UNIT 7 SST

UNIT 7 Technological Media in Social science Teaching

Objectives

After studying this unit, students will be able to:

- **Understand the comparison between software and hardware approaches.**
- **Understand the principles of using hardware and software approaches.**
- **Understand the classification of hardware and software approaches.**
- **Understand the system analysis**

Introduction

Lumsdane has categorized educational technology into three approaches —

(1) Hardware Approach or Educational Technology I

(2) Software Approach or Educational Technology II

(3) System Analysis or Educational Technology III

(1) Hardware Approach or Educational Technology I—In hardware approach, the emphasis is given to teaching-accessories. This approach is based on physical sciences and engineering technology Physical sciences and engineering technology is the origin of this approach. Most people believe that Notes the machine is technically linked to the educational technology.

Education would be incomplete as longs the device like TV, tape recorder and projector are not available in the field of teaching. Hardware approaches strengthens the concept of utilizing these equipment. Davis accepts that the hardware approach is based on the application of physical science to the education and training system which mechanizes the process of teaching gradually so that teachers would be able to deal with more students, resulting in less cost and economy in finances. Marilyn Nickson (1971), educational technology deals with the application of many fields of science to the educational needs of the individual as well as of society. According to David (1971), this technology is necessary for

teaching and training. Silverman calls it as technology in education. This approach resulted in the origin of Correspondence Education and Open University System.

This approach plays an important role in the use of computers and machines for the compilation of research forms, analysis etc. Silverman (1968), called this type of educational technology "Relational Technology". In the words of Dr. Ruhela".This part of Education Technology refers to tools and hardware such as teaching machines, T.V., tape recorder etc. which are used in instructions. In fact the selection and utilization of machines and hardware approaches in the fi eld of learning is called

Hardware Approach or Educational Technology—I.

Hardware approach was firstly described by A.A. Lumsdeine. This approach is also called as audiovisual aids. In this emphasis is given to machine technology. It believes that machine does the instructional work and it is related to the cognitive side of instruction. This approach emphasize on the following three facts;

(i) Preservation

(ii) Transmission

(iii) Advancement

In the words of Dr. Kumar and Chandra

"It is important to note that these mechanical devices were not safety designed and invented to fulfi l the instructional requirement. Rather, they were designed for communication, information and recreation etc. But now, we are using them in education and training system to achieve the educational objectives of our nation."

2. Software Approach or Educational Technology-II

In the fi eld of software approach educational technology, psychological principles are used in place of machines which can bring the required changes in students. Technologies of this approach are also named as Instructional Technology, Teaching Technology and Behavioural Technology. In this approach,

machines are used only to make presentation of courses more effective. In this technology the emphasis is given to all the three phases—input, output and process. Skinner and others considered that this technical approach is based on behavioural technology. According to Arthur Melton (1959), this teaching technology is based on psychological learning and this experience starts the process of providing the desired behaviour change.

According to Davis (1971)

"This view of Educational Technology is closely associates with the modern principles of programmed learning and is characterised by task analysis, writing, precise objectives, selection of correct responses and constant evaluation."

Many educationalists believe that software approach is more important as compared to hardware approach because hardware technology is of no use unless software approach is used in it. For example, following are some hardware approach and software related to them. g are some hardware approach and software related to them.

Sr. No.	Rigid Crafts (Hardware Approach)	Related Soft Crafts (Software)1
1.	Chalk board	Use of chalk
2	Overhead projector	Transparencies
3	Slide projector	Slides
4	VCR and monitor	Video program
5	Computer	Computer program
6	Audio recorder	Recorded matter
7	Blank page	Writing

Arthur Melton has clearly written that the origin of software approach is the result of the effortsof Skinner and others. This approach is directly related to scientifi c learning which includes the behavioural changes based on experience.

Comparison between Software and Hardware Approach

In the words of Anand (1996), "Software approach is different from hardware approach in such a way that the hardware approach of educational technology uses teaching equipment while software approach use learning materials such as programmed instruction materials and techniques and methods of teaching strategies based on psychology of teaching strategies.

In hardware approach, machines are used for making the course material more effective while in software approach the emphasis is given to teaching strategies based on principles of teaching and learning rather than machines.

Uses, Need and Importance of Hardware and Software Approaches

1. These approaches are used to increase student's interest, inspire them and to make them curious.

2. By using these approaches, student's feels learning material more structured and clear.

3. These approaches play an important role in making the learning material more adaptive and simple.

4. They are capable of making learning materials more attractive and interesting. Notes

5. The student becomes more active in class activities by getting excited with these approaches.

6. They play an important role in the effective use of appropriate learning system by taking care of individual friendship of students.

7. These approaches are capable of making use of time, power and resources of teachers and students.

More effective teaching in less time and with less effort is their specialization.

Principles of Using Hardware and Software Approaches

The emphasis is given to following principles to create more effective teaching process by these two approaches.

1. Principle of Selection
2. Principle of Purposiveness
3. Principle of Economy
4. Principle of Availability
5. Principle of Simplicity
6. Principle of Stimulation
7. Principle of Self-preparation

Classifi cation of Hardware and Software Approaches

A. Rigid Crafts Hardware

Audio Approach: Radio, Transistor, Tape Recorder Teaching Machine

Visual Approach: Projector, Epidiascope, Film Strip, Slides, Computer

Audio-Visual Approach: Film, TV, Videotape

B. Soft Crafts Software: Graphics: Chart, Graph, Map, Posters, Books.

Presentation: Chalk, Flannel Board, Card, Bulletin, Notice Board, Picture and Diagram

3 Dimension: Model, Factual Materia

Principles of Selection of Hardware and Software

The principles of selection of hardware and software are explained below—

1. When selecting hardware, quality, popularity, reputation and durability and its value should be noted.

2. When selecting software, its content relevance, effectiveness and usefulness and requirement should be noted.

3. While selecting hardware or software, it should be remembered whether teacher is able to use that approach carefully in an effective way or not.

