UNIT 14 : DISTANCE EDUCATION AND TECHNOLOGY

UNIT STRUCTURE

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14.1 LEARNING OBJECTIVES

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

- Know the meaning and definitions of distance education;
- Discuss the characteristics of distance education;
- Enumerate the objectives of distance education;
- Explain the advantages and disadvantages of distance education;
- Know the meaning and definitions of educational technology;
- Discuss the characteristics of educational technology;
- Enumerate the objectives of educational technology.

- Identify the applications of educational technology.
- Describe the role of educational technology in the field of distance education.

14.2 INTRODUCTION

Educational technology plays an important role in distance education system. By adapting new communication educational technologies in distance educational programmes their quality could be ensured. Instructions conducted through the use of technologies which significantly or completely eliminate the traditional face to face communication between teacher and students lead to distance education. Now a days, media such as computer, artificial satellites, digital libraries, telephones, radio and television broadcasting and other technologies are presenting their potential for the purpose. Audio, video and print materials provide the base while internet is becoming cheap, fast and effective medium. Immense resources are already available on the web. In addition, technology is rushing to bring in revolution in the field of distance education. So in future, positive changes can be apprehended.

14.3 MEANING OF DISTANCE EDUCATION

"Distance learning" refers to the kind of education that is being given, when the trainer and the trainees are not able to be present during the presentation of a lesson at the same place or time. The term "distance education" or "distance learning" is used today to describe the education given to students by conveying educational material from a distance.

Distance education is a form of education in which the participants in educational process - teacher and learners are physically separated and communicated by different means and at different times. In other words, distance education is a way of education remotely without being in regular face-to-face contact with a teacher in the classroom. Distance education is a method of study where teachers and students do not meet in a classroom but use the internet, e-mail, mail, etc., to have classes.

Distance learning, sometimes called e-learning, is a formalized teaching and learning system specifically designed to be carried out remotely by using electronic communication. Because distance learning is less expensive to support and is not constrained by geographic considerations, it offers opportunities in situations where traditional education has difficulty operating. Students with scheduling or distance problems can benefit, as can employees, because distance education can be more flexible in terms of time and can be delivered virtually anywhere.

Popular distance learning technologies include -

- Voice-centered technology, such as CD or MP3 recordings or Webcasts.
- Video technology, such as instructional videos, DVDs, and interactive videoconferencing.
- Computer-centered technology delivered over the Internet or corporate intranet.

14.4 DEFINITIONS OF DISTANCE EDUCATION

Some definitions of distance education are as follows -

- According to Lionarakis (2005), "Distance learning is the education that teaches and enables the student to learn on his own and to operate autonomously in a heuristic self-learning path."
- Wagner (1993) defines distance learning as, the 'Transfer of educational interaction or educational programming to geographically remote individuals and groups."
- Shale and Garrison (1990) argued that the definitions of distance learning focus mainly on the distance between teacher and students than in the educational process, which limits how we see distance education as well as the potential future trends.

From the above definitions, it can be concluded that, Distance Education (DE) is an umbrella term which describes all the teaching learning arrangements in which the learner and the teacher are separated by space and time. In fact it is a mode of delivering education

and instruction to learners who are not physically present in a traditional setting of a classroom. Transaction of the curriculum is effected by means of specially prepared materials (self-study (learning) materials) which are delivered to the learners at their doorstep through various media such as print, television, radio, satellite, audio/video tapes, CD-ROMs, Internet and World Wide Web etc. Also a technological medium replaces the inter-personal communication of conventional classroom based education that takes place between the teacher and the learners. Communication between the institution, teacher and learners is mainly through electronic media (telephone, interactive radio counselling, teleconferencing, videoconferencing, chat sessions, email, website etc.) and also through postal correspondence and limited face to face contact sessions held at Study Centers that are set up by the DE institutions as close to the learners' homes as possible.

14.5 CHARACTERISTICS OF DISTANCE EDUCATION

Nature and characteristics of distance education can be outlined below -

- Separation of teacher and learners in space and time.
- Use of different media to realize the interaction among teacher, learners and educational content.
- The provision of two-way communication between teacher and learners.
- Control of the learning process by the learners rather than the teacher.
- Influence of an educational organization.
- Need of students evaluation.

