back) is one of the main causes of poor classroom communication. He opined that if wait time patterns could be altered, classroom communication would improve to a great extent.

12.6.4 Learner Participation

Classroom transaction, which is teacher dominated and highly centralized can hardly, offers any opportunity for learner participation. Since teachers do most of the talk, students are left with limited and passive role to play. Their only roles are reduced to listening and notes taking. They are made to learn through passive rather than active ways of learning. If we wish to make learning active and make it lead learners to higher realms of cognition and if we wish to bring in collaboration and synergy into the system of teaching and learning, we need to bring in learner participation in a big way.

Participation Structures

One of the ways of enhancing learner participation is through the maximum utilization of classroom participation structures. These structures refer to typical arrangement of speakers and listeners into communication networks. They determine who should say what, when and to whom. These structures include ways students take turns during group lessons, the way they ask questions and respond to teacher queries. If we look at the traditional classrooms, we can find such patterns as:

- Teacher talking to the silent audience requiring everyone's attention.
- Teacher talking to one student but assuming everyone else is taking notice.
- A pupil talking to the teacher with the rest of the class as audience.

- The teacher talking to one or more students while the others are not expected to listen.
- Pupils discussing among themselves with the teacher as chairperson
- Pupils discussing among themselves with the teacher absent.

If we examine the various participant structures presented above, most of them are centered on teacher. If the teachers wish to bring in far more participation and involvement of the learners, they have to monitor the use of these patterns. They should put a check on those participant structures which are teacher dominated and give more emphasis on those that promote learner participation.

Active Learning Methods

Using active rather than passive methods is another way to bring in more pupil participation. Exposition methods like lecture, demonstration, etc are the most favorite methods of instruction in our classroom today. These methods offer little scope for pupil involvement. Conversely, if the teachers make use of more and more active methods such as inquiry, discussion, role-play, brainstorming, seminar, debate, practical work, projects, etc. for instructional purposes, they will ensure a lot of involvement and participation on the part of the pupils. Similarly, if the teachers wish to bring in more learner participation, they can divide the class into smaller groups and involve them into more localized talk instead of attempting for global interactions. Teachers may also make use of such models of teaching as cooperative learning, inquiry teaching etc. for this purpose.

Learners' Involvement in Activities

Creating greater scope for autonomy and involvement is yet another way to ensure more learner involvement. Participation is matter of human dignity. Research has revealed that commitment increases when learners are involved in their goal setting. If teachers set the goals for them, they are likely to perceive them as their teachers' goals and not their own. Practicing teachers therefore need to bring in various techniques to get more participation of their pupils. The teachers could assign students to perform various tasks such as distribution and collection of books and papers, taking care of the bulletin boards, taking messages to the principal's office, acting as monitors in the classroom, etc. Students take pride in doing such tasks. A reflective teacher can then find ways to bring in more learner participation in the classroom.

Paying Attention to Learners' Concerns

Paying attention on pupil concerns is yet another way to bring in more pupil participation. As we know, children are naturally interested in detective stories works that depict adventures and romances. They are also interested in episodes and experiences, which are sensational. So if teachers intersperse their instruction with fables, parables, episodes and items that are humorous, they can invite greater learner participation. Teachers can also bring more participation; if they make their lessons more interesting by relating materials to students' lives by making them vivid and novel by using games, puzzles and other activities that are inviting. By bringing in activities such as field trips, stimulations, music, guest lectures etc, teachers can ensure more participation.

Setting Realistic and Achievable Goals

Inspiring learners to set realistic and achievable goals is yet another way to invite more learner participation. Lessons that make clear to students what is expected of them and what they are supposed to accomplish are more likely to produce extended engagement than are lessons with unclear goals and expectations. Teachers should have clear idea of the overall as well as specific objectives of teaching and the same should be made known to the students. This provides the learners with as clear understanding of what is going on in the classroom as well as what is expected of them. On the contrary, if the objectives remain vague, the learners are likely to groap about in the dark. Teachers who have an eye on their pupils performance need to define in crystal clear terms their instructional intents so as to give meaning and direction. Goals direct attention, stimulate effort and increase persistence and these help to bring in greater participation.

Assessment of a Classroom Lesson

The effectiveness of transaction a classroom lesson presented by a teacher can be assessed by another teacher or a teacher educator with the help of a five point scale (Teaching Assessment Battery) given in the Fig. 12.3.

Teacher _____ Class _____ Subject _____

Topic _____ Date _____ Assessed by _____

No	Items	Specifications	Un-satisfactory	Satisfactory	Good	Very Good	Excellent
1	Appropriate-ness of Instructional Objectives	Clarity, relevance to the content, adequacy with reference to the domains and levels of objectives, attainability in terms of pupil outcomes.	1	2	3	4	5
2	Proper Organization of content	Logical Organization according to content and psychological organization as per need of the pupil.	1	2	3	4	5
3	Creating situations for introducing the lesson.	Greeting, accepting greeting, securing attention and giving rapport, ensuring facilities like chalk, duster, aids, apparatus, etc.	1	2	3	4	5
4	Effective introduction of lesson.	Linking with past experiences, link between introduction and main parts properly formed, use of appropriate devices- techniques like questioning, examples, exhibits etc.	1	2	3	4	5
5	Questions properly structured	Structuring questions at different levels, which are grammatically correct, unambiguous, precise and relevant to content.	1	2	3	4	5

6	Questions well-delivered and distributed	Questions delivered with appropriate speed, with proper intonation and pitch allowing pause for thinking and questions covering even non-volunteers.	1	2	3	4	5
7	Pupil responses properly handled	Handling pupil responses, techniques like prompting, eliciting further information, refocusing and asking critical awareness questions.	1	2	3	4	5
8	Explanation clear and concrete	Clarity, continuity, relevance to the content using beginning and concluding statements, covering essential points.	1	2	3	4	5
9	Used appropriate Examples for illustrations	Simple, interesting illustrations and relevant to the point being explained.	1	2	3	4	5
10	Used appropriate teaching aids for illustrations	Relevant to content, appropriate to the pupil's level, properly displayed and appropriately used or handled.	1	2	3	4	5
11	Varied stimuli for securing & sustaining pupil attention.	Appropriate body movements, gestures, change in notation and pitch, change in sensory focus, change in interaction pattern and pausing. aural-visual switching and encouraging pupils' physical participation.	1	2	3	4	5
12	Used appropriate verbal and non-verbal reinforcers.	Use of praise words, statements, accepting and using students, ideas, use of pleasant and approving gestures and expressions, writing pupil answers on blackboard.	1	2	3	4	5
13	Appropriate pacing of the lesson.	Adjusting the speed of the lesson to the level of the pupil.	1	2	3	4	5
14	Innovations	Providing novelty in teaching approach, student activities, and lesson structure of teaching aids.	1	2	3	4	5
15	Conclusion of the lesson	Giving the lesson a logical closure with asking adequate recapitulation question.	1	2	3	4	5

Fig. 12.3: Teaching Assessment Battery to Assess the Transaction of a Lesson.

Source: School of Education (1999)

Check Your Progress 4

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given end of the Unit.

10) Why is teacher talk considered an important aspect of classroom transaction?

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11) How can teacher talk be made an effective means of classroom transaction?

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12) Why is learner participation in classroom transaction considered to be important?

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13) How can learner participation be enhanced in the classroom transaction process?

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12.7 TEACHING EFFECTIVENESS

We have noted in the preceding section that teacher talk dominates classroom communication and as teacher talk is highly centralized and teacher dominated, it provides little scope for learner involvement. We have suggested some of the ways through which learner participation can be enhanced in the teaching learning process. Now we need to discuss how our teaching can be made effective.

