

UNIT V

Instructional Media

Classification of Instructional Media - use of mass in classroom Instruction. New Emerging Media: Teleconferencing, communications Satellites, computer networking, word Processors, blended learning, Flipped Classroom, Artificial Intelligence, Augmented Reality- Community Resources:Field trips-Exhibition fair- Resource centre- Club-qualities of good text books- qualities of good teacher

CLASSIFICATION OF INSTRUCTIONAL MEDIA

Instructional media can be classified on the basis of their characteristics. We have studied in section the nature and major characteristics of media. Let us now discuss how to classify these media using their important characteristics.

We will use four characteristics for this purpose:

- stimulation provided to sense organs,
- learner's control over media,
- type of experience they provide, and
- Their reach.

Classification of Media according to the Sense they Stimulate

Lists media in a traditional classification i.e. according to the senses they stimulate and the message code they transmit. It may be noted that new emerging media (see item viii) box 1) stimulate more than one sense; they stimulate not just the ear or eye but both and sometimes touch. These media function in a more interactive way.

Classification of Media

i) Audio Voice (any human sender of the message)

- Gramophone records
- Audio tapes, to be used in a tape recorder or language laboratory
- Stereo record tapes
- Radio
- Telephonic conversation

ii) Visual (verbal) print or duplicated

- Textbooks, supplementary books

- Reference books,
 - encyclopedia, etc.
 - Magazines, newspapers, etc.
 - Documents, clippings from published material
 - Duplicated written material
- iii) Visual (non-projected, two-dimensional)**
- Messages pictures on roll-up board
 - Flat picture,
 - cut-outs Posters, charts, graphs, etc.
 - Cartoons, comics, etc.
- iv) Visual (non-projected, three-dimensional)**
- Models, mock-ups, display materials
 - Diagrams
 - Globes or maps (three-dimensional)
 - Specimens (animate or inanimate)
 - Puppets
- v) Visual (projected-still)**
- Slides
 - Filmstrips
 - Overhead transparencies
 - Micro image system: microfilm, micro card,
- vi) Audio-visual (projected-motion)**
- Film
 - Television
 - Close-circuit
 - television Video cassettes
- vii) Multimedia packages (for more than one sense)**
- Slide + tape
 - Slide tape + workbook
 - Radio + slide or posters (radio vision)
 - Film + posters + workbook (print materials)
 - Television + workbook (print materials) I

- Any of the above + introductory and summarizing talk by the teacherleader of the group

viii) New emerging media (all of these are multi-sensory)

- Teleconferencing (Group discussion through telephones)
- Cable television (localized television where feedback is possible)
- Television/communication satellites a
- Computer networking a
- Video discs a
- Mini computers/micro computers/word processors.

Use of mass media in classroom Instruction

INTRODUCTION

Mass media refers collectively to all media technologies that are intended to reach a large audience via mass communication. Broadcast media (also known as electronic media) transmit their information electronically and comprise television, film and radio, movies, CDs, DVDs and some other devices like cameras and video consoles. Mass media is communication—whether written, broadcast, or spoken—that reaches a large audience. This includes television, radio, advertising, movies, the Internet, newspapers, magazines, and so forth.

The media of communication is the medium by which a piece of information or knowledge is communicated to us. This medium is the message, which is of greater importance. Because, the same piece of information when conveyed on a printed page or over the telephone by radio, or television will appear different and have entirely a different effect on us. Hence the effectiveness of a piece of information depends upon the medium through which it is imparted. Thus, the mass-media are not only the messages, but also the message.

Because, it massages the sensory organs and stimulates them to respond actively. Hence, the mass media is very important for class room teaching as a part of the process of instruction. The sole objective is to improve the teaching- learning process with the use of various media. Therefore, the main purpose of mass-media in education is to benefit more students with fewer teachers or to obtain quality education.

In fact, the mass media have become a well of message around the world of today and have entered into all the structures of daily life, h can be used and in fact is being used as a means of education. So the role of mass media in education is gaining importance every day.