14.6 OBJECTIVES OF DISTANCE EDUCATION

The objectives of distance education are as follows -

- **To provide an effective alternative path to wider opportunities in education and especially in higher education:** There are

different categories of potential learners. There are some who never been able to enter into any institution of higher learning. There are some who just need additional knowledge in a particular discipline. There are still others who are in need of refresher courses to cope with the latest development in their perfection. For all of those there is need for distance learning or correspondence education.

- **To provide an efficient and less expensive education:** Provision of universal schooling is beyond the means of our country. Increasing population and limited resources is the predicament of our educational planners. It is difficult to divert huge sums of money in a developing economy to match the required level of expansion for traditional schooling. Distance education is the only practical alternative.
- **To provide education facilities to all qualified and willing persons:** The objective of correspondence courses is to provide education facilities to all qualified and willing persons who are unable to join regular university and other courses due to various reasons. For them, there is an incessant search for an alternative system and that system is distance education.
- **To provide opportunities of academic pursuits to educated citizens willing to improve their standard of knowledge:** There are many learners, both young and adults, who cannot afford to join the face-to-face system of education due to personal and professional responsibilities. For such type of persons, some provisions have to be made through distance education. Hence, the objective is to provide opportunities to improve the standard of knowledge and learning through continuing education while in employment.
- **To provide education facilities to those individuals who look upon education as a life-long activity:** Distance education facilities are needed for those individuals who look upon education as a life-long activity or to acquire knowledge in a new area. Because lifelong education is emphasized for all stages of life. In this context,

the report of the National Policy on Education, 1986 is worth-mentioning here.

The NPE-1986 says, "Life-long education is a cherished goal of the educational process. This presupposes universal literacy. Opportunities will be provided to the youth, housewives, agricultural and industrial workers and professionals to continue the education of their choice, at the pace suited to them. The future thrust will be in the direction of open and distance learning. "

The distance learning system must be well-supported with instructional materials, and suitable radio and television programmes in different areas of study. This correspondence education or distance learning is becoming popular and being accepted as an alternative and economical approach to our formal education system.

14.7 ADVANTAGES OF DISTANCE EDUCATION

Distance education has some fundamental advantages -

- **Flexibility and independence:** Distance education is education at a convenient place and time and is self-paced learning.
- **Wide learner audience:** Numerous learners take part in distance learning courses as compared to traditional education.
- **Accessibility:** Distance education overcomes some limitations for certain groups of people - older people and people with disabilities; people who live in remote places; people who work and cannot disturb their work. Distance education helps them combine learning with their jobs. People from different social, cultural and economical groups are integrated.
- **Life-long learning:** People can study throughout their whole lives in different fields of knowledge.
- **Economical effectiveness:** Distance education cuts down expenses for learners and for the institution which organizes this form of education.

14.8 DISADVANTAGES OF DISTANCE EDUCATION

Distance education has some disadvantages -

- **Isolation:** Learners in distance education courses are separated from the teacher and sometimes feel uncomfortable because there is no visual interaction with other participants. Learners sometimes feel lack of support and reassurance in moments when the learning content is more difficult and they have problems with it.
- **Loss of motivation and self-discipline:** Motivation is a basic agent in distance education. Loss of motivation will bring negative results. Learners should be strongly motivated in order to finish their education. Self-discipline is linked to motivation. In most of the cases the teacher controls a final due date for individual tasks and projects, but learners are responsible for its implementation. Loss of motivation and self-discipline can be noted in certain cases.
- **Short period of courses:** Distance education courses are shorter than traditional ones. This requires assimilation of the learning content in a shorter period of time and could be difficult for some learners.
- **High costs:** At the beginning of the development of distance education course expenses are considerable - not only financial, but also time. Teachers spend a lot of time to prepare and structure the whole course - time for examination of the audience, review of existing learning materials and already created courses, time for preparation of learning instructions.

14.9 MEANING OF EDUCATIONAL TECHNOLOGY

Educational technology is the development, application and evaluation of systems, techniques and aids to improve the process of human learning. In almost all the important activities engaged in the name of teaching, training or instructions the possibility of using educational technology has been explored and is being explored, even today. Educational

technology is a matter of making education more meaningful or a question of improving its quality or even the issue of making it accessible to more children. One thing that always prominently matters is the teacher, the quality of his preparation and his maintenance as a professional. His/her performance is the most crucial input in the field of education. So, their training with special linkage with technology is one of the most essential needs. The use of educational technology is an innovative practice, which needs to be adopted by every teacher.