4. Hardware or software selection should be based on conditions of learning, students' needs, nature of content, school environment and their availability.

5. The same approach should be selected that is more usable, can increase interest, can inspire the students and is in accordance to needs.

Principles of Using Hardware and Software Approaches

The principles of using of hardware and software are explained below

1. One must have knowledge of these approaches before using them; he should understand the principles of these approaches and should learn how to use them. Before presented any approach, it should be checked whether it working properly or not. It should be repaired if not working properly.

2. Before using these approaches, teachers should prepare the mentally by explaining complete information about them. For example, before submitting lessons on the radio as T.V. students should know when the program will be broadcast, what are the contents of programs, which points of the program should be taken care of. In the way the entertained contents are combined with classroom teaching after preparing them mentally.

3. Teacher should develop a learning environment in the classroom in order to use hardware and software approach. While submitting the contents, teacher should take care, if every student can hear the voice with proper pitch. The contents displayed are clearly visible to students. For this, appropriate arrangements should be done. Teacher should also take care of whether students are interested or not.

4. Before using hardware and software approaches, teacher should formerly review that under what classroom situations, which approach would be more viable, the same should be used. Unnecessarily and forcefully, the approaches should not be used only to show. The approaches should be used when needed.

5. Accordingly, teacher should have feedback of the approach used from time to time and he should try to improve and to increase the effectiveness of his future teaching.

7.2 MULTIMEDIA IN SOICAL SCIENCE TEACHING

Multimedia is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content. Multimedia contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia can be recorded and played, displayed, interacted with or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance.

Multimedia devices are electronic media devices used to store and experience multimedia content. Multimedia is distinguished from mixed media in fine art; for example, by including audio it has a broader scope. In the early years of multimedia the term "rich media" was synonymous with interactive multimedia, and "hypermedia" was an application of multimedia.

History can be seen as the sum total of many things taken together and the spectrum of events occurring in action following in order leading from the past to the present and into the future (http://en.wikipedia.org). Historians are to interpretation of the past, how it affects our views of the present, understanding trends or the lack thereof in the past.

To deeply understand the rulers in India, the teacher thought that remembering the names of famous historical people, events and their activities was not sufficient and that it was important to provide multimodal information through images and moving ships, pictures, including sound and speech. For the student, graphics, animations, a replica of war equipment's were prepared.

In the same way, Geography lessons use many map, animation and video, etc. Animations represent medium for simulation, can visualize abstract relations, to explain concepts and procedures that requires movement that cannot be filmed, movements in the universe or within a body, figurative movements such as ideas, economic tendencies can be clarified through moving graphs. Videos represent

high degree of reality and visualization can show practices that take place over a long distance or period. Video and animation can be viewed on demand. The student himself has control over the material and can work on his own pace, by navigating through the subject matter. In multimedia information that is being presented both visual and in audio, is better understood and remembered.

7.2 Advantages of multimedia

• Through participation in multimedia activities, students can learn realworld skills related to technology. They will know the value of teamwork and the importance of effective collaboration techniques.

• It helps the learners to express and represent their prior knowledge and provides them with many learning opportunities.

• It provides a non-threatening environment for a learner to study at their own pace.

• The teacher is no longer the center of attention as the source of information, but rather plays the role of facilitator, setting project goals and providing guidelines and resources, moving from student to student or group to group, providing suggestions and support for student activity.

• It facilitates teaching-learning process. The combination of text, sound, and graphics holds the attention of students and makes students innovative by making their studies more meaningful. most learners enjoy working with multimedia.

• It brings forth students' talent in various ways. It empowers students to work as a designer while designing their slides, browsing and interpreting the information and then representing their knowledge to others.

• It involves interaction between the learner and the various elements on the screen.

Disadvantages of multimedia

• Lack of IT knowledge certain students may not be as computer literate as others.

• Most schools may not have technological resources, both hardware and software, that are required for using multimedia in learning.

• Some teachers depend on the traditional way of teaching because they do not know how to integrate the multimedia in their teaching.

• Most teachers need much time to prepare lessons, to evaluate students and to create tasks and activities, so they will not get more trouble by develop multimedia activities.

• Video files can be large and a long download time may leave some students with nothing to do.

• Sometimes, diverts students' attention to the pictures, sounds or relevant material presented in multimedia.

• Sometimes, excessive information about certain topic leads to cognitive overload and it becomes difficult for the students to understand all the information presented to them.

• It can be incredibly difficult for teachers to monitor all the students, and some may play games or surfing the web instead of focusing on the work at hand.

• One concern with computers is that they can reduce learning demands on students. With access to the web come millions of pieces of information, many of which contain answers to common problems from school. Students can use computers to do less work or even to cheat.

• Multimedia formats and the devices that play or store them require a constant supply of power and frequent updating, a fact that can be problematic in more remote areas.

• As technology rapidly evolves, compatibility between different devices can also be a problem when trying to move or play multimedia content. Even a simple malfunction, server error or changes between formats, as anyone who frantically struggled to connect a computer to an incompatible projector before a presentation knows all too well, can delay a presentation or permanently damage the information contained in the format.