UNIT 6: COMMUNICATION AND INSTRUCTION

UNIT STRUCTURE

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6.1 LEARNING OBJECTIVES

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

- define communication and instruction;
- explain the process of communication cycle;
- discuss the concept of teaching along with its different phases;
- identify the constituent parts of a teaching machine;
- discuss the role of teaching machine in improving the process of teaching.

6.2 INTRODUCTION

Communication plays an effective and essential role for running the show of any formal or informal teaching-learning process. In many of its way, teaching is communicating and in this sense, good teachers are always good communicators. It is also equally true for the learners. He who learns well is the one who participates well in the communication process. Good learners are always the good receivers and good responders. In this way communication as a vehicle or tool for running the show of teaching-learning act must always be treated as a two way process in which both the source of teaching (teacher) and the beneficiary of teaching (learner) interact well for the proper realization of the teaching-learning objectives. However, for this proper interaction teacher as well as students are required to acquire the art and technique of a good communication.

6.3 MEANING AND DEFINITION OF COMMUNICATION

Communication in its literal sense stands for the act of communing. One can communicate his ideas, thoughts and feelings etc. or transfer any type of information and knowledge to the others through this act of communication. For this purpose he may also take the help of some instruments, appliances or devices like telephone, tele printer, telegram, fax, E-mail, radio broadcasting, telecasting etc. in this sense, communication may be taken as a one side transaction of a piece of information, knowledge, ideas, thoughts and feelings from a person (source of transmission) to another person or persons at the receiving end. However, the meaning of the word communication cannot be limited to such one-way transmission. It is always a two ways affair. The source of transmission and its receiver equally share and participate in the communication process.

Etymological derivation of this term communication also supports the above line of thoughts. As commonly known the term communication

has been derived from the Latin word 'Communis' meaning 'Common'. In this sense as a verb the term communication stands for an act of sharing commonness or common understanding and experiences with others. Agreeing to such etymological explanation, Edgar Dale (1969) the Newton of audio-visual aid and instructional technology, has defined the term in the following words. "Communicating is defined as the sharing of ideas and feelings in a mood of mutuality."

Consequently, in this way communication is to be taken as a sharing process. What we know or have in ourselves in the shape of ideas, thoughts and feelings is shared with others through the process of communication. For this purpose we convey or transmit it as a source of communication or transmission through the help of some or the other media of transmission preferably in the way being well received by the receiving person or persons. The person or persons on the receiving end try to receive and respond to it for the necessary interaction with the source of transmission. In this way a chain process or cycle involving the cooperation of the source of communication and its receivers comes in to operation for the effective realization of the fruits of communication.

Definition:

Some of the important definitions of the process of communication are as follows:

According to Newman and Summer, "Communication is an exchange of facts, ideas, opinions or emotions between two or more persons."

Anderson defines "Communication is the process, by which we understand others and in turn, endeavour to be understood by them. It is dynamic, constantly changing and shifting in response to the total situation."

Hoben defines communication as "the verbal interchange of thoughts or ideas".

According to Shannon and Weaver, "Communication involves all the procedures by which one mind may affect another. This involves not only written and oral speech, but also music, the pictorial arts, the theatre, the ballet and in fact all human behaviour."

According to Merrihus, "Communication is a process of mutual exchange of thoughts, ideas, facts and emotions."

According to John Dewey, "Communication is a process of sharing experiences till it become a common possession."

6.4 CHARACTERISTICS OF COMMUNICATION

Communication has some basic characteristics, which are discussed as follows:

- **Purposeful:** Communication always involves a purpose. Whenever as idea or thought arises in the mind of a sender, he wants to communicate it. This means there is always some purpose behind it. The purpose of communication is to impact attitude and behaviour of those involved.
- **Universal:** Communication is the only way through which human beings can share information. Thus, communication is a universal process as it occurs almost everywhere.
- **Interactive:** Interaction is primary characteristic of communication in which two or more persons or group interact with each other. It may results in social interaction. Thus, it is a two-way dynamic flow of information.
- **Imperfect:** A perfect communication is never possible in reality because what a person thinks can never be exactly understood by the receiver. This is because every individual is different from the other and perfect synchronization of minds is never possible.
- **Dependent:** Communication is performed with the help of some media. Communication is now carried out through various channels or modes, ranging from sophisticated communication media and technology, to non-verbal signals. So, It is dependent on some media through which message from one person could be sent to another.
- **Complex:** Communication is a complex process which involves various steps. A number of barriers can hinder this process at both ends (sender and receiver).

- **Contextual:** Communication always takes place within a context. The context of communication has at least four dimensions: (i) physical, (ii) social, (iii) psychology and (iv) temporal. These dimensions interact and influence, and are influenced by one another.