The concept of educational technology is used in two ways - educational technology means the use of mass media and audio-visual aids in education or technology in education. Educational technology means utilization of all available resources in a system in order to optimize teaching learning process or technology of education.

The utility of technologies like audio-visual aids, equipment, machines etc. such a Chalkboard, Over Head Projector (OHP), TV, and Computer in education called the "Technology in Education". Here more importance is given to the media used for carrying a message, whereas the other approach to Educational Technology is "Technology of Education". This approach characterizes the methodology appropriate to learners' needs, learning objectives, the process of learning and teaching as well as availability of resources. Technology of Education includes Technology in Education.

According to the British Journal of Educational Technology published by the National Centre for Educational Technology -

"Educational technology basically means all the intellectual and operational efforts made during recent years to regroup, arrange and systematize the application of scientific methods to the organization of new sets of equipment and material so as to optimize learning process".

According to Technical Working Group for Educational Technology in Asia under APEID - 1995 defined educational technology as:

"Educational technology is a separate field dealing with the theory of education .with development and application of the educational resources

which implies following principle -

- Clarifies educational objectives.
- Placing content of elements in a logical order.
- Specifies the process of teaching learning.
- Acquires the knowledge through development of models of teaching.
- Adjoining the teaching learning process with feedback.
- Selection, evaluation and optimization of media.

14.10 DEFINITIONS OF EDUCATIONAL TECHNOLOGY

Some definitions of educational technology are as follows -

- Educational Technology According to G. M. Leith, "Educational technology is a systematic application of scientific knowledge about teaching learning conditions of learning to improve the efficiency of teaching and training. In the absence of scientifically established principles, educational technology implements techniques of empirical testing to improve learning situations."
- Educational Technology According to B. C. Mathis, "Educational technology refers to the development of a set of systematic methods, practical knowledge for designing, operating and testing schools." B. C. Mathis has emphasized the development of teaching methods and skills for testing the performance.
- Educational Technology Robert Cox has defined the term educational technology in the following manner, "Educational technology is an application of scientific process to man's learning conditions to what has come recently to be called educational or instructional technology."
- Educational Technology E. E. Haddan defined educational technology as "Educational technology is that branch of educational theory and practice which is concerned primarily with the design and use of message which control the learning process."
- Educational Technology S. S. Kulkarni has defined the term educational technology in the following manner, "Educational

technology may be defined as the application of the laws as well as recent discoveries of science and technology to the process of education."

- According to K. Mitra, "Educational technology can be conceived as a science of techniques and methods by which educational goal can be realized."

14.11 CHARACTERISTICS OF EDUCATIONAL TECHNOLOGY

Educational technology in its greater and wider sense includes the entire process of setting of objectives, it deals with the systematic application of the resources of scientific knowledge to the process that each individual has to pass through in order to acquire and use knowledge. The basic characteristics of educational technology are as follows -

- **Based on Science and Technology:** Educational technology is based on science and technology, so it is influenced by science and technical advancement.
- **Application of Scientific Principles:** Educational technology studies the effect of science and technology upon education. In other words, science and technology are used under educational technology. Hence, it is the practical aspect of science.
- **Continuous and Dynamic Method:** Educational technology is a continuous, dynamic, progressive and effect-producing method.
- **Emphasizes on Teaching-Learning Methods and Techniques:** It lays stress on the development of methods and techniques for effective teaching learning. It also stresses the organization of learning situations for effective realization of the goals of education.
- **Comprehensive Term:** It is a very comprehensive term and is not to be viewed in terms of its parts of processes. New conceptions are possible only due to educational technology such as programmed learning, instructional technology, teaching technology, micro-teaching, simulated teaching, interaction analysis, video-tape,

tape-recorder, projector and computer, etc.

- **System Approach:** Audio-visual aids cannot be termed as educational technology. Educational technology accepts schools as a system. In this system, the school-building, furniture and teachers act as input. While various methods, techniques, strategies and the teaching and examination act with the help of audio-visual aids.