IMPORTANCE OR ADVANTAGES OF MASS MEDIA

1. Mass Media provide information to the mass within a less time.
2. It takes a wide coverage of information regarding anything that is happening in any corner of the world.
3. It brings the entire world to the individual or to the classroom. Children spend hours together sitting in front of the television and can visualize, hear and acquire knowledge about the world.
4. These media easily reach groups, allow repeated use, give more reality, influence attitudes, show cause and effect relationships and ultimately motivate the audience.
5. It sends information to remote places and helps in distant learning.
6. It helps in modification of attitudes, inculcation of desirable values and acquaintance with cultural heritage.
7. Mass media acts as an agency of social change.
8. Mass media are useful for reinforcing group dynamics and interpersonal communication.
9. Mass media as means of communication make ideas clear to children and help them to acquire correct knowledge. They help in simplifying and in giving vividness to explanation.
10. Mass Media make the instruction concrete and stimulate interest and excite curiosity in things.

Education today, therefore, has a far greater responsibility than it had ever before. It has to meet the demands of a dynamic world which change its character every day. Contemporary education has to be more comprehensive and complete than it was ever before. The role of the various agencies of education like home, society, community etc. has consequently increased, so has the role of the mass media like television, radio, cinema, newspaper increased. So now-a-days, press, radio, cinema, television, etc. are becoming more and more important in an individual's life.

GENERAL PRINCIPLES OF USING MASS MEDIA

The teacher should make all necessary arrangements for using the mass media very effectively. He should select the mass media according to the age level of the students. He must know some general principles of using the mass media.

1. Organisation:

Mass media should be organised as integral part of the educational programmes. They should not be separated from other curricular activities.

2. Selection:

Mass media should be properly selected and coordinated by the teacher. An experienced and trained teacher can select the mass media according to the needs of the students.

3. Planning:

Mass media should be available according to the need of the instructional programme. The teachers should possess skill in the use of mass media. They should have special training in their preparation. So they should be properly planned.

4. Experience:

Mass media should be related to pupil's experience.

5. Preparation:

There should be adequate preparation on the part of pupils. The teacher should prepare himself before using it. He should know what the mass media teach and where they fit into his plan of teaching. Adequate preparation should be followed by proper presentation and an adequate follow-up.

6. Evaluation:

Mass media should be evaluated at regular intervals in regards to their use, effect on learning and their functions.

Educational Program:

Now most of the TV has or is broadcasting or telecasting education program for making talented or intellectual general people or student such as debate program, computer education, BBC Janala, Mina Carton and Sisum Pur for children as well as people can know how to save them at the time of natural disaster those are living in costal area or risky area, even they can learn precaution about earth quick and Suname from TV and Radio.

Awareness Program for people from TV:

Awareness program is the most important and common program for all TV channel and Radio Sponsored by UNCEP, Save the children, and UN. By the Awareness program, people can make themselves awareness about their social life by watching TV and listening Radio

such Family planning, health care and nutrition program for children, mother's care during the period of pregnancy, and AIDs. BTV would broadcast one program or Drama by the name of Sobuj Chata. I appreciate this kind of program. By that Drama, people can learn primary problem how to solve.

Cultural program:

Every nation have own their culture. To develop their own culture, there is no alternative way. For the last two decades Mass media have kept great contribution. TV, Radio and newspaper arrange different types of cultural program to practicing in Bangladesh as a nation of Bengali. Mass media encourage to celebrate like as Pohela Boishakh, receive the Fulgune utshob.

Self sufficient:

TV broadcasts many training programs and self sufficient program to reduced the unemployed such as Matio O Manush (Agriculture program). I appreciate this types of program because this kind of program to help unemployed people to make carrier or start small business by themselves own attempt or afford.

Television offers lots of benefits to kids, including:

1. Because of its ability to create powerful touchstones, TV enables young people to share cultural experiences with others.
2. Shared viewing gives family members of all ages an opportunity to spend time together.
3. Parents can use TV as a catalyst to get kids reading—following up on TV programs by getting books on the same subjects or reading authors whose work was adapted for the programs.
4. Great television can teach kids important values and life lessons.
5. TV can help introduce your family to classic Hollywood films and foreign movies that may not be available in your local video store.