Teaching effectiveness lies in meeting the needs and expectations of learners that would keep changing as time passes. Only when goals and objectives are realized by instruction, our instruction can be considered as effective. There are various ways to make other instruction effective.

12.7.1 Self-Observation

Self-observation of our own teaching is one of the ways to make our instruction more effective. As it is not easy to observe our own teaching while engaged in it, we need to video or audiotape our own teaching and review the tape. On examining the tape, we come to know whether or not we use active ways of teaching and try to strive to bring in learner participation and whether we are able to communicate the teaching points clearly to our students. Thus through proper scrutiny, we will be able to locate most of the limitations in our teaching and through sustained efforts we can eliminate most of our limitations and make our teaching more and more effective as time passes by.

12.7.2 Observation of Others

Observing others teaching is yet another way to make our teaching more effective. We can see our own teaching in the teaching of others. When we observe others, we can gain self-knowledge that will enable us to construct and reconstruct our own knowledge. When we observe them, we can, for example, notice the way others put questions while teaching. We can notice the number of questions being put, whether the questions being put are directed to the whole class or to individual students and whether the questions are responded by individual students or groups, etc.

12.7.3 Action Research

Taking up action research is another way to improve our teaching effectiveness. Action research is a sort of self-reflective inquiry that we could initiate for the purpose of improving our own classroom practices. We are likely to confront many a problems while engaged in instruction. Action research involves identification of the problem, studying the problem in detail, identification of action, implementing the action, observing the action, reflecting over the observations and finally revising the plan. Action research, in short, allows us to investigate events in our classrooms to take constructive steps towards solving problems by systematically reflecting on the outcome.

12.7.4 Maintenance of Diary

Teaching effectiveness also can be worked out through regular maintenance of a diary. If we are in the habit of noting down our teaching experiences on daily basis and then analyzing the same systematically at an interval of every few weeks, we can gain powerful insight into our own classroom behavior. The insight gained would enable us bring about the desired modification in our teaching.

12.7.5 Building up a Feedback System

Among other things, building up of an effective feedback system and provision for follow up can make us effective teachers. If we wish to be effective, we should try to develop a feedback system, which would act as a database for us to see the effectiveness of our instruction. We should encourage all concerned in the well being of students to provide their observations, opinions and suggestions pertaining to the transaction of curriculum, their innovative ideas, modalities and strategies that would place us in a better plane to function. What they have to tell we should jot down intently and fully.

The information that emerges from different sources should be pooled and studied carefully. This would give us enough insight into our functioning, and provide us with the cons and pros with respect to teaching-learning processes. Perfect feedback is communication at its best. It is both giving and receiving, both praises and criticism. Feedback helps us to understand what is going on, feel involved and to plan work more effectively.

12.7.6 Resorting to Active Learning Activities

Effective instruction is obtainable only when quality driven processes are used. Flexibility is guiding principle in teaching and learning. A central component of flexibility is the teachers' ability to intelligently use a variety of teaching approaches to match them to different goals, and adapt them to different student styles and characteristics. Quite a number of active learning activities for this purpose are available. Some of these activities that help to generate quality instruction are as given under:

- Asking questions especially those of the open-ended type.
- Getting students summarize what is being learned.
- Making them put the newly learnt information into their own words.
- Relating the incoming information to their previous knowledge.
- Discussing with peers and others who are knowledgeable.
- Helping them transform the newly learnt data into graphs, charts, tables or diagrams.
- Helping them pick up the skill of notes taking and notes making.
- Providing them with opportunity for applying the knowledge in novel situations.

The more active the techniques we use, the more easily the learners understand the links that bind concepts together under a topic. The more the links are made, the more easily the item is understood, remembered and recalled. The more the opportunities we provide the learners, the more effective our instruction would turn out to be.

Achieving teaching effectiveness is not an easy task.. However, when conscious effort is made through observation of one's own teaching, observation of others' teaching, maintenance of teacher diaries, conduct of action research, designing of active learning strategies and through building up of effective feedback system and provision for follow up, we can succeed in attaining teaching effectiveness.

Check Your Progress 5

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units.

14) What is teaching effectiveness?

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15) What are the ways of making teaching effective?

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12.8 LET US SUM UP

Curriculum consists of the totality of learning experiences which learners are made to undergo with a view to educating them. Curriculum needs to be planned and organized before it is transacted. Transaction consists of putting into practice the set of activities planned for the curriculum. For this purpose, teachers have to subject curriculum to course, unit and lesson planning. Once the various activities are planned and organized, they need to be implemented in the classroom through the process of curriculum transaction. Curriculum transaction in classroom takes place through various means. Teacher talk constitutes a significant means of curriculum transaction. Classroom discussion and question-answer are also important means of transaction. Learner participation significantly contributes to curriculum transaction. By using active ways of teaching, teachers should bring in as much learner participation as possible. By resorting to appropriate techniques, they should also strive to make their teaching effective to the maximum extent possible.

12.9 UNIT END ACTIVITES

- 1) Choose a subject of your choice at the secondary school level. Develop unit plans for four units from that subject.
- 2) Identify five topics from any subject areas either from the elementary or secondary school curriculum. Prepare lesson plans on those topics. Teach the students based on the lesson plans.

12.10 POINTS FOR DISCUSSIONS

- 1) How does the curriculum perceived by the objectivists different from that of the constructivists ?
- 2) What role does teacher talk play in classroom communication? What do you think are its limitations? What suggestions would you like to offer to make it more effective?
- 3) What do you perceive would be the advantages of adding discussions and questioning and responding as integral parts of classroom transaction?
- 4) What does the term competency mean? What competencies do you think teachers require for planning and organizing instructions in the classroom?
- 5) What do you think are the main obstacles to learner participation in the teaching learning process? What suggestions would you like to offer in bringing about more learner participation?
- 6) What does teaching effectiveness mean? What do you think are the ways through which teaching can be made more effective?

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12.12 ANSWERS TO CHECK YOUR PROGRESS

- 1) Curriculum consists of the totality of learning experiences-both curricular and co-curricular which a learner acquires in an institution of learning.
- 2) According to objectivists' perspective, curriculum comprises relatively fixed and pre-determined knowledge that need to be imparted to the learners in educational institution. On the contrary, constructivists hold the view that curriculum is a set of learning events and activities through which students and teachers jointly negotiate content and meaning.
- 3) Curriculum transaction is a process wherein teacher plans organization of learning experiences and implements the plan in the classroom with the help of appropriate methods and media in order to help the learners achieve relevant knowledge and develop necessary skills and attitudes.
- 4) Instructional planning is important for a classroom teacher as it provides him/her a direction to organize learning experiences effectively to achieve the pre-determined objectives.
- 5) There are mainly three levels of instructional planning. These are:
 - a) Course Planning
 - b) Unit Planning
 - c) Lesson Planning
- 6) Unit planning refers to instructional planning carried out for a unit or a chapter, whereas lesson planning is done for a given topic which can transacted in a period of fixed time, i.e. 35, 40 or 45 minutes.
- 7) The process of identifying various concepts and propositions such as principles, laws, theories, etc. in a given content and arranging them with into a proper sequence is called content analysis.