14.12 OBJECTIVES OF EDUCATIONAL TECHNOLOGY

Objectives of Educational Technology are as follows -

- To determine the goals and formulate the objectives in behavioral terms.
- To analyze the characteristics of learner.
- To organize the content in logical or psychological sequence.
- To mediate between content and resources of presentation.
- To provide the feedback among other components for the modification of learners.
- To evaluate the learners performance in terms of achieving educational objectives.

14.13 APPLICATIONS OF EDUCATIONAL TECHNOLOGY

The applications/scope of educational technology is in following areas:

- Mass education
- Historical information
- Costly and hazardous experiments
- Gaming and simulation
- Distance education and many more.

Educational technology is used to raise the efficiency of education. But with the passage of time, the system of education is facing new

problem to be tackled. So, the hardware and software of educational technology are ever expanding. Following are some of the applications of educational technology that are worth noting.

- **Mass education:** There has been explosion of population and knowledge. There is, therefore, a need to educate the masses. So, educational technology has a tremendous application to educate a large section of people and to impart a large amount of knowledge in a limited span of time. In this regard, the mass media viz., TV, radio, newspaper and other modern technologies like computers and information technology (E-mail, internet, etc.) has a lot of scope.
- **Historical information:** Any branch of knowledge that we deal which has a historical base. Such information is of tremendous importance for the students to understand any branch of knowledge in its totality. Such incidents when occur can be recorded with the help of audio-video cassette or documented in the form of a written or printed material. Such documents become the source of information for learners to learn. The main advantage of such documents is that we cannot create or repeat the history once more howsoever we try hard and place it before the learners.
- **Costly and hazardous experiments:** In many fields of science and technology there are some experiments having great implications for effective learning which are not advisable for the teacher to conduct in the classroom because of cost and health hazards involved. Such experiments, once conducted carefully in the laboratory or elsewhere can be recorded with the help of new electronic technology and be used by teachers and students for effective learning.
- **Gaming and simulation:** If historical events which are either costly or hazardous which cannot be conducted, then educational technology can rescue us by doing the same through simulation. Computer technology in this regard plays a main role. This can provide a life like picture of phenomena in three dimensions. It can also show the operation of different parts of a phenomenon and the

consequences. The other possibility is games. Children can learn, through play, many concepts that just cannot be taught in the formal set of the classroom. The gaming and simulation has a great scope in the training of military personnel and in the field of aviation.

- **Distance education:** Educational technology has a great scope in distance education and open school programme. Today there is a great need for personnel training and education on regular basis for updating oneself in the field of work. In this regard, distance education programmes, a relatively less formal process of education, have acquired new status. Educational technology with its innovative practices can educate the learners who cannot come to the classroom setup for their education. In this regard programmed learning materials, modules, contact programme and counseling are some innovations which can help distance learners.

Applications of educational technology can also be outlined as follows -

- Educational technology improves the teaching-learning process and makes it more effective and process oriented as well.
- Electronic and mechanical gadget which a common man possesses can be used for educational requirements.
- Educational technology has not only maintained the standard of education but also improved the ways of teaching by giving teaching aids and programmed instructional material etc.
- Television, radio, V.C.R. and computers can enrich as well as effect very much the education. Television, radio, tape-recorder and programmed instruction can also do wonders in the field of distance and correspondence education.
- Mechanism of feedback devices for modification of teaching-learning behaviour can produce effective teachers in training schools.
- New innovation of system analysis in the field of educational technology can help in solving educational administrative problems.
- Structure as well as nature of teaching can be developed and enriched with the help of educational technology. It innovates new teaching models through which we can achieve the objectives of

education.

- Scientific foundation of education which is the main force of development of the theories of teaching and instruction is providing by educational technology.
- Educational technology provides practice and strategies for reducing individual differences or strategies and practices which help teachers to teach according to individual differences of the learners.



CHECK YOUR PROGRESS

Q 1: What do you mean by distance education?

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Q 2: Write one definition of distance education.

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Q 3: Write one characteristic of distance education.

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Q 4: Write one objective of distance education.

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Q 5: Write one advantage of distance education.

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Q 6: Write one disadvantage of distance education.

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Q 7: What is educational technology?

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Q 8: Write one definition of educational technology.

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Q 9: Write one characteristic of educational technology.

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Q 10: Write one objective of educational technology

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Q 11: Write one important application of educational technology.

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Q 12: What is WBE?

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Q 13: Mention two technological means used in distance education.