6.5 IMPORTANCE OF COMMUNICATION

As we have already discussed, communication is nothing but transmission and understanding of message from sender to receiver. It is a very important aspect of human life because it is only through communication that human beings can interact with each other as individuals and as independent groups. It is an essential and basic process in all fields of life. Communication skills can be used virtually in every field. Effective communication is important because it allows people to lead more satisfying lives. Some other reasons which explain why communication is important are as follows:

- **Transmission of information:** Communication is must to transfer information between individuals and places. Any message which is not communicated is of no use.
- **Displaying ideas/emotions:** Whether it is written or oral form, we always express ourselves by communicating with others. Without communication, we are not able to express our feelings or ideas. Hence, communication is important to transmit emotions/ideas.
- **Education:** The whole process of education involves imparting of knowledge to students by the teacher. However, this knowledge is imparted by various media, which depend on communication. Education without communication is impossible.
- **In relationship:** Communication plays a vital role in building relationships between people. It facilitates dialogue, exchange of expression and emotions, which result in relationships. This type of communication decides the relation. It could be personal or professional.
- **Entertainment:** To break away from the daily schedule of life full of

stress, entertainment is a crucial part of everyone's life. Nowadays, every source of entertainment like movies, music, television shows, games, theatre or even anecdotes narrated by people involve communication.

- **Achievements of goals:** The ability and the importance of communication become much more crucial when we are on a mission, or need to achieve a goal. Without a means to communicate, an organisation will become isolated. The ability to effectively communicate is very important to achieve the set goals.
- **Cultural promotion:** Communication offers a prospect to promote and preserve culture and traditions. It helps people in fulfilling their desire to be creative.
- **Integration:** It is with the help of communication that many people in a large number of countries all over the world, gain awareness related to each other's customs and tend to admire each other's lifestyle and culture. It progresses the activity of being integrated and tolerant with respect to each other.
- **Discussion:** The process of debating and discussing elucidate various perspectives on matters that are of interest to people. With the help of communication, the reasons for difference in opinions and imparting of new ideas to others can be pinpointed.

6.6 COMMUNICATION PROCESS

Communication as a two way process involving interaction between the two or more persons (on giving and receiving ends) is carried out in a cycle illustrated below

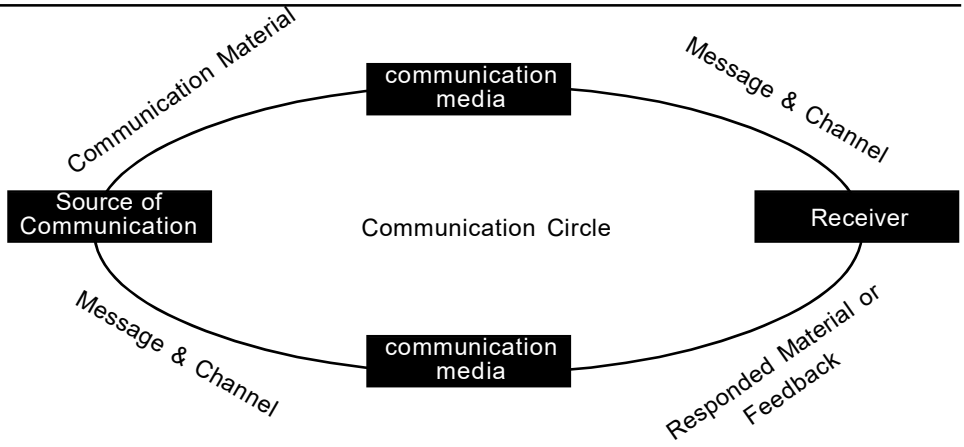


Fig: 6.1. Communication Process

Illustrated as above we may notice the presence of five main components or elements in general in any process of communication namely.

- The source of communication or sender of the message.
- Contents of communication or message.
- Media or channel of communication.
- The Receiver of the communication.
- Response material or Feedback.

Let us know now about these five elements of communication.

- **The source of communication (The communicator):** The process of communication essentially starts with a source of communication. There must be somebody to initiate the process of communication. This source whether in the form of some object/event or person must be in a position to transmit information, ideas, thoughts, opinions and feelings etc. known or possessed by it with the other person or persons on the receiving end of the communication. The source of communication, person or object is generally named as 'Sender' in the language of communication technology. In the teaching learning process going inside the classroom the teacher is to be regarded as the source of communication or sender of the message where in any informal learning situation any source of knowledge (man or material) can be regarded as the source of communication.