- 8) **Knowledge:** Learners will be able to identify different parts of a tree with the help of a picture.
- 9) **Understanding:** Learners will be able to differentiate between a herbivorous and carnivorous animal.
- 10) **Application:** Learners will be able to find out the time at New York when the time at New Delhi is 5.00 a.m.
- 11) The factors that need to be considered in selection of methods are:
 - i) Content
 - ii) Objectives
 - iii) Learners' characteristics
 - iv) Teacher's ability
 - v) Size of the class
- 12) Teacher talk is considered important in classroom curriculum transaction as two third of the talk in the classroom is done by the teacher which include introduction, presentation and summarizing of the content.
- 13) Teacher talk can be made effective if it is integrated with classroom discussion, questioning and answer, and other interactive techniques such as brainstorming, debate, seminar, group work, etc.
- 14) Learner participation in curriculum transaction is considered important as it makes learning more active and leads learners to achieve higher cognitive learning.
- 15) Learner's participation can be enhanced in the classroom transaction process through active learning methods, their participation in different activities, understanding of their concerns and setting realistic and achievable goals.
- 16) Teaching effectiveness refers to realization of goals and objectives by teachers at the end of the instructional process.
- 17) The ways of making teaching effective are:
 - i) Self-observation
 - ii) Observation of others
 - iii) Action research
 - iv) Maintenance of diary
 - v) Building up of a feedback system
 - vi) Resorting to active learning methods

UNIT 13 CURRICULUM TRANSACTION IN ODLS

Structure

- 13.1 Introduction
- 13.2 Objectives
- 13.3 Correspondence Education (CE) Model
 - 13.3.1 One-way Communication CE Model
 - 13.3.2 Two-way Communication CE Model
 - 13.3.3 CE Lessons with Assignments and PCP Model
 - 13.3.4 Nature of Different Components of Correspondence Education
- 13.4 Multi-Media Model
 - 13.4.1 Nature of Multimedia
 - 13.4.2 Various Kinds of Media used in ODLS
- 13.5 Teleconferencing Model
 - 13.5.1 Nature of Teleconferencing
 - 13.5.2 Audio Conferencing
 - 13.5.3 Video Conferencing
 - 13.5.4 Computer Network based Conferencing
- 13.6 Flexible Learning Model
 - 13.6.1 Nature of Flexible Learning
 - 13.6.2 Nature of Flexible Delivery
 - 13.6.3 Aspects of Flexible Delivery
 - 13.6.4 Role of ICT in Flexible Learning
 - 13.6.5 Institutional Responsibilities in Flexible Learning Model
- 13.7 Virtual Campus Model
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 - 13.7.2 Uses of Virtual Campus
 - 13.7.3 Different Modes of Virtual Campus Studies
 - 13.7.4 Virtual Campus and Other Forms of ODLS
- 13.8 Let Us Sum Up
- 13.9 Unit End Activity
- 13.10 Suggested Readings/References
- 13.11 Answers to Check Your Progress

13.1 INTRODUCTION

Open and Distance Learning System (ODLS) has moved through different phases since its conception. The teaching-learning activities in ODLS are carried out through various modes, methods and media. Keeping in view the basic nature of ODLS, its philosophy, socio-economic conditions, technological advancements and more specifically developments taking place in pedagogic theory and practices, curriculum transaction in ODLS have gone through massive transformation during the last three decades. In this unit you will be exposed to the different models of curriculum transaction in ODLS, their characteristics, and uses in the context of multiplicity associated with functioning of ODLS.

13.2 OBJECTIVES

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

- classify different models of curriculum transaction adopted in ODLS;
- differentiate the characteristics of various models;
- analyse the uses of each of these models in the context of its prospects and constraints; and
- appreciate the role of ICT in curriculum transaction of ODLS in the context of developments taking place inside and outside the system.

13.3 CORRESPONDENCE EDUCATION (CE) MODEL

The traditional mode of delivery in distance education (DE) is known as correspondence education mode. As you know, because of development of print technology and postal communication system, correspondence education model became popular all over the world. This model went through changes in view of incorporating self-study technology as well as interactivity by postal communication and occasional face-to-face contacts between distance learners and tutors. The correspondence education mode passed through various phases described as under:

13.3.1 One-Way Communication CE Model

The traditional model of communication adopted in Distance Education is postal correspondence based on one-way communication. It is assumed that learning takes place through reading of correspondence materials in the form of self instructional materials, reference books, text books and other forms of print based reading materials. The DE institution takes every care to develop suitable course material on the line of self-instructional principles. The print based materials are produced in appropriate structures and numbers and are dispatched to the learners. Because of limitations of one-way communication from educational point of view, educationists rate correspondence study mode as a secondary channel/weak channel of education. In spite of popularity of such form of education, especially for preparing students for several kinds of entrance tests, correspondence study programme is considered as a weak process of DE.

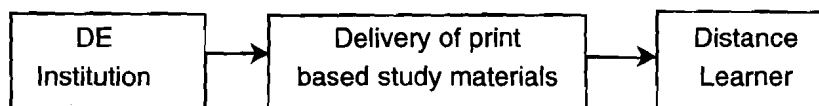


Fig. 13.1: Model I of Correspondence Education

13.3.2 Two-way Communication CE Model

With a view to encouraging two-way interaction between the tutor and the distance learner correspondence mode was introduced in the form of assignments in addition to one-way communication through correspondence text materials. The learners are supposed to submit assignments at a regular interval in an academic session. The response sheets are evaluated and feedbacks are given to the learners on the basis of evaluated assignments. Moreover, the student's queries are answered by the tutor through correspondence. Hence, correspondence-based feedback is given to learners by tutor and vice-versa. Experience of such system of communication reveals that two-way interaction through correspondence mode may contribute towards refinement of

understanding level of learners. There are several drawbacks which come in the way of opportunity for sustaining two-way communication. Major emphasis is given on preparing and transmitting course materials. Evaluation of assignments becomes a formality on the part of most of the institutions. Similar is the case of students submitting assignments as a pre-condition of course completion.

However, there have been efforts to take every care in course material development with emphasis on flexibility and facility for self-interaction of learner. Efforts are made to foster instructional inputs for strengthening interaction of the teacher with learner (through assignment system) of the learner with ideas expressed in course materials; of the learner with himself, his intellectual and emotional preconception, consideration and reflections on his reading.

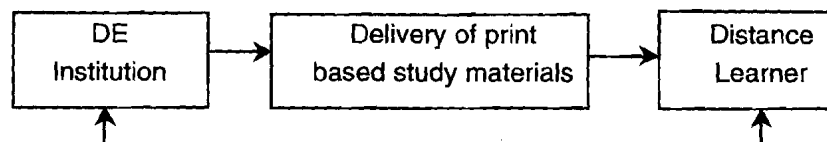


Fig. 13.2: Model II of Correspondence Education

13.3.3 CE Lessons with Assignments and PCP Model

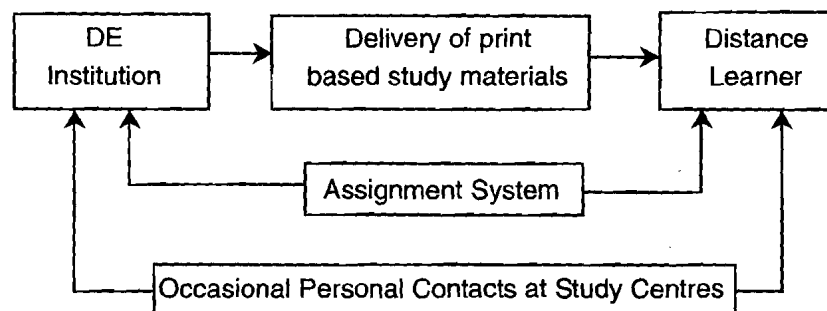


Fig. 13.3: Model III of Correspondence Education

During the seventies this model became very much popular. In addition to availing the benefits of self-study materials and tutor feedback on assignments the distance learners get opportunities for occasional face-to-face contact with tutors during Personal Contact Programmes (PCPs). The Distance Education Institutions make collaborative efforts in holding PCPs in colleges/universities/academic institutions located in the vicinity of students' habitations. The subject experts are drawn from the concerned academic institutions. Contact classes are held for a week or so, preferably during vacation days with a view to clarifying doubts of learners in self study as well as providing learning experiences through various kinds of group activities like workshops, seminars, and symposia. Besides contact session interactions, provisions exist for practical and library study activities. The success of PCP centre activities has paved the ways for study centre concept where DE institutions make a structural provision for student-teacher/student-student occasional contacts according to needs and feasibility of learners.