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14.14 ROLE OF EDUCATIONAL TECHNOLOGY IN THE FIELD OF DISTANCE EDUCATION

The development of distance education is related to the development of new information and communication technologies. Some of the existing technologies are an addition to traditional education, while others can substitute it entirely. Some technologies do not provide interaction between learners, others do in various forms. Another point of view is that some technologies emphasize synchronous education - learning and interaction in real time, others - asynchronous education - self-pace learning. The various technologies used in distance learning can be divided into four categories: print, audio, video and computer. However, many of the technologies overlap into more than one category.

- **Print Technologies:** In the opening stages of distance education correspondence by mail was the main delivery method to learners. The print materials included books, textbooks, and manuals. The advantages of the print materials are related to the opportunity for flexibility to learn in convenient time and place for learners who can learn own pace. Most learners are very comfortable using print materials, which are easy to use. The disadvantages result from slow speed of delivery of materials, and the lack of communication and feedback between the participants in the educational process. The print materials are static and they do not use multimedia objects.
- **Audio Technologies:** This group includes audio cassettes, radio, telephone, and audio conference. With audio materials we can demonstrate different ways to learn specific skills by learners. Some of the audio materials provide two-way connection and this increases interaction between the participants in the education process. Most of the audio technologies are relatively inexpensive. They are easily accessible and easy to use. The main disadvantage of audio technologies is that abstract and more complicated concepts are difficult to understand without video materials and visual contact with the teacher. On the other hand, audio conferences require

synchronization between the teacher and learners and sometimes this is inconvenient.

- **Video Technologies:** This group contains video cassettes, satellite and cable programs, and video conference. Video materials allow audio and video communications which make distance education similar to traditional education. Video technologies enable face-to-face interaction between teacher and learners and among learners. Video technologies combine images, digital and analog information. They are expensive and require a great deal of planning, preparation and must be scheduled.
- **Computer Technologies:** The use of computer technologies in education gives an opportunity for computer data storage of learning materials and accessibility around the world. Computer materials can contain text, graphics, audio, and video. Computer technologies allow high level of interactivity and immediate feedback.

In conclusion we could say that there are many technologies for delivering of learning content. Technology is an important factor in achieving effective education. The determining agents when we choose the technology to implement distance education are the goals, the specifics of education and the intended educational group. In many cases combined use of different technologies leads to increased effectiveness of education. The disadvantages of one technology can be overcome by another. The advantages of certain technology can be strengthened by the use of an additional technology.

Web-Based Education

- **Distance education via Internet:** The use of new computer and communication technologies and the wide-spread use of the internet in every aspect of our life reflect upon education and leads to considerable changes in the means and methods of education. Each of the stages of learning - the preparation of learning materials, the delivery to learners, and the process of knowledge evaluation and control are based on these new technologies. Distance education via internet is becoming widely used and important.

Web-based education (WBE) encompasses all aspects and processes of education that use World Wide Web as a communication medium and supporting technology. There are many other terms for WBE; some of them are online education, virtual education, internet-based education, and education via computer-mediated communication.

Distance education via the internet is a form of a distance education which uses various internet services - email, file transfer, WWW. A new stage in the development of distance education is Web-based education. It is used not only in educational institutions, but also in administrative and business organizations.

- **Nature of Web-based education:** Web-based education uses WWW as a virtual environment to present learning materials in order to implement the education process. This environment includes all educational processes - from lectures, assignments, and seminars to learners' evaluation. The interaction between the teacher and learners could be asynchronous (email, bulletin boards, file transfer) or synchronous, in real time (chats, discussion forums, audio and video conference). The specific features of Web-technology assume quick realization of all learning activities. Web-based education could be an addition to traditional education or it could substitute it.

Advantages of Web-based education

Web-based education has all the advantages of distance education, but due to the use contemporary communication technologies it presents new considerable opportunities -

- **Global accessibility:** WWW is a tremendous depository of information and provides users vast resources. There is an enormous amount of learning materials in various fields of knowledge and they are accessible from all over the world.
- **Actual and dynamic changing learning content:** Learning content is dynamic and the teacher can renew it continuously. The process of actualization of the learning materials is easy and quick. The computer materials are reusable. Most of them can be used repeatedly in different distance education courses.