New emerging media

Teleconferencing

INTRODUCTION

Various technologies used in distance learning, as discussed in the earlier units are the broadcast & non-broadcast audio/ video media. These technologies generally lack a two-way

communication channel between the teacher and the student. Successful distance education systems ensure active learning that involves interactivity between teacher and students and among students themselves. The quality of educational process depends upon sustained, two-way communication. Teleconferencing has great potential for providing this essential two-way communication. The potential of teleconferencing (TC) lies in creating greater opportunity for dialogue, which facilitates more effective learning than studying in isolation. In this unit, we shall study various types of teleconferencing technologies that are available and their advantages, disadvantages and applications in distance learning / teaching. It is necessary to understand the limitations and potential of this technology to evaluate its use in distance education. Teleconferencing is a function which can be hosted on a variety of technologies i.e. telephone, satellite, Internet and can be applied to wide range of situations like live video lecturing to a large audience, from point to point, individual desktop, PC Chats. The success of the teleconferencing may well depend on factors other than the technology. These factors range from institutional issues, to cost, to student and tutor attitude to technology. It is also highly dependent on the teaching methods adopted. In view of its use teleconferencing may become the most used technology in distance education in near future.

Designing Instruction for Teleconferencing

In designing instruction for teleconferencing, focus needs to be on how to present it in audio-visual way. When designing material to be delivered through teleconferencing, one should incorporate different activities involving students at the various sites to retain their attention. Such as discussions, student presentations, sharing of experiences, etc. Changing instruction methods periodically during the session will also sustain students' interest. While teaching material viz. pictures, diagrams, maps, graphs, tables, and charts may be conceptually similar to those used in conventional class room teaching, but they should be designed so that they are formatted to suit the medium being used. For example, graphical charts should be prepared with big font size and good colour contrast to show up clearly on the receiving side monitors. Information presented should be adequately summarized for retention and recall.

In fact, the ability to show movement in video can be effectively used to demonstrate experiments to show the processes and operation of the equipment and tools. Animations, slow motions can help in analysis of the actions over a period of time. Simulations and three dimensional models simplify understanding of complex three dimensional qualities of an object or structure. Historical topics may be supported by the photos or film clips to add authenticity to the subject and to take students to that era

Conducting Teleconferencing Sessions Once basic teaching methods are finalized, the following three-step strategy may be adopted to ensure good rapport between students and teacher

Preparation Before Conference It generally takes more time to deliver instruction through technology than in a traditional face-to-face setting. Therefore lessons are to be planned accordingly. Practicing with equipment's and a few target students if possible, enables smooth teleconference sessions later. Ensure that students received necessary background materials to make the best use of the conference. Discussion topics or questions may be defined clearly in advance so that students can prepare for interaction. Possible study questions may be created to help in focusing on discussions.

During the teleconferencing Session Eye contact is very important in video conference. Facial expressions, tone of voice, body movements are also important to enhance communication and attention of the student. Raising questions, involving students, and praising student contributions are also to be parts of the discussions. Presentation may be in short spells interspersed with discussions. Instruction and interaction can be alternately used. Avoid reading from the prepared text and maintain a moderate speaking pace. Concepts discussed in the program may be reviewed and focused questions should be asked as all students may not feel free to express doubts in conference mode. Activities may be integrated to reinforce the content. V-L, quizzes, worksheets, role-playing, and experiments. Topics or questions may be displayed on the screen as reinforcement. Student-to-student interaction may be encouraged

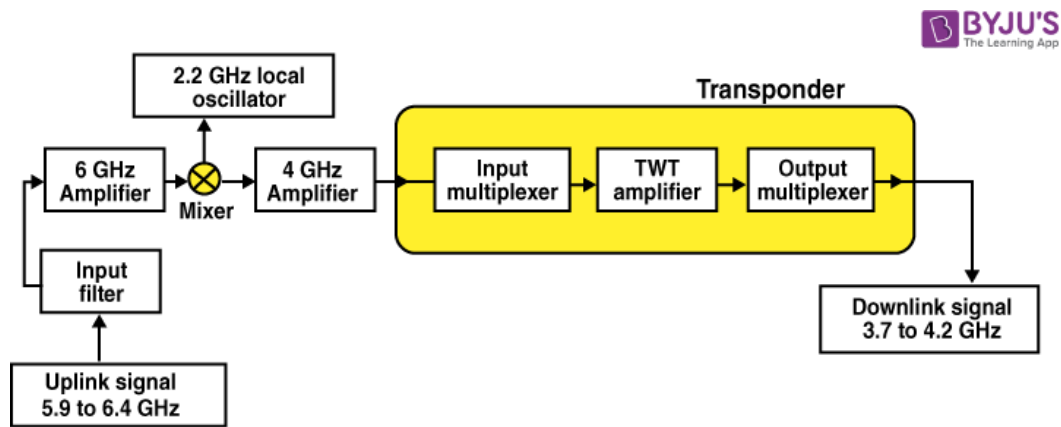
After the Session Recordings of the presentation may be reviewed for improving presentation, style, and delivery methods. Student feedback may be obtained on the strengths and weaknesses of the instructional materials and the teaching strategies used. Since the technology is the only link between teacher and student one should be open to latest technologies and new ideas