Traditional mode of distance education included facilities for interaction between teacher and learner. Advanced mailing system by post and computer marked assignments have contributed towards two-way communication process. To some extent tutor comments strengthen real and simulated interaction. However, in addition to the above, facilities are explored for occasional contact experiences which will not only be treated as a direct source of feedback to learner but also as a source of reflective thinking. Much has been talked about the mechanism of interaction in traditional correspondence education

set up. However, the major emphasis remains on production and distribution of correspondence text with anticipation that self study of such materials would serve the purpose of DE system. Due to advancement of communication technology many new models have emerged in DE system.

13.3.4 Nature of Different Components of Correspondence Education

As presented above, three components viz., Print based self-study materials; Assignments and PCPs form essential feature of correspondence mode. The following presentation highlights nature of such components:

Among a variety of text materials the popular ones are modular self-study printed materials. The correspondence study institutions develop their text according to their respective format of presentation of texts with due focus on course objectives, course content, language, organization of context, style of presentation, self-assessment questions, model answers etc. The open universities pay major attention to correspondence text materials viz., Open Learning Materials.

Major characteristics of print based materials used in ODLS read as follows:

- i) Their contents are directly linked to behavior of a learner. They are organized in short units separately bound and placed in different packages.
- ii) Learners' motivation and interest in study are maintained through appropriate presentation style of open learning materials.
- iii) Learners are given opportunities to think on their own and reflect on the presented text of the materials. They get the chance to have the feeling of self-involvement in their progress.
- iv) Open learning materials are directly linked to needs and requirements of learners as well as the learning objectives.
- v) Open learning materials encourage learning to occur in an experimental way, through answering self-answer questions, and getting feedback for improvement.
- vi) The structuring of open learning materials depend heavily upon learner's need and choice and less on the author's choice.
- vii) They include specific self-assessment questions (SAQ) at different sub-units or elements of average unit. They encourage learners to respond to SAQ through different modes; may be through written form and projects etc.
- viii) Every SAQ is supplemented with enough space for getting students response on the question. This facilitates learner's self-activity while using the text.
- ix) The tone and style of open learning materials are very friendly in nature.
- x) They too encourage use of visuals as well as related non-print media as a part of a learning package.
- xi) Each block of open learning material includes a few units or capsules. Each unit is divided into a few sections. Usually each unit/capsule has a beginning section, middle section and end section.
- xii) As a whole the self learning material's major focus remain on enabling a learner to know "how am I doing" and "what should I do to achieve the goals"?

Assignments

In correspondence courses the written assignments form the core of continuous assessment to be performed by the tutors. They are also called as tutor-based assignments. Tutor assignments consist of a number of questions on each unit of learning material. The questions can be of different types: objective type mostly with supply answer questions, short answer questions and long answer questions. Assignments are to be cleared by students at different intervals of course continuously.

The main purpose of assignments is to help learners:

- to know the progress of learners from time to time;
- to have interaction with tutors, usually by post;
- to get feedbacks from the tutors through tutors' comments on assignments;
- to take remedial steps for improvement of learning;
- to keep in touch with studies continuously;
- to maintain motivation and commitment to their studies;
- to develop self confidence in studies;
- to prepare for formal examinations.

The assignment questions must be linked with learning objectives as stated in the context of open learning materials. There can be instructional objectives of various levels of different domains viz., cognitive, affective and psychomotor. Hence the instructional objectives are identified as preparation of alternative questions corresponding to each instructional objectives. Some of these questions can be picked up as assignment questions. As stated above, there are different types of questions viz., objective type, short answer questions and long answer questions suiting to the requirements of instructional objectives. Along with these questions the evaluation guides are developed to mark each assignment question. Guides for essay type questions can include sketches of model answers.

There are instances of printing assignment questions as a part of learning materials/units. As an alternative, assignment can be printed separately especially when new assignments are to be attached with the study materials, which are used repeatedly without revision for a successive year.

As stated above, the assignments are submitted by students as per course requirements. The tutors/subject experts assess learner's performance on each assignment. They give comments on each assignment. There exists provision for assigning grades/marks to learners on assignments course wise. The distance learners get back the evaluated assignments along with tutor observations/remarks. It acts as a major feedback to learners by postal communication mode. Many universities in India follow such practices as a supportive measure in distance learning.

Personal Contact Programme

This is a unique contribution of the Indian Correspondence Education System. The PCPs act as a major source of face-to-face interaction of distance learners with the tutors. The correspondence education institutions take care of organizational aspect as well as academic aspect in the context of a successful PCP. The organizational component includes identification of PCP Centre, students accessibility to the location of PCP, ensuring infrastructural support for PCP, boarding and lodging provisions, academic

support like libraries, laboratories, media and technology-based instruction facilities available in the centre, time schedule and advance notice to the distance learners. The academic considerations involve identification and involvement of available resource persons and tutors, nature of learning experiences to be provided during PCP, identification of core components of content areas to be focussed during contact classes, identification and selection of available technological support in teaching-learning activities, group interaction methods, assessment of learners and feedback, guidance to learners for involvement in self study activities etc.

The Indian model of PCP was treated as one of the most effective components of correspondence education as acclaimed by international level experts on DE. Success of such component has contributed to the concept of Extended Contact Programme (ECP) in the study centres of modern Open University System.

Check Your Progress 1

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units.

- 1) In what context does assignment system contribute to curriculum transaction and evaluation of learners?

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- 2) What is the basic nature of self-learning material?

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- 3) What are the uses of PCP?

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13.4 MULTI-MEDIA MODEL

13.4.1 Nature of Multimedia

With the advancement of communication technology and systems approach to communication ODLS explores opportunities for identifying and designing suitable multimedia strategies for instruction in distance education. Multi-media approach connotes to an integrated approach adopted at the time of course design so that specific learning experiences are identified along with use of different methods and media. It incorporates two major components of communication: (i) one-way transmission of information and (ii) two-way interaction process. The first component highlights planning, designing, producing and distributing structured or semi-structured study materials with assignments. The second component highlights instructional processes incorporating appropriate technologies for consistent two-way interactions between learners and tutor and among learners themselves. The methods and media are selected keeping in view the objectives of teaching learning system concerning a particular course. In the context of Open University System, especially Open University, UK (UKOU) and IGNOU, one can come across use of one-way mediated communication mode like distribution of self instructional print material, distribution of video and audio cassettes, TV and Radio programmes broadcast, cable TV transmission videotext etc. Such components are integrated with support activities and experiences through individual counselling, telephone tutorials, study centre activities, computer aided instruction, library studies, guided project work, practicals etc. Such system integrates age-old practices of print-based media with sophisticated electronic communication media with a view to encouraging open learning. Of course, rare opportunities for face-to-face group interaction in certain specific circumstances are not eliminated from Open University instructional system. Some of the major media facilities integrated in Distance Education Programme are presented as follows:

13.4.2 Various Kinds of Media Used in ODLS

Radio Broadcast

Radio, as a medium of distance education, has been appreciated from the point of view of dissemination of information, development of imagination of learners and development of curiosity among learners to raise several queries. It has been used extensively in DE institutions in Australia, Europe, America and Asian Countries. As a medium of open learning, it has a number of advantages especially in the context of developing countries. In India the All India Radio (Prasar Bharti) broadcast educational programmes as a regular feature. Moreover, IGNOU has introduced Gyan Vani programme as an integral component of distance education.