- **Media objects:** Web-based education provides interactive means to present media object - documents, video and audio materials. Media objects can be built in learning content by information technologies.
- **Searching of learning content:** The main characteristic of WWW is navigation through hyperlinks. The students navigate from one learning resource to another. They can search the education content. This allows distance education to spread out of the boundaries of the particular course.
- **Wide range of activities and assignments:** Web-based education includes various activities and assignments which develop different students' skills. The circle of education is closed by the existing test and task systems. These systems increase the control and self-control upon the students' knowledge.
- **Actual feedback:** The teachers receive actual information about the students` level of assimilation of learning content and can emphasize on complicated elements.
- **Good communication between participants:** There are means for communication between participants. The teachers help students in solving problems.
- **Multiplatform technology:** Web-based education is independent from operating system. Interfaces for the Web exist on all platforms. Students need only a web-browser to use WWW. They do not need preliminarily education about how to use the materials in a course, because the interface is graphical and the environment is user-friendly.

Disadvantages of Web-based education

The disadvantages of web - based education are as follows -

- **Security of information:** One of the main disadvantages of Web-based education is the security of information in Web space and reliability of the systems for distance education. The efforts of the creators of these systems are aimed at their protection from illegal access.

- **System failures and connection speed:** Big problems are the systems' failures although most systems for distance education have archive and backup copies. The main environment for delivering information to students is WWW. This requires fast-speed connection. In cases of synchronous communication slow-speed connection can disturb normal learning process.
- **Waste of time:** The development of the Web-based courses is connected with waste of time. At the beginning expenses are significant but further support is much simple.
- **An authenticity of information:** There are so many resources in Web. The main problem is related to the authenticity of information. The searching of the learning content in Web finds many results and many of them are not qualitative enough.
- **Copyrights:** A much debated question is the problem about copyrights of the electronic materials. Unfortunately, synonymous decision is not made.
- **Difficulties of implementation of some pedagogical approaches:** The internet gives large opportunities but some pedagogical methods of approach cannot be carried on in this environment. The specific disciplines might exclude application of computers and virtual medium for their implementation.

Technological means used in distance learning

Computer-based Technology using -

- Satellite connections,
- Electronic boards (bulletin board system),
- Closed circuit television,
- Phone,
- Fax,
- Mobile phones,
- E-mail,
- Internet,
- Video - conference,

- Chat, etc.

Approaches used in distance learning

- An important element for students in online classes is the combination of self-regulatory and cooperative learning.
- Students have the opportunity to see the work of other learners at a time of their choice and compare their ideas with those of other classmates.
- Create groups with common questions and concerns.
- In the online environment, pupils are trained to work together with others in the same cognitive field.

Distance education means education that uses one or more of the following technologies

- To deliver instruction to students who are separated from the instructor; and
- To support regular and substantive interaction between the students and the instructor, synchronously or asynchronously.

The technologies used may include -

- The internet;
- One way and two way transmissions through open broadcast, closed circuit, cable, broadband lines, fiber optics, satellite, or wireless communications devices;
- Audioconferencing;
- Videocassettes, DVDs and CD-ROMs.

Distance education becomes more and more prevalent in contemporary society. It is an integral part of education regardless of its form and technologies used. In the center of the intention of the teachers are the necessities of the students and their specific features. Many various approaches for presenting the learning content and technologies for delivering it to students exist. They are subsidiary means for education and can increase its effectiveness. Distance education courses are effective when they are carefully planned in consideration with students' needs and profile. The learning content should be designed to be useful to them. The appropriate technologies for implementation

of distance education courses are selected after that. The teachers' efforts should be turned to overcoming the existing risk of shifting the emphasis from the essence of the learning content to the technologies for its presentation and delivering.



ACTIVITY 14.1

Write from your own words -

1. Make a difference between distance education and traditional education system.
2. How does Web-based education work on a day-to-day basis?



14.15 LET US SUM UP

- "Distance learning" refers to the kind of education that is being given, when the trainer and the trainees are not able to be present during the presentation of a lesson at the same place or time. The term "distance education" or "distance learning" is used today to describe the education given to students by conveying educational material from a distance.
- Nature and characteristics of distance education - separation of teacher and learners in space and time, use of different media to realize the interaction among teacher, learners and educational content, two-way communication between teacher and learners, control of the learning process by the learners rather than the teacher, influence of an educational organization, need of students evaluation.
- The objectives of distance education are - to provide an effective alternative path to wider opportunities in education and especially in higher education, to provide an efficient and less expensive education, to provide education facilities to all qualified and willing persons, to provide opportunities of academic pursuits to educated citizens willing to improve their standard of knowledge, to provide education facilities to those individuals who look upon education as a life-long activity
- Distance education has some fundamental advantages - flexibility

and independence, wide learner audience, accessibility, life-long learning, economical effectiveness.