Satellite Communication

Satellite communication is the method of transporting information from one place to another using a communication satellite in orbit around the Earth. Watching the English Premier League every weekend with your friends would have been impossible without this. A communication satellite is an artificial satellite that transmits the signal via a transponder by creating a channel between the transmitter and the receiver located at different locations on the Earth.

Telephone, radio, television, internet, and military applications use satellite communications. Believe it or not, more than 2000 artificial satellites are hurtling around in space right above your heads.

Satellite Communication Block Diagram



Need for Satellite Communication

We know that there are different ways to communicate and the propagation of these waves can take place in different ways. Ground wave propagation and skywave propagation are the two ways in which communication took place for a certain distance. The maximum distance covered by them is 1500 km and this was overcome by the introduction of satellite communication.

How Satellite Communications Work?

The communication satellites are similar to the space mirrors that help us in bouncing the signals such as radio, internet data, and television from one side of the earth to another. There are three stages that are involved which explain the working of satellite communications.

These are:

- Uplink
- Transponders
- Downlink
- Let's consider an example of signals from a television. In the first stage, the signal from the television broadcast on the other side of the earth is first beamed up to the satellite from the ground station on the earth. This process is known as uplink.
- The second stage involves transponders such as radio receivers, amplifiers, and transmitters. These transponders are used for boosting the incoming signal and to

change their frequency so that the outgoing signals are not altered. Depending on the incoming signal sources, the transponders vary.

- The final stage involves a downlink in which the data is sent to the other end of the receiver on the earth. It is important to understand that usually there is one uplink and multiple downlinks

Computer Networking

A computer networking is a process of connecting two more than two computers with the purpose to share data, provide technical support, and to communicate (especially for the business purpose).

Internet is the technology that is used to connect different computer systems (located in different geographic location). Networking technology has revolutionized the world and created a new arena for the overall development of every nation.



Advantages of Networking

Let us now discuss the advantages of networking. The advantages are described below –

Facility of Technical Support

Because of having computer networking, a person sitting in the United States of America provides technical support to a person sitting in a remote part of India.

Easy Sharing of Data

With the help of networking, it is very simple to share all formats of digital data from one computer system to another (irrespective of their geographic location).

Easy Sharing of Hardware Resource

With the help of networking, it has now become very simple to share the expensive resources including storage space, processor, fax, etc.

Easy Sharing Software

Through the networking system, it is easy to share and install the software from one computer system to another computer system.

Easy to Decentralize Data Processing

Through the networking system, it is very simple to decentralize the data processing system. It ultimately helps to control, secure, and manage the important data.

Easy to Communicate

With the help of networking, the communication system has now become highly efficient, frugal, and fast. The different modes of communication are text chatting, video chatting, emails, etc.

Types of Network

The different types of network are

- Local Area Network (LAN)
- Metropolitan Area Network (MAN)
- Wide Area Network (WAN)

Local Area Network

- Local Area Network or simply LAN is the technique of interconnecting a few computers located in a given premise. It is normally used for a single business office or a residential apartment.
- The major purpose of such inter connectivity is to establish a communication system in order to make the work easier.
- However, in such connectivity, some other devices can also be attached such as laser printers, fax machine, etc.

Metropolitan Area Network

Metropolitan Area Network or simply MAN is a system of network that normally covers a large metropolitan area (city part).

It provides high speed Internet services throughout the area covered within the network.

Wide Area Network

Wide Area Network or simply WAN is a system of network that covers a large geographical area across the world.

The services of WAN are provided by public (government) agencies as well as private agencies. The network also provides the facility to access databases located remotely.