Radio Vision

Radio vision is a popular medium of instruction of ODLS, as used by Open University, UK. It means supplementing radio broadcast programme with appropriate visuals. Appropriate visual aids (slides) along with study guides are supplied to the distance learners in advance. Sometime recorded radio programmes along with visual support materials are used as substitute of radio vision.

Educational Television

Television is accepted as a popular medium of ODLS because of its potential in strengthening audio-visual experiences. It is used in developed as well as developing

countries. In India, the educational television programmes of Indira Gandhi National Open University (IGNOU), University Grants Commission (UGC), Central Institute of Educational Technology (CIET) and National Institute of Open Schooling (NIOS) are the best examples of medium of DE. As you know, a full time channel has been devoted to Educational Television (ETV) in India, through 'Gyan Darshan' since 2000.

Telephone Tutoring

Telephone can be used as an effective medium of interaction of DE students. The American universities make extensive use of telephone in ODLS activities. Telephone can be used for DE through special "Educational Telephone Networks".

Learners residence can be connected with study centres, different resource centres like libraries, laboratories, educational institutions, and professional organizations, facilitated with a set of microphones and a loud speaker. These microphones and loud speakers can be plugged into a standing telephone coupler. A group of around sixteen students can make use of an Educational Telephone Network Settlement. The students can make use of microphone for interaction with the tutor or students of other locations. There can be facilities for using audiocassette lesson programmes through such network.

Multimedia Based Computer Instruction

Multimedia based computer instruction is the latest advanced technology available in the world. Multimedia is the integration of text, audio sound, static graphic images, animations and full motion video. Multimedia makes use of some of these or all the means of communication in an integrated form.

Multi-media is a combination of technologies. It aims at making computers easier to use. A multimedia application stores huge amount of information on CD-ROM (Computer Disk-Read Only Memory). Unlike a book or a television multimedia incorporates interactive component, which is very much valuable to a distance learner. Personal computers with multimedia technology can bring educational facilities to the doorsteps of a learner with audio-visual interaction based learning.

Different components of multimedia read as follows:

Text

Text is the basis for word processing programmes. It forms an essential component of multimedia. The text of a book can be available on computer windows. Information related to the text, index, definitions, code words, glossaries can be presented in colourful forms. The text based information, on any topic or problem can be displayed on the computer window in whatever size or colour one wants. The advantage of multimedia is to incorporate lakhs of pages of information at a time. It is said that 6-lakh pages text can be recorded in a single CD-ROM for 5 years.

Audio Based Information

It is a unique mode of communication technology in computer system. Some types of information cannot be communicated effectively without the use of sound such as music appreciation, pronunciation, heartbeat etc. Audio communication integrated with text or animation can make communication more effective through multimedia.

Audio sound in the formats of 'Red book audio', 'windows waves file', and 'musical instrument', 'digital interface' can be used in multimedia.

Static graphic images mean 'still' images as presented in photographs and drawing. Multimedia makes best portrayal of graphic images through a number of formats created in a number of ways. Unlimited images can be included through multimedia more easily than it would be in a DOS-based environment.

Animation

It means moving graphic images. Animation is useful in communicating different concepts that involve movement e.g., solar system; playing a musical instrument, dance steps etc. Animation makes it easier to clarify such concepts and training through multimedia application.

Full-Motion Video

Full motion video presentation, as in the case of television can be presented clearly through multimedia. Its quality is far above the television presentation. It has accessories for getting the video from an external input (including video cassette recorder and camera) and storing it on the hard disk drive.

Interactive Communication

It incorporates two-way audio and video communication between the communicator and the learner. Many corporations make use of multimedia to train their trainees through two-way interaction based communication. Computer networking integrated with fax circuit and telephone line can make it possible to have two-way interaction possible in the case of distance education programmes.

Multimedia can be of immense value for education and training sector. In the initial stages it seems to be expensive for formal schools and colleges. In the long run, multimedia based computer education would be cost effective and act as most vital means of ODLS.

Check Your Progress 2

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units.

4) Define multi-media approach to curriculum transaction in ODLS.

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5) What are the various media and materials used in ODLS?

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- 6) Classify the following methods and media as one-way and two-way communication technologies – Radio, Radio vision, Assignment, Television, PCP, Telephone, Seminar, Newspaper, Correspondence text, Computer aided instruction.

One way

Two ways

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13.5 TELECONFERENCING MODEL

There are various teleconferencing models. In this section, we discuss these models.

13.5.1 Nature of Teleconferencing

Teleconferencing is understood as “Two-Way electronic communication between two or more groups, or three or more individuals, who are in separate locations; includes group communication viz. audio, audio graphics, video and computer system” (Olgren and Parker, 1983). Among these means audio and video teleconferencing are popular media in developed as well as developing countries. In the initial stage, educational teleconferencing was experimented with the help of telephone lines and closed circuit television. Because of advancement of satellite technology the delivery systems of teleconferencing has been convenient for educational situations.

Teleconferencing plays a major role in Distance Education situations because of its potential of group method of learning at a distance. It facilitates interaction between teacher and learner as well as learner and learner. It acts as a substitute to classroom based face-to-face learning. DE was very often criticised for its limitation in encouraging group learning since its means were restricted to individual and independent study. As stated in the previous section, DE will have to accommodate powerful and stable means of mediated interaction. Teleconferencing can provide solution to this issue in DE. Because of application of teleconferencing ‘independence and isolation need not be regarded as an inherent characteristic of distance education (Garrison, 1989). Teleconferencing can bring richness and variety in interaction between teacher and students and students and students.

Teleconferencing proves its worth in the context of regularity and immediacy of two-way communication. Tutors and students can establish contact on a continuous schedule. Limitations of postal correspondence based interaction is overcome by teleconferencing. Teleconferencing can be integrated with regular study activities because of its naturalness in communication. A well designed schedule of teleconferencing can replace face-to-face contact programme group activities conducted by tutors at regional study centre levels.

Teleconferencing can be treated as most powerful means of DE since it can suit organization of educational programme for small and widely dispersed target groups. Moreover, it can be equally applicable to large size and heterogeneous group of learners. Usually, DE institutions follow the norm for admitting large number of students keeping

in view economic feasibility of the system. Teleconferencing, especially audio teleconferencing can be quickly and inexpensively developed and delivered for small group of learners.

13.5.2 Audio Teleconferencing

Audio teleconferencing is a comparatively cheaper medium of teleconferencing to that of video conferencing. Two-way audio interaction encouraging group learning can place DE in most advantageous position. It takes advantage of an existing and easily accessible telephone system. Satellite communication based telephone system can also widen the scope of geographical area coverage of teleconferencing. Audio teleconferencing suffers from the drawback of lack of video communication from communicator as well as communicate sides. Such limitation counts weightage when we treat it as a single medium of DE. Appropriate design is to be made integrating audio teleconferencing with visual resources like slides, overhead transparencies, videotapes or various audio graphic materials. Moreover, it has been observed that audio teleconferencing integrated with study of correspondence text already delivered to students in advance can act as a powerful support system for learners. The frequency and immediacy of teleconferencing can sustain study habits of learners.

Tele Lecture

Tele lecture is basically a one way communication mode linked with limited scope for question answer towards the end of the lecture. It has a lot of similarities with radio broadcast in terms of writing lecture script for the listeners with whom face-to-face contact is not possible on the part of the presenter. The telephone lines are linked with telecommunication network. Its coverage can be feasible at both micro level as well as macro level. The state open universities with jurisdiction over a concerned state can provide such networking at study centre levels. This will facilitate two-way audio based teleconferencing with DE course related activities.