- **Contents of communication or message:** What is intended to be communicated or transmitted by the source of communication i.e., sender from his own stock of knowledge, informal thoughts, opinions and feelings etc. to the other person or persons (receivers) is known as the contents of communication. These contents may be well organised and structured or unorganised and unstructured or spontaneous depending upon the nature and purpose of communication as well as the media chosen or situation prevalent at the time of communication.
- **Media and Channel of communication:** What one wishes to communicate to others is always communicated with the help of some or the other appropriate media or channel. The media in general takes the two distinctive forms, verbal and non-verbal. In any communication process, the sender and receiver both are forced to make use of that media or channel of communication which is mutually acceptable as well as effective.

At the onset of any communication process when one as a source of communication or sender of the message tries to convey some information or his own ideas, thoughts and feelings, he is infact motivated to transmit it to the receiver. For its transmission he first tries to organise the communication material in the proper shape and then search for an appropriate media, verbal (spoken or written words) or non-verbal (gestures, sign language, body language, morse code, etc.).

- **The Receiver of Communication:** Receiver is the person who remains at the receiving end of the communication. He is to receive the encoded intended message of the source of communication, decode it for its proper interpretation and must reach or produce a desired response (feedback) to the source of communication for maintain the proper flow of the chain of communication. In this way receiver like a far end pole is equally important for the flow of the current of communication between him and the communication or sender of the message. The communication can remain operative only if he is interested and possesses required competency to

decode, understand and effectively respond to the communicated message.

- **Response material or Feedback:** The response material or feedback may be defined as the reaction or response signals in the encoded form transmitted back by the receiver of the communicated message after its proper decoding, interpretation and understanding in order to maintain the flow of communication between him and the sender. The effectiveness in the flow of communication is dependent much upon the quality, and effectiveness of the contents of the response. It is through feedback that one may evaluate the outcomes of his communication i.e. what was intended to be communicated has or not been reached the receiver, has there been any gap in the communication process or has there been any difficulty or misgiving in the interpretation of the message. In this way, the quality of communication as a two way process may thus be properly maintained through a proper feedback from the receiver and its subsequent follow-up on the part of the sender.

6.7 PRINCIPLES OF COMMUNICATION

At the time of communicating, it is very important to consider some of the general principles of communication. These principles are the same for all human beings, no matter what ethnicity or culture they may be part of. Following are some important principles which should be kept in mind, during the process of communication:

- **Principle of mastery on language:** Verbal communication is the most widely used form of communication. It uses language to express thoughts and ideas. Mastery of language is vital for effective communication. The sender or source of communication should use the language which is easy for the receiver to understand. In a classroom, the teacher should be fluent in the language which the students understand; only then it will be possible for him to convey the message to students.

- **Principle of motivation:** The level of interest of both the source of communication and the receiver should be interested throughout the process of communication. Lack of motivation, interest and zeal on part of the sender or the receiver may adversely influence the progress of communication.
- **Principle of sharing and interaction:** During communication, it is important to be sensitive to the others and be aware of how the receiver is interpreting the message. The success of communication lies in sharing and mutual interaction between the sender and the receiver.
- **Principle of active listening:** Listening is an important aspect of communication and this role is played by the receiver of the message. To become an effective communicator, it is very important to listen to the other person. If the sender is not a good listener, it would be very difficult to understand what someone is trying to say. A lot of misunderstanding and misinterpretation can occur if there is lack of proper listening.
- **Principle of suitability of communication contents:** The content which is to be communicated should have a definite purpose, cohesiveness and usefulness for the receiver. The sender should be familiarized with the content to be communicated. On the receiver's end, the contents should be suitable enough to be grasped so that he can respond properly.
- **Principle of using appropriate channel:** Selection of the wrong communication channel can cause communication obstacle and inadequate feedback. Effective communication relies on selecting an appropriate communication for sending the message. While selecting the communication medium, one should keep in mind the purpose of the message.
- **Principle of conductive environment:** A conductive environment is a very vital constituent for facilitating effective communication. The communication process should be protected from noise, disturbance, poor pronunciation, improper ventilation, etc., because

in the presence of all these factors, communication may not be successful. Hence, to enhance the effectiveness of communication, a conductive atmosphere is necessary.

- **Principle of competency:** Competency is required at both the sender's and receiver's end in terms of communicating and receiving the desired information. Both of them should possess the communication skills which help the sender in sending the message and the receiver in the receiving the message effectively.
- **Principle of appropriate body language:** Appropriate body language also plays a very important role in the communication process. One of the most influential modes of communication in day-to-day interaction is our body language, which includes eye contact, gestures, body stance and facial expressions. Individuals with improper body language are prone to be misunderstood and do not succeed in communicating their ideas.
- **Principle of appropriate feedback:** Appropriate feedback from receiving end conveys that the message of the sender has been received and interpreted correctly. The feedback can also work in reverse order from the source to the receiver's end. If a teacher gets proper feedback from the students, it will help him understand whether the communication is effective or not.