The WAN system is highly beneficial for MNCs and other big corporate companies (offering online services).

Word Processor

Sometimes abbreviated as **WP**, a **word processor** is a software program capable of creating, storing, and printing typed documents. Today, the word processor is one of the most frequently used software programs on a computer, with Microsoft Word being the most popular word processor.

Word processors can create multiple types of files, including text files (.txt), rich text files (.rtf), HTML files (.htm & .html), and Word files (.doc & .docx). Some word processors can also be used to create XML files (.xml).

Overview of Word

In a word processor, you are presented with a blank white sheet as shown below. The text is added to the document area and after it has been inserted formatted or adjusted to your preference. Below is an example of a blank Microsoft Word window with areas of the window highlighted.

Features of a word processor

Unlike a basic plaintext editor, a word processor offers several additional features that can give your document or other text a more professional appearance. Below is a listing of some of the most popular features of a word processor.

- **Text formatting** - Changing the font, font size, font color, bold, italicizing, underline, etc.
- **Copying, cutting, and pasting** - Once text is entered into a document, it can be copied or cut and pasted in the current document or another document.
- **Multimedia** - Insert clip art, charts, images, pictures, and video into a document.
- **Spelling and Grammar** - Checks for spelling and grammar errors in a document.
- **Adjust the layout** - Capable of modifying the margins, size, and layout of a document.
- **Find** - Word processors give you the ability to quickly find any word or text in any size of the document.

- **Search and Replace** - You can use the Search and Replace feature to replace any text throughout a document.
- **Indentation and lists** - Set and format tabs, bullet lists, and number lists.
- **Insert tables** - Add tables to a document.
- **Word wrap** - Word processors can detect the edges of a page or container and automatically wrap the text using word wrap.
- **Header and footer** - Being able to adjust and change text in the header and footer of a document.
- **Thesaurus** - Look up alternatives to a word without leaving the program.
- **Multiple windows** - While working on a document, you can have additional windows with other documents for comparison or move text between documents.
- **Auto Correct** - Automatically correct common errors (e.g., typing "teh" and having it autocorrected to "the").
- **Mailers and labels** - Create mailers or print labels.
- **Import data** - Import and format data from CSV, database, or another source.
- **Headers and footers** - The headers and footers of a document can be customized to contain page numbers, dates, footnotes, or text for all pages or specific pages of the document.
- **Merge** - Word processors allow data from other documents and files to be automatically merged into a new document. For example, you can mail merge names into a letter.
- **Macros** - Setup macros to perform common tasks.
- **Collaboration** - More modern word processors help multiple people work on the same document at the same time.

Examples and top uses of a word processor

A word processor is one of the most used computer programs because of its versatility in creating a document. Below is a list of the top examples of how you could use a word processor.

- **Book** - Write a book.
- **Document** - Any text document that requires formatting.
- **Help documentation** - Support documentation for a product or service.
- **Journal** - Keep a digital version of your daily, weekly, or monthly journal.

- **Letter** - Write a letter to one or more people. Mail merge could also be used to automatically fill in the name, address, and other fields of the letter.
- **Marketing plan** - An overview of a plan to help market a new product or service.
- **Memo** - Create a memo for employees.
- **Report** - A status report or book report.
- **Résumé** - Create or maintain your résumé.

Examples of word processor programs

Although Microsoft Word is the most popular word processor available, there are other word processor programs. Below is a list of some popular word processors in alphabetical order.

- Abiword.
- Apple iWork - Pages.
- Apple TextEdit - Apple macOS included word processor.
- Corel WordPerfect.
- Dropbox Paper (online and free).
- Google Docs (online and free).
- LibreOffice -> Writer (free).
- Microsoft Office -> Microsoft Word.
- Microsoft WordPad.
- Microsoft Works (discontinued).
- SoftMaker FreeOffice -> TextMaker (free).
- OpenOffice -> Writer (free).
- SSuite -> WordGraph (free).
- Sun StarOffice (discontinued).
- Textilus (iPad and iPhone).
- Kingsoft WPS Office -> Writer (free).

Word processor advantages over a typewriter

See our typewriter page for a listing of advantages a computer with a word processor has over a typewriter.