Phone in Programme

Phone in programme incorporates two-way interaction between the expert presenting his talk through radio broadcast and the distance learners. The learners make use of local telephone for question answers. The Gyan Vani programme is a typical example of Phone in Programme in India.

Audio Teleconferencing Supported by Visuals

There are different visual devices, which can be integrated with Audio Teleconferencing to overcome the drawback of absence of visual input. Still images can be sent through satellites, microwaves, cable lines and other means. It can be integrated with audio messages communicated through telephone lines. The popular media support for audio teleconferencing is slow-scan television.

A television camera supplies images to slow-scan and the pictures are transmitted through a narrowband channel. The video pictures can be viewed at the end of learners with the help of television monitors. The tutor can send messages through slow-scan television during the audio teleconferencing session.

Tele writing is also used as a supplement during audio teleconferencing. Tele-writing images can be produced by using a light pen to write directly on a television screen or

with a piece of chalk on an electronic blackboard or by using the electronic tablet. The side participants viz., tutor as well as learners can express their views through audio system integrated with visual communication through tele-writing. Technology is available for transmitting voice and data concurrently along a single line. Time and cost is minimized since one does not require two different transmission lines for such teleconferencing.

Tele Tutorial

Mostly it involves two-way interaction of audio and one-way video technology. On many occasions it involves integration of audio-based communication through telephone lines. The visual materials may be sent previously by mail or they can be transmitted through computer networking or fax or through slow scan television camera system capturing still images through telephone lines. It involves audio presentation by the tutor at a distance with integration of visual materials available with learner groups. After practicing the skills or performing assignment the learners contact the tutors at a distance for clarifying difficulties, seeking reinforcement on the lesson. This technology has been found useful in organizing demonstration –cum–explanation activities, feedback sessions and development of skills of distance learners.

13.5.3 Video Conferencing

Through video conferencing it is possible to provide a two-way exchange of both live television images and audio signals between two or more sites and three or more individuals.

Two-Way Audio: Two-Way Video Interaction

Such type of conferencing is possible through two way television network. The presenters from different TV stations or videoconference studios can interact with each other with audio-video system. Satellite system enables distance learners viewing the ETV programmes consisting of teacher-student and student-student interaction taking place at a wide TV network. Learners sitting at home and watching audio video teleconference get a feel of classroom through TV screen. Moreover, several questions raised by a particular learner may be raised by students participating in ETV. This medium is a costly system. However, such system can serve both purposes i.e., expert interaction as well as popular interaction. Since the system requires high technology concentration and heavy expenses it is advisable to go for one-way video-two way audio conferencing.

One-Way Video: Two-Way Audio Interaction

Through this system the participants remaining in different parts of the region can interact with the presenter of TV station. Satellite based communication system facilitates easy telephone communication from learners to the presenter. In response to the learner's queries at the time of telecast of lesson, the presenter can answer the questions through TV line on the spot. While the learner's queries can be accessible to the presenter by satellite-connected telephone, his response can be both audio and video based through TV. The viewers of TV can only listen to the queries of distance learners while they can get audio-video response of the presenter on the screen. This facility encourages interaction between the presenter of ETV and the distance learners at the spot time of telecast system. The IGNOU makes use of such kind of teleconferencing very frequently as a course activity as well as for training of DE personnel.

Tele seminars are organized for small group of participants with major focus on achievement of higher-level objectives. Interaction is restricted to a group of participants scattered over distant places, having access to networking for audio and video communication. The coordinator organizes the schedule of seminar presentation and discussion sessions. Mainly it follows two-way audio conferencing with coordinator's control. However, two-way audio and one-way video teleconferencing sessions can be used for seminar purpose through such technology.

13.5.4 Computer Network Based Conferencing

With the emergence of advanced level technology computer networks have been found very useful means of immediate delivery of messages. It also encourages interaction between the learner and the computer; between learner and tutor, and between learner and learner connected through network. Different types of computers including major data based as well as home computer can be interlinked through networking.

Computer based instruction can take place through remote network as well as local network. Remote net works include telecommunications between central level database and computer and the microcomputer at delivery level. The local network use terminals for connections inside a complex of an institution campus.

Electronic lecture can be delivered through networking of computers. Whether inside or outside the classroom situation, face-to-face lecture is replaced by electronic lectures. The instructor can deliver lectures from any point of computer network. Improved quality computer software for conferencing can pave the way for popularising electronic lectures. This can also include interaction between the learner and the instructor. It can encourage individualised as well as group based learning depending on the available facilities of computer networking through distance duration institution.

Computer Conferencing in DE

Two-way interaction takes place through existing networks of computers. Teleconferencing through computer networks has advantage over video conferencing with regard to flexibility of communications through computers. In computer conferencing text based messages and files are communicated through computer networks. On the basis of text based messages discussions take place through computer network. Such discussions may be of non-structured nature. In DE situation such conferencing can be encouraged for interaction of co-operative learner groups through local net working (LAN). This has been experienced by the Open University, U.K. that computer based teleconferencing (Mason, 1989), is mostly feasible in the case of small co-operative learning groups. In computer conferencing system there is provision for the small group meetings to run parallel to the main transaction of large group computer conference. The large group deals with major issues related to course based experiences. It is difficult to accommodate minority interests in detail in large group conferencing. Hence, small self selected groups of learners focus on specific issues of their interest through LAN. The small groups of learners having access to LAN can make frequent use of conferencing. The uses of such conferencing are well accommodated in Flexible Learning Model as presented in the following section.

Computer Mediated Tele Seminar

Computer mediated tele seminar involves textual presentation followed by group interaction through computer-conferencing network. It may spread over for a few days/ weeks depending on the convenience of participants. The participants get ample scope to comprehend the contributions of each other. They get time to refer related literature on the concerned issues, make proper preparation and react to the questions/ comments through network. It encourages more intensive discussions based on thorough preparation on the part of the participants. The participant's get chance to penetrate on the issues and think about their ideas leisurely and communicate in textual form. They may express their views without mentioning about own identity. It encourages generation of novel ideas more openly. More details about the use of such technologies have been presented in the form of Flexible Learning model and Virtual Campus model.

Check Your Progress 3

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units.

7) What are the different forms of teleconferencing?

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8) What are the advantages of audio teleconferencing?

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9) Give example of a few teleconferencing programmes associated with ODLS in India?

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10) Differentiate the following:

- a) Two-way audio conferencing and two-way audio one-way video conferencing.

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- b) General Teleconferencing and Computer based teleconferencing.

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13.6 FLEXIBLE LEARNING MODEL

The concept 'Flexible Learning' is very often interchanged with the concept of Open Learning. Hence, it is perceived as a broad concept rather than just perceiving as a delivery model. Theoretically, there has been a lot of analysis on this concept. However, from the point of view of delivery model it has been easier to perceive its presence because of advancement of information and communication technologies (ICT) since 1990s.

13.6.1 Nature of Flexible Learning

As you know, the key stakeholder of education system is the 'Learner'. The Flexible Learning signifies flexibility on the part of learners to have access to knowledge system, choosing curricular experience of one's own choice, constructing new experiences and availing optimum benefit from teaching- learning system with the help of information technologies. In other words, it can be said that Flexible Learning is a student centred approach to Learning. Nunan (1996) puts the concept as follows:

"For students and teachers it can suggest a student-centred approach to learning and democratisation of processes of learning and teaching. For curriculum developers it may mean the availability of a range of approaches to suit student diversity. For those marketing educational services it can mean the production of commodities which can be used competitively in a global educational market. And for those students who cannot, or choose not to, attend an educational institution it can spell the end of campus bound teaching, with education being delivered at home and work place in ways and times to suit their circumstances. Flexibility can therefore mean different things to different stakeholders within education ... In short flexible delivery and flexible learning has virtue that provides something for everybody". The University of Queensland report (2002) views Flexible Learning "as an over reaching approach which emphasises an education where learning opportunities and options are increased and where students have more control over the learning process. It focuses on improving learning outcomes and maximising student engagement in learning by using the most effective, varied and appropriate teaching and learning modes".