- Distance education has some disadvantages - isolation, loss of motivation and self-discipline, short period of courses, high costs.
- The concept of educational technology is used in two ways - educational technology means the use of mass media and audio-visual aids in education or technology in education. Educational technology means utilization of all available resources in a system in order to optimize teaching learning process or technology of education.
- The basic characteristics of educational technology are - based on science and technology, application of scientific principles, continuous and dynamic method, emphasizes on teaching-learning methods and techniques, comprehensive term, system approach.
- Objectives of Educational Technology are - to determine the goals and formulate the objectives in behavioural terms, to analyze the characteristics of learner, to organize the content in logical or psychological sequence, to mediate between content and resources of presentation, to provide the feedback among other components for the modification of learners, to evaluate the learners performance in terms of achieving educational objectives.
- The applications/scope of educational technology is in these areas - Mass education, Historical information, Costly and hazardous experiments, Gaming and simulation, Distance education and many more.
- The development of distance education is related to the development of new information and communication technologies. Some of the existing technologies are an addition to traditional education, while others can substitute it entirely. Some technologies do not provide interaction between learners, others do in various forms. Another point of view is that some technologies emphasize synchronous education - learning and interaction in real time, others - asynchronous education - self-pace learning. The various

technologies used in distance learning can be divided into four categories: print, audio, video and computer.

- Web-based education (WBE) encompasses all aspects and processes of education that use World Wide Web as a communication medium and supporting technology. There are many other terms for WBE; some of them are online education, virtual education, internet-based education, and education via computer-mediated communication.
- The specific features of Web-technology assume quick realization of all learning activities. Web-based education could be an addition to traditional education or it could substitute it.
- The advantages of Web-based education are - global accessibility, actual and dynamic changing learning content, media objects, searching of learning content, wide range of activities and assignments, actual feedback, good communication between participants, multiplatform technology.
- The disadvantages of Web - based education are - security of information, system failures and connection speed, waste of time, an authenticity of information, copyrights, and difficulties of implementation of some pedagogical approaches.



14.16 FURTHER READING

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14.17 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: The term "distance education" or "distance learning" means to describe the education given to students by conveying educational material from a distance.

Ans to Q No 2: According to Lionarakis (2005), "Distance learning is the education that teaches and enables the student to learn on his own and to operate autonomously in a heuristic self-learning path."

Ans to Q No 3: Use of different media to realize the interaction among teacher, learners and educational content.

Ans to Q No 4: To provide an effective alternative path to wider opportunities in education and especially in higher education.

Ans to Q No 5: Distance education is life-long. People can study throughout their whole lives in different fields of knowledge.

Ans to Q No 6: Distance education courses are shorter than traditional ones.

Ans to Q No 7: Educational technology is the development, application and evaluation of systems, techniques and aids to improve the process of human learning.

Ans to Q No 8: Educational Technology Robert Cox has defined the term educational technology in the following manner, "Educational technology is an application of scientific process to man's learning conditions to what has come recently to be called educational or instructional technology."

Ans to Q No 9: Educational technology is based on science and technology.

Ans to Q No 10: To organize the content in logical or psychological sequence

Ans to Q No 11: Educational technology has a tremendous application to educate a large section of people and to impart a large amount of

knowledge in a limited span of time.

Ans to Q No 12: Web-based education (WBE) encompasses all aspects and processes of education that use World Wide Web as a communication medium and supporting technology. There are many other terms for WBE; some of them are online education, virtual education, internet-based education, and education via computer-mediated communication.

Ans to Q No 13: Satellite connections and internet.

14.18 POSSIBLE QUESTIONS

Short Questions (Answer each question in around 150 words)

Q 1: What are the characteristics of distance education?

Q 2: What are the objectives of distance education?

Q 3: What are the applications of educational technology?

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

Q 1: Write briefly about the advantages and disadvantages of distance education.

Q 2: Discuss the role of educational technology in the field of distance education.

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