Blended Learning (BL):

Introduction

The world is changing constantly and the various domains are also influenced by the change. There is no exemption even in the education domain. The evolution of the digital learning platforms has a huge impact in educational institutions and has eventually put the traditional methods in the back seat. However, there are demands for both technology and traditional learning methods. As a result of this, the art of combining digital learning tools with more traditional classroom face to face teaching gave birth to the term -Blended Learning. This chapter deals about the educational transformations and the prerequisite for

Blended Learning

BL is not a mere mix of online and face-to-face mode, but it refers to a well-planned combination of meaningful activities in both the modes. The blend demands consideration of several factors, mainly focussing on learning outcomes and the learner centred instructional environment.

Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, the NEP 2020 recommends for use of blended models of learning. The NEP-2020 states that while promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.

The important features of Blended Learning (hereafter referred to as BL) environment are:

- Increased student engagement in learning.
- Enhanced teacher and student interaction.
- Responsibility for learning.
- Time management and flexibility
- Improved student learning outcomes
- Enhanced institutional reputation.
- More flexible teaching and learning environment
- More amenable for self and continuous learning
- Better opportunities for experiential learning

The advantages of BL for students include increased learning skills, greater access to information, improved satisfaction and learning outcomes, and opportunities both to learn with others and to teach others.

Role of a Learner in the BL Environment

Increase student interest:

When technology is integrated into school lessons, learners are more likely to be interested in, focused on, and excited about the subjects they are studying.

Keep students focused for longer:

The use of computers to look up information & data is a tremendous lifesaver, combined with access to resources such as the internet to conduct research. This engagement and interaction with the resources keeps students focused for longer periods than they would be with books or paper resources, this engagement also helps develop learning through exploration and research.

Provides student autonomy:

The use of e-Learning materials increases a student's ability to set appropriate learning goals and take charge of his or her own learning, which develops an ability that will be translatable across all subjects.

Instill a disposition of self-advocacy

Students become self-driven and responsible, tracking their individual achievements, which helps develop the ability to find the resources or get the help they need, self-advocating so they can reach their goals.

Promote student ownership

BL instills a sense of 'student ownership over learning' which can be a powerful force propelling the learning, It's this feeling of responsibility that helps the feeling of ownership.

Allow instant diagnostic information and student feedback

The ability to rapidly analyze, review and give feedback to student work, gives the teacher the ability to tailor his teaching methods and feedback for each student while improving time efficiency.

Enables students to learn at their own pace:

Due to the flexibility of BL and the ability to access internet resources allows students to learn at their own pace, meaning a teacher can help speed up the learning process or give more advanced resources if necessary.

Prepares students for the future:

BL offers a multitude of real-world skills, that directly translate into life skills, from:

- Research skills
- Self-learning
- Self-engagement
- Helps to develop a ‘self-driving force’
- Better decision making
- Offers a larger sense of responsibility
- Computer literacy

Flipped learning

Flipped learning is a methodology that helps teachers to prioritize active learning during class time by assigning students lecture materials and presentations to be viewed at home or outside of class. One of the most exciting advancements in the modern classroom is flipped learning.

Some examples of flipped learning

There are several ways faculty can flip the class: utilizing textbooks that have an online component; recording lectures ahead of class meetings using lecture capture software (Echo360 and Blackboard Collaborate Ultra are available for U Mass Boston faculty); or taking your regular lecture and sprinkle in questions.

A Flipped classroom flips class lectures and homework assignments around.

Flipped learning Works

The student's focus on a shortened pre-recorded or pre-prepared lecture/ lesson at home (for homework) and gives students direct access to knowledge virtually anywhere at any time

Four pillars of flipped learning?

Many teachers may already flip their classes by having students read text outside of class, watch additional videos, or solve extra problems, but to engage in Flipped Learning, teachers must incorporate four pillars into their practice: **(F.L.I.P) Flexible Environment, Learning Culture, Intentional Content and Professional Educator.**

The advantages of a flipped classroom

- More one-to-one time between teacher and student. ...
- More collaboration time for students. ...
- Students learn at their own pace. ...

- It encourages students to come to class prepared. ...
- Practical things – like missing class due to illness – become less problematic

What Are The Disadvantages Of A Flipped Classroom?

- It can create or exacerbate a digital divide. ...
- It relies on preparation and trust. ...
- There is significant work on the