From the above presentation, you will notice a few characteristics of flexible learning.

- Learner's control over self-learning is optimum. The factors, which inhibit learners control over learning, are marginalised. Learners have open access to varieties of contents, learning situations and approaches of learning.
- It is not only the opportunities with regard to alternative modes of learning but also opening avenues for optimising learner's participation in learning process.

13.6.2 Nature of Flexible Delivery

Flexible delivery means providing opportunities for increasing flexibility in learning. It is the term used to indicate processes by which facilitation of effective student-centred learning is implemented. Flexible delivery includes the provision of resources and the application of ICT to create, store and deliver course content and enrich communications to enable more effective learning to occur. For example, web-based, on line and distance learning can be included as flexible delivery mode. With the help of these technologies there can be significant opportunities for enhancing flexible learning, information access and self-managed learning. This model has following specific features:

- 1) More emphasis on guided independent learning through provision of appropriate guidance to learners.
- 2) Greater reliance on high quality learning resources using a range of technologies i.e., print, CD-ROM, video, audio and the Internet.
- 3) Greater opportunities to communicate with tutors and among peer learners.
- 4) An increasing use of ICT. ICT is central to much of the implementation of learning activities, such as delivery of learning resources, conducting self-assessment and providing student support services.

Because of technological advancement delivery arrangements are made so flexible that learners of various background can have access to learning and can pursue learning as per own capacity and choice.

13.6.3 Aspects of Flexible Delivery

As presented above, flexible learning mode involves choices about flexibility in more than one means. The learner gets opportunities to make choices on the following dimensions of learning system:

- Modes of delivery of materials and interaction;
- Development of programme structure;
- Content of the programme;
- Pace of the programme;
- Amount of contact with tutors and interaction among learners;
- Varieties of media used for delivery of learning resources;
- Extent of self-direction learners must employ in order to complete the programme;
- Time and space constraints on access to programme materials or other learning experiences.

Aspects of Web-based Flexible Learning

The web-based resources are utilised to enhance flexible learning by means of promoting more active engagement and interaction. It provides easier and more equitable access by students to learning experiences provided by an open university. Promotion of on-line resources facilitates flexible learning with several options. Some of these distinct facilities are listed as follows:

- Information on courses and programmes, course structure, instructional system, evaluation processes, etc., are available via the web. However, there may be option whether the learner would like to pursue studies through on-line system or not.
- Wherever, the learner participates through on-line system for studies, there is provision for participation by using course materials, by interaction with staff and student's or among students. There may be facilities available for supplementing on-line delivery with occasional on-campus, face-to-face interaction.
- There can be provision for fully on-line delivery of whole course contents and related learning experiences without having access to face-to-face interaction component. These features of flexible learning delivery mode indicate the major role of ICT, of course, accommodating various options for multimedia based as well as face-to-face interaction based learning components to a certain extent.

13.6.4 Role of Information and Communication Technology (ICT) in Flexible Learning

The flexible delivery models depend heavily on the contributions of ICT in teaching-learning system. The limitations of face-to-face traditional teaching learning system is overcome by introduction of ICT in education because of the assumption that any agency or individual has the capacity to both produce and distribute knowledge and information on a global basis through digital communication technologies. In recent decades, there has been growing demand for knowledge according to perceived needs of learners. The traditional compact programme or course based knowledge is to be replaced by learner free and flexible knowledge system. In this context ICT contributes a lot to structurise information in flexible ways i.e., in the form of modular packages, short-term upgrading sessions, just-in-time training, updating skills on demand, etc. The educational provider finds it easy to provide educational services in the workplace, at home or at an institution at times as per requirement of learners.

The structured knowledge which is taught as per choice of experts or social system in traditional education system is also replaced by learner free knowledge. ICT plays a major role in reversing the situation of subject expert control to 'structure of interests' being shaped by what students choose to learn. The group activity based teaching like tutorials, workshops, seminars and symposia which are supposed to be teacher directed are being replaced by ICT based interaction sessions with different groupings, communication patterns and learner involvement.

Another significant component of ICT based learning is seen in the context of availability of various sources or texts to learners. With increased access to diverse and linked text, and the ability to cut, copy and manipulate such text, the learner gets opportunity to be involved in the learning process on the basis of texts available from worldwide sources of ICT. The learners involvement is increased since she/he inquires, searches, chooses, interconnects and forms his learning text as per her/his own needs and problems.

The concept of curriculum design and delivery is very much different in flexible learning model. The traditional education develops a structured pattern of course content, delivery, and evaluation of teaching-learning system. In the flexible learning model technology intervention radically replaces the conventional curriculum model by making information available to participants without screening or ordering. The picture of order, structure, sequence, self-entrainment and provider control is replaced by multiple sources of information and opportunities for encouraging learning queries for self-learning and involvement.

To conclude, it can be said that flexible learning is the form of learning carried out mainly by the ICT. The learners expectations about teaching-learning and their approach to learning mainly depends on their experience of using ICT. The extent to which the ODLS institution empowers its learners and teachers to make best use of ICT shall indicate its success on flexible learning delivery modes.

13.6.5 Institutional Responsibilities in Flexible Learning Model

The open learning institutions adopting Flexible Learning need to take care of the following points while taking decisions on curriculum development and transaction:

- Scrutinising existing curriculum or designing new curriculum with a view to ensuring enhanced options for learners.
- Maximizing the potential of on-line delivery to provide materials and enable group communication.
- Identifying areas of priority for development of web dependent and fully on-line materials.
- Maintaining high quality educational experiences for all students who may use on-line delivery/web-based facilities partially or fully.
- Increasing flexibility in administrative approaches to student entry, enrolment, progression, evaluation process and
- Preparing appropriate human resource development strategies for promotion of flexible learning delivery mode.

Check Your Progress 4

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units.

11) What are the characteristics of Flexible delivery model?

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12) How is Flexible delivery model different from Multi-media Model?

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13) Write any three major aspects of Flexible Learning Model

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13.7 VIRTUAL CAMPUS MODEL

Virtual campus is a place on the Internet where students can go to take courses, learn on their own, meet with academic faculty and interact with other students. In other words, virtual campus means learning situation available through ICT resembling classroom or campus study facilities on Internet. The students need not travel to the physical campus to attend lectures, seminars, and workshops and procure learning materials. The development of this concept is the resultant of researches in design science and is used on the conceptual metaphor of architectural design.

13.7.1 Nature of Virtual Campus

The virtual campus model has been developed on the basis of the concept of virtual world. Virtual world means creation of networked environments having resemblance of physical world. You might have been acquainted with computer games; such experience shall be useful to understand this concept more clearly.

As you understand, the physical campus has buildings, classrooms, conferencing places, libraries, laboratories and other infrastructure. The teaching learning activities are carried out through teacher-centred as well as learner-centred activities with provision of study materials. The virtual campus has all these provisions of learning. The functions and behaviour of real campus-based teaching-learning model is replicated through virtual campus model.

13.7.2 Uses of Virtual Campus

The virtual campus is used to:

- augment traditional lecture-based teaching with online learning materials and communication.
- support project work that follows face-to-face learning programme.
- provide distance learning with all interactivity and materials available online.

It means that virtual campus mode is available not only for the learners who are at a distant place from a university but also the learners present in a university campus can make use of virtual campus studies as an integral component of physical campus-based studies. It makes use of web-based learning materials along with e-mail and electronic bulletin board facilities available at the end of learners.

In virtual campus the students can have access to online materials, lectures and seminars. While distance education programme makes use of virtual campus facilities, it has been experienced that the learners of a campus-based studies can also choose to hold seminars in the virtual campus.

13.7.3 Different Modes of Virtual Campus Studies

Group Activities

Group activities in virtual campus can be in the forms of *synchronous* and *asynchronous* mode. The synchronous activities occur at a specific time in a classroom in the virtual campus. The classroom can be equipped with a slide projector with a view to projecting main points for discussion by the moderator. There can be provision of a shared whiteboard so that the moderator and student participants can write on. The discussions

are typed in a chat-like environment. This has been noticed that in the case of synchronous seminars initially when participants start participating by looking at the slides on the screen may remain docile. However, once the discussion starts, it leads to conversations on several simultaneous streams. It may move off the central topic. Here, the moderator plays key role in preventing distractions and keep intended discussion on focus. The moderator also ensures participation of all the students. The moderator's role may be played by the teacher or any of the student participants.

The asynchronous seminars are realised through computed-mediated bulletin boards. The time in a classroom is not fixed. The student participant can get benefit of such sessions at his own suiting to his own time schedule.

Virtual Lectures

As you are aware, in a lecture you are expected to listen, take notes and occasionally ask questions to the teacher delivering a lecture. In the case of virtual lectures the online learning can be delivered through the means of video-conferencing technologies, recorded video materials and audio recorded presentations supplemented by appropriate slides.

In the previous section, you have been acquainted with the concept of video conferencing. The live lectures delivered with demonstrations and visual presentations are available on-line. The students can have interaction with teacher as well as among other students through internet. The virtual classroom accommodates all the participant students and the teacher.

The virtual lectures can also be video recorded. Such video recorded lectures can be available as online material. There is another mode of virtual lecture known as audiotape lecture supplemented with slides and pictorials. This mode is economical and technology friendly in the sense it does not require high bandwidth and specialised equipment for video conferencing. The most economic way of virtual lecture is to do the audio recording of effective lectures, in a physical lecture theatre. After the lecture the audio recording is split into segments. Relevant slides are developed on each segment. The synchronized audio and slide presentations are available on-line. Such kind of virtual lectures are very much popular in virtual campus mode.

Besides different kinds of interaction oriented teaching learning methods the virtual campus makes use of online self-study materials, schedules, student tracking, online assessment, continuous feedback mechanism, etc. As a result of this technology the distance learners get a place integrated with access to the online materials, in which they can attend virtual lectures or seminars, or meet causally.

13.7.4 Virtual Campus and other Forms of ODLs

As you have noticed in the foregoing section, because of emergence of online learning and e-learning facilities, 'virtual campus' mode has gained momentum in distance education institutions. Application of ICT enhances distance education so that the physical separation between the learner and the teacher is replaced by virtual campus studies. The open learning policies are implemented by permitting open multi-entry to learning, varieties of courses, credit sharing, net working of resources and opportunities for continuous learning. Promotion of ICT facilitates functioning of open learning system from academic and organizational point of views. Flexible learning concept is made

familiar only through dynamic operation of ICT. While accommodating the principles and policies of open and flexible learning for distance learners, virtual campus model encourages learners' studies at many learning venues with a global network. The use of computers, the web-based studies and e-learning proliferates the meaning and value of virtual education at different stages of education.

Check Your Progress 5

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the Units. -

14) Define Virtual Campus in your own words.

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15) How is it different from traditional model of face-to-face instruction?

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16) How is virtual seminar organized in ODLS?

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Institutional Responsibilities Concerning Virtual Mode

The first issue arises concerning the resources available at single institution level for introduction of high technology system for virtual mode. This situation can be dealt in with the possibility of collaborations for resource management among networked institutions. Hence, networking and collaborative efforts of educational institutions and concerned agencies for promotion of ODLS can play a major role in it.

The socio-economic levels of target group of open university system may lead to discrimination of haves and have-nots in availing of the opportunity of virtual education. The age-old dominance of print material still persists as core delivery mode of most distance education institutions. This situation need to be handled with provision for

development of tele-centres. Creation of such centres not only facilitates learners access to ICT but also it can encourage multiple use of ICT facilities. There is a need to create ICT oriented learning centres, institutional out reach centres, community information depots, etc. with provision for minimum economic burden on user learners. Such provisions can enhance the access of distance learners of diversified background to virtual campus.

There is also an apprehension that the utilisation cost of ICT appliances and connectivity at wider level can come in the way of using virtual mode delivery system. This point needs to be taken care of by having a major policy of collaborations with different kinds of institutions promoting ICT based learning and making major concessions for use of ICT for education purposes. There is also major challenge for enabling human resources to be technology friendly and training the personnel for application of ICT in virtual mode framework.

13.8 LET US SUM UP

In this unit we have discussed the nature and characteristics of different models of ODLS curriculum transaction. The major factors which have influenced curriculum transaction are rapid developments in the field of communication technology and pedagogic principles encouraging flexible learning. The presentation indicates that in future the role of ICT will be very much dynamic in making ODLS curriculum transaction more collaborative, flexible, dynamic and global in nature.

13.9 UNIT END ACTIVITY

Go through the Distance Education Council (DEC) and Association of Indian Universities publications on Directories of Distance Education (DE) Institutions of India. Classify the Indian DE Institutions making use of different models of curriculum transaction of ODLS. Prepare an outline for use of suitable delivery mode of ODLS in the Indian Context.

13.10 SUGGESTED READINGS/REFERENCES

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13.11 ANSWERS TO CHECK YOUR PROGRESS

- 1) To encourage two-way communication between learners and tutor.

Learners get feedback from tutors on their performance in assignments. It can be a continuous process of learner assessment.

- 2) Learners get opportunity to proceed step by step to achieve instructional objectives. The self-learning materials are learner friendly. The presentation is systematic and takes into account learners academic background and needs.

- 3) To provide a platform for clarification of doubts of learners on study of correspondence text. Various kinds of group learning activities are organized in view of achieving specific course objectives.

- 4) Multimedia approach to curriculum transaction incorporates integration of different methods, materials and media systematically in view of achieving curricular objectives of ODLS.

- 5) Print-based, audio-based, video-based, group interaction methods, assignments, computer-based aided instruction, radio broadcast, educational television.

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| 6) One way | Two way |
| Radio, Television, Newspaper,
Correspondence text | Rest of the media stated |

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|---|---|
| 7) Audio conferencing,
(Two-way audio) | Video Conferencing
(One-way audio two-way video;
Two-way audio two-way video) |
|---|---|

- 8) Telephone facilities are economical and widely accessible.

- 9) 'Phone In Programmes' of Gyan Vani; IGNOU teleconferencing activities

- 10) Only telephone network-based;

- a) Telecast on Video cable-based with telephone facilities.
- b) Satellite-based and computer networking-based.

- 11) Learners control over self-learning is optimum.

- Alternative modes of delivery of learning opportunities are encouraged.

- 12) Flexible learning is a principle of encouraging learning opportunities for distance learners. Multi-media model is a strategy of integration of methods and media for achieving curricular objectives.

- 13)
 - Involvement of choices about flexibility about more than one means.
 - Possibility of interaction with tutors and among learners is very high.
 - Learners self-abilities are taken care of in curriculum design.
- 14) Virtual campus is a place on the internet where students can go to take courses, learn on their own, interact with tutors, peer group etc.
- 15) Face-to-face instruction takes place in physical presence of teacher and students. Virtual campus incorporates learning through online and e-learning system resembling physical classroom.
- 16) The tutor monitors interaction on a theme through Internet facilities where learners can raise questions, react and interact in virtual classroom situation.