6.8 BARRIERS OF COMMUNICATION

There are a number of factors (and many of these factors exist in day-today life as well) that can act as barriers to effective communication. Barriers of communication are as stated below -

- **Lack of Planning:** Good communication seldom happens by chance. Too often people start talking and writing without first thinking, planning and stating the purpose of message. Furthermore the personality and attributes of the person who is receiving the message also matters cause no matter how nicely the message has been delivered the receiver should be that intelligent to read it correctly.

- **Ambiguity:** Clearly, language and linguistic ability may act as a barrier to communication. If the message sent is not clear and is ambiguous then it may act as a barrier.
- **Verbalism:** Excessive verbalism can no longer be condoned, particularly in today's world of communication which offers much more effective substitutes from other avenues of expression. Such verbalism is a definitely limiting barrier of effective classroom communication.
- **Anxiety:** One of the major emotional causes of communication barriers is a student's anxiety. If a student is anxious and unsure, they're less likely to speak up in class. This is true even in situations where a student doesn't understand what the teacher is saying and needs clarification. Anxiety stops students from participating in group discussions because they don't want to be made the center of attention, and they're afraid of other people's opinions of them.
- **Language:** Language is the primary way of communication thoughts and ideas. If the teacher and the students don't speak the same language, these can be a major communication barrier. If the teacher speaks English, and the students are mostly English as Second Language students, then there will be communication problems, since the students may not understand everything the teacher says.
- **Expression:** Communication is never exact. The initiator tries to put his ideas into words, and then the recipient has to decode those words to understand the idea. When the teacher or student doesn't have the ability to choose the proper words to describe the ideas they want to convey, this will create a communication barrier in class room.
- **Day dreaming:** A common (though avoidable) barrier to effective communication occurs when the learner day dreams, that is when he turn away from the flow of classroom communication and dwells upon his own privately recalled understanding and experiences, which are more preoccupying than those which are identified with classroom activity. Students are failed to keep their full attention in

the class room, if they think the movie that was seen by them in previous night.

- **Imperceptions:** Students are not be able to understand the teacher's important class lecture if they have any physical problem. Psychological function can do nothing in this case. So students may gather knowledge very superficially in class room thus communication fails.
- **Disinterest:** Disinterest arises among the students due to the lack of available teaching materials, teaching system and efficient teacher in the classroom. To eradicate distance teacher should include some motion pictures, films, modems, specimens, film strips, charts, diagrams, tapes, records, television and many other audio visual materials. Variety in class room procedures and teaching materials usually heightens the interest and enthusiasm with which pupils approach their work.

Others barriers may be as follows:

- Economic factor;
- Mental factor;
- Educational factor;
- Organization and religious factor;
- Political factor;
- Social factor;
- Racial factor, etc.

From the above discussion we may say that communication is the unique process of our social, cultural, political; and economic development. All developmental activities largely depend upon proper communication. Classroom learning also become effective with proper communication between students and teachers. Some barriers affect in classroom communication. Audio-Visual instruction may solve these communication barriers.

6.9 TYPES OF COMMUNICATION

There is nothing in a world that would be achievable without the process of communication. There are different modes of communication, depending on the environment or situation and on the number of people involved. Let us discuss all these one by one:

- **Mode of communication:** A person can communicate with the help of both language and expression. If there is use of language, it is called verbal communication. However, communication that takes place without language, with the help of expression only is known as non-verbal communication.
  - **Verbal communication:** Language is an important factor and base of any verbal communication. Communication which makes use of oral or written form of language is termed as verbal communication. We have different types of languages like regional, national and international, for communication. In a classroom, the teacher mostly communicates verbally and writes words or sentence on the blackboard. Verbal communication with students is through questioning, lecturing, guiding, explaining or demonstrating. In this way, we can conclude that verbal communication combines both written and oral forms, which results in effective communication. for effective verbal communication, the following things should be kept in mind.
  - **Non-verbal communication:** There are many ways used by people to communicate, other than verbal communication. Messages that are conveyed through body language, facial expression or code language, without taking help of verbal or written language are known as non-verbal communication. in some cases (with people who are not able to speak and listen [dumb and deaf], mentally challenged persons or who do not know the language of the sender) use of non-verbal communication becomes a compulsion. This type of

communication very often used along with verbal communication to make it more effective. Non-verbal communication can be of following types.

- **Body language:** Feelings, thoughts or ideas can be conveyed with the help of body language. Various postures and movements of body can convey various message. Different people in different profession makes use of body language and convey the feelings like happiness, fear, anxieties, jealous, love and sympathy. A dancer while performing can convey feelings with the help of various postures. Similarly, a teacher can show love for the students, lawyers can very well use various postures to evoke the answers from their clients and so on.
- **Facial expression:** It is rightly said that face is a mirror for one's emotions. Intentions of a person can be very easily studied by his facial expressions. When a person is angry or happy, it can be clearly observed through the facial expression. These expressions are similar and universal all around the world. for non-verbal communication, these are most suitable and effective.
- **Language of eye:** Language of eyes can be declared as another important form of non-verbal communication. It is very simple and easy to understand the language of eyes. Widening or narrowing of pupils and movement of eyelids convey messages to the receiver.
- **Symbolic code language:** In news bulletin for deaf and dumb on television, special code language is used. This is easily understood by them. Even in our day-to-day activities, we use various symbols or codes to convey messages. Detective use code language to pass on secret information.

- **On the basis of number of people:** Communication can take place between two or more individuals. Hence, based on the number of individuals involved, we can divide communication into following:

- **One-to-one communication:** It occurs between two individuals. A friend talking to a student or talks between a father and a son are some examples of one to one communication. It can be both formal and informal type.
- **Small-group communication:** This type of communication occurs among than two individuals. Communication between families, neighbours and friends are example of this type of communication.
- **Public communication:** This type of communication is mostly formal and involves a number of people. Morning assemblies in schools or preaching at religious places are examples of this type of communication.
- **Organizational communication:** This type of communication occurs within the boundaries of an organization or institution, for instance, communication in hospital, army, or any educational institute.
- **Mass communication:** this type of communication is broad and it involves ways to communicate with masses. It is carried out through different types of mechanical means, appliances and mass media such as television, radio, books, videos, etc. Individuals living in any part of the world can be involved in mass communication.

- **Communication on the basis of environment:** Communication can take place in a variety of situations or environment. Depending upon the environment, we may divide communication into two types:
  - **Formal communication:** When communication takes place in a well-set environment with proper rules and regulations to achieve predetermined objectives, it is called formal communication. In events that require public speaking, mass communication, official communication is used. Here, language is used more precisely and there is a higher focus on grammar.
  - **Informal communication:** When communication is not pre-planned and it is free of rules and regulations with minimum

formalities, it is known as informal communication. In this type of communication, focus on the structure of language and grammar is very less. There is also lesser focus on non-verbal behaviour like attire, way of walking, stance, etc. Any type of communication between a group of friends outside the school or college can be taken as an example of informal communication.

- **Communication on the basis of its direction of flow in an organization:** On the basis of this criteria, there are the following two types of communication:
  - **Upward communication:** In this type of communication, message is initiated by subordinates and is received by superiors. In an organization, people in the top management use this type of communication to be aware of the needs, requirements, problems and complaints of the employees. It also helps them in sound decision-making, based on the information received from employees. This type of communication provides an opportunity to employees to communicate their issues to the top management. Upward communication takes place in meetings, counselling, correspondence, reports etc.
  - **Downward communication:** This type of communication is initiated by people at higher positions in an organization. For the success of an organization, effective downward communication is very important. The communication of management with employees is necessary for organizing, coordinating and directing the operations of an organization. Downward communication flows through speeches, instructions, meetings, telephones, letters, pamphlets, etc.



CHECK YOUR PROGRESS

Q 1: Communication has been derived from the Latin word _____. (Fill in the blank)

Q 2: Define 'Communication'.

.....

Q 3: Write any five principles of communication.

.....

Q 4: Communication is mainly divided into _____ types. (Fill in the blank)

Q 5: Differentiate between 'verbal' and 'non-verbal' communication.

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6.10 PHASES OF TEACHING

Teaching is considered as a social phenomenon. Teaching is an art in which a teacher influences his students and motivates them for learning. Students learn and develop according to the ideals set before them by teachers. Teaching is nothing but an organized set of activities, as a result of which pre-determined objectives are achieved.

Teaching is a complex task, for performing which systematic planning is needed. Teaching is to be considered in terms of a certain number of steps, and the different steps constituting the process are called the phases of teaching. Jackson thinks that if we are to obtain a complete description of the teaching activity, we must consider what the teacher does before and after his regular teaching in the class. Jackson divides the act of teaching into three phases of teaching as shown below

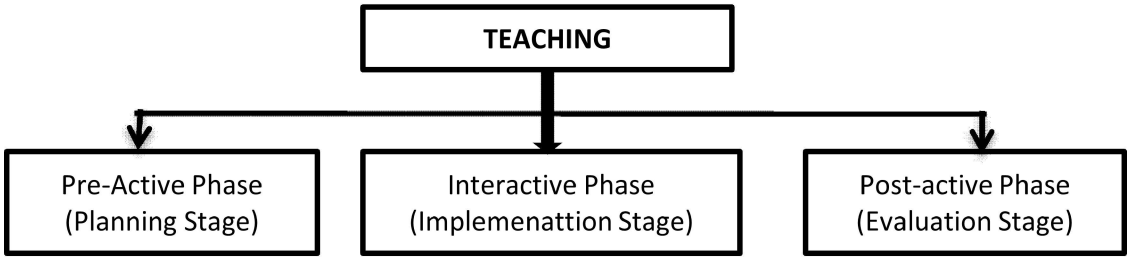


Fig. 6.2.: Phases of Teaching

- **Pre-active stage:** Before actual classroom teaching or what Jackson calls "calm" part of teaching, a teacher has to perform many tasks. These tasks include preparing lesson plans, arranging furniture and equipment within the classroom, papers, studying test reports, reading sections of a textbook and thinking about the aberrant behaviour of a particular student. These activities are crucial to the teacher's performance during regular teaching sessions.

  Operations at the Pre-active Stage: The following operations or sub-stages are involved at the pre-active phase:

  - Forming or fixing up goals.
  - Taking decisions about the content.
  - Managing or sequencing appropriate means and ways of presentation.
  - Deciding about appropriate strategies and tactic of teaching.
  - Developing teaching strategies for the specific subject matter.

- **Interactive Stage:** This is actual classroom teaching. At this stage, the teacher uses a number of strategies for achieving the goals already set. In the interactive setting, the behaviour of the teacher is more or less spontaneous. Research suggests that things happen quickly during the teaching session. For example, the elementary teacher may change the focus of his concern as many as 1,000 times daily. Amid all this hustle and bustle, the teacher often has little time to think.

While many teachers try to devote some time alone with individual students, the teacher-student dialogue is usually public rather than private. When a teacher is alone with a student, he is not faced with the

problem of control and management that frequently adsorbs a major portion of his energies in a group setting. There is a greater sense of physical and psychological intimacy between the teacher and the student during individual sessions than when the teacher is responding to the class as a group.

Operations at the interactive stage are the following:

- Selection of stimuli.
- Presentation of the stimuli.
- Feedback of reinforcement.
- Development of strategies of teaching.

- **Post-active phase:** The post-active phase of teaching is the simplest of all phases. It is nothing but the evaluation of operations involved in teaching. This phase comprises attempts made by teacher for determining the effectiveness of their teaching, and effectiveness of lessons taught by them. Practically, the data that is collected and examined is a combination of observation of classroom activities and outcome of students' written work. This phase involves the following operations:
  - **Defining the exact dimensions of teachings:** The teacher compares the expected and the actual behaviour changes in course of his teaching, at the end of his session. The extent or quality of accomplishment of stipulated objectives helps the teacher to understand the effectiveness of teaching. It also helps in taking decisions about future improvement. Methods and strategies used by teacher are said to be effective only if the teaching objectives have been achieved.
  - **Selecting appropriate testing devices and techniques:** The teacher chooses appropriate testing techniques and evaluation tools to measure the various dimensions of behaviour. Thus, he notices the changes brought about by his teaching. The tests may be of many types, e.g., paper-pencil test, standardized tests, objective type tests, teacher-made tests, etc. It helps the teacher

to teach things better in future and also the students to learn things better.

- **Changing strategies in terms of evidences gathered:** On the basis of assessment, a teacher comes to know about his performance. If the objectives have not been achieved, the teacher may find out the factors responsible for failure and also find the remedial techniques to be applied so that the objectives can be achieved.



CHECK YOUR PROGRESS

Q 6: What is teaching?

.....

Q 7: Write three characteristics of teaching.

.....

Q 8: Write the phases of teaching.

.....

Q 9: Name the activities involved in the interactive process of teaching.

.....

6.11 MEANING OF TEACHING MACHINES

Teaching machines are regarded as one of the most sophisticated and developed teaching-learning aids among the category designated as hardwares. In many of the teaching-learning situations, it has the wonderful capacity of replacing the teacher in all types of teaching tasks. The credit for the invention for this hardware goes to Sydney L. Pressy. In 1927, he invented a teaching device for the purpose of self-learning much similar to many of the electronic equipments available today in the markets in which one has to respond to the multiple questions by selecting an alternative. The green light appears on the board when he provides right answer i.e.

the capital of Haryana is Chandigarh and not otherwise.

These electronic equipments represent the simplest form of a teaching machine. However, there has been a tremendous progress in the quality and working of the teaching machines especially after the invention of computer technology. Today it is beyond our imagination, the services that can be rendered by the modern sophisticated teaching machines available in the schools of the progressive countries.

6.11.1 Characterstics of Teaching Machine

The characteristics of teaching machine are as follows:

- A teaching machine not only presents information to the students but also elicit information from them.
- It keeps record of student's response. This estimates how much they have learnt.
- Teaching machine informs the people about their progress by showing correct and incorrect responses. This restricts cheating.
- Teaching machine helps in solving the problem of teaching.
- Teaching machine controls the behaviour of students.

6.11.2 Educational Advantages of Teaching Machine

The educational advantages drawn with the help of teaching machines can be summarised as below:

- Teaching machines may work for meeting out the increasing demand of more teachers in view of the growing number of students and schools. Moreover, t can work towards providing appropriate teachers for the particular subjects where there is a death of such subject teachers.
- Teaching machines may help the teachers by sharing their responsibilities regarding teaching and instructional work and thus leave them free for other type of activities helpful in the personality development of the children.

- Teaching machines may play an effective role for providing guidance and counselling to the students especially in the individualised way.
- They can provide best-individualised instructions and auto-learning to each and every learner irrespective of their varying needs and abilities.
- On account of their mechanistic and never tiring nature they can work day and night for providing instructions for a number of learners without any sight of mental or physical fatigue. They can answer a number of questions and queries without showing any angry or reaction of any kind. They can be used at the will of the learner and every learner has full opportunity to learn from them according to his taste, ability and pace.
- They can surpass a good tutor in their capacity of providing feedback, reinforcement, exercise and practice work for the individual learner. The work of continuous evaluation become quite feasible with the help of teaching machines and in this way they can provide a better substitute in them for an effective tutor and experienced teacher.

6.11.3 Demerits or Limitations of Teaching Machine

Teaching machines are often criticised on account of their following demerits and limitations.

- Teaching machines prove quite costly in terms of their purchase and maintenance.
- It is very difficult to get the proper technicians for carrying out any repair work of these machines. In the absence of such persons, the machines may remain out of use causing serious harm to instructional work.
- There is every possibility of causality to the young learner while handling these machines for self-learning.
- The learner may go astray on the path of self-learning and waste

their energy in the useless activities. There is also a danger of making the students careless about their progress and pace as they may think that they may learn anytime they wish as the machine is there to help them.

- The teacher are haunted with fear of being replaced with the machines.
- The teaching machines are bound to make the teaching-learning environment quite mechanical, right, dull, lifeless and boring on account of their mechanical nature and heartless working. There is no possibility of warmth, physical contact and union of the minds as otherwise available in the usual teaching-learning situation with the presence of human teacher.

The close analysis of the above cited merits and demerits of the teaching machines may reveal that they have a quite big roles for proving them a good friend of teachers and as well as learners. The defects and limitations pointed out not so serious. Actually, these arise on account of their mishandling and misconceptions. There is no need to take them as an end or substitute of the teachers. They are to be treated just as an aid to the teaching-learning process and every teacher should try to learn their proper use and maintenance for helping them in exercising their various responsibilities as a teacher.



CHECK YOUR PROGRESS

Q 10: Who invented the teaching machines?

.....

Q 11: What are teaching machines?

.....

Q 12: Write three characteristics of teaching machines.

.....

Q 13: Write three advantages of teaching machines.

.....

Q 14: Write three disadvantages of teaching machines

.....



ACTIVITY 6.1

1. Make a list of different types of communication that take place in the teaching- learning process.
2. Go to some government aided school and private aided schools and make a comparison of the phases of teaching by asking the students as well as the teachers.



6.12 LET US SUM UP

- Communication plays an effective and essential role for running the show of any Formal or informal teaching-learning process. In many of its way, teaching is communicating and in this sense, good teachers are always good communicators. It is also equally true for the learners
- Effective communicators are those who are able to select the most appropriate symbols or messages for specific person and who are able to interpret the intended message symbols of other speakers.
- The presence of five main components or elements in general in any process of communication namely: - (i). The source of communication or sender of the message, (ii). Contents of communication or message, (iii). Media or channel of communication, (iv). The Receiver of the communication and (v). Response material or Feedback.
- A teacher has to perform various functions before, during and after the class. These functions are known as 'phases of teaching'. Thus, teaching is divided into three main phases, i.e., (i) pre-active, (ii). interactive and (iii) post-active phases of teaching.
- Teaching machines are regarded as one of the most sophisticated and developed teaching-learning aids among the category

designated as hardwares. In many of the teaching-learning situations, it has the wonderful capacity of replacing the teacher in all types of teaching tasks.

- Teaching machines not only help students but also save energy and time of the teacher.

6.13 FURTHER READING

1) Dr. Mangal, S.K. 2001.Foundations of Educational Technology. Ludhiana: tendon Publications.
2) Aggarwal, J.C. 2009. Essentials of Educational Technology. New Delhi: Vikas Publishing House.
3) Sampath, K.A. Panneerselvam, S. Santhanam. 2007. Introduction to Educational Technology. New Delhi: Sterling Publishers.
4) Sharma, K.K. 2007. Educational Technology. Delhi: Mahavir and Sons Publishers and Distributors.

6.14 ANSWER TO CHECK YOUR PROGRESS

Ans to Q No 1: Communis

Ans to Q No 2: According to Newman and Summer, "Communication is an exchange of facts, ideas, opinions or emotions between two or more persons."

Ans to Q No 3: Five common principles of communication are: (i). Principle of mastery on language, (ii). Principle of motivation, (iii). Principle of active listening, (iv). Principle of multiple channel and (v) Principle of feedback.

Ans to Q No 4: Two

Ans to Q No 5: Verbal communication make use of oral or written form of language, whereas, non-verbal communication makes use of body-language, facial expression, etc.

Ans to Q No 6: Teaching is considered as a social phenomenon. Teaching is an art in which a teacher influences his students and motivates them for learning. Students learn and develop according to the ideals set before

them by teachers. Teaching is nothing but an organized set of activities, as a result of which pre-determined objectives are achieved.

Ans to Q No 7: Three characteristics of teaching are as follows:

- Teaching is an interactive process between a teacher and a learner. It is not a one-sided affair as both the learner and the teacher have to be fully active during this process.
- Teaching is not an independent activity as it cannot happen in vacuum. It takes place in some social set-up where the teacher aims at modifying the behaviour of an individual or group.
- Teaching is both formal and informal. Both the ways, it help in achieving desired goals.

Ans to Q No 8: The phases of teaching are: (i). Pre-active Phase, (ii). Inter-active Phase, and (iii). Post-active Phase.

Ans to Q No 9: The interactive phase involves following activities:
(i). Perception, (ii). Diagnosis of the learners, (iii). Reaction or achievement.

Ans to Q No 10: Sydney L. Pressy invented teaching machines.

Ans to Q No 11: 'A teaching machine' is a mechanical, electrical or automatic device designed to teach students by presenting information in a planned sequence, with questions based on the given information and providing immediate response to his answer.

Ans to Q No 12: Three characteristics of teaching machines are as follows:

- A teaching machine not only presents information to the students but also elicit information from them.
- It keeps record of student's response. This estimates how much they have learnt.
- Teaching machine informs the people about their progress by showing correct and incorrect responses. This restricts cheating.

Ans to Q No 13: Three advantages of teaching machines are:

- Teaching machines may work for meeting out the increasing demand of more teachers in view of the growing number of students and schools. Moreover, t can work towards providing appropriate teachers for the particular subjects where there is a death of such subject teachers.

- Teaching machines may help the teachers by sharing their responsibilities regarding teaching and instructional work and thus leave them free for other type of activities helpful in the personality development of the children.
- Teaching machines may play an effective role for providing guidance and counselling to the students especially in the individualised way.

Ans to Q No 14: Three disadvantages of teaching machines are:

- Teaching machines prove quite costly in terms of their purchase and maintenance.
- It is very difficult to get the proper technicians for carrying out any repair work of these machines. In the absence of such persons, the machines may remain out of use causing serious harm to instructional work.
- There is every possibility of causality to the young learner while handling these machines for self-learning.



6.15 MODEL QUESTIONS

Short Questions (Answer each question in around 150 words)

Q 1: What is meant by communication?

Q 2: What are the basic characterstics of communication process?

Q 3: Mention some principles of communication.

Q 4: What is meant by internal and external barriers of communication process?

Q 5: What do you mean by verbal and non-verbal communication?

Q 6: Write a short note on upward and downward communication?

Q 7: What is teaching machine?

Q 8: What are the educational advantage of teaching machine?

Long Questions. (Answer each question in around 300-500 words)

Q 1: Elaborate the process of communication.

Q 2: Describe the different types of communication with examples.

Q 3: Discuss about the phases of teaching.

Q 4: Define teaching machines. Write the characteristics of teaching machines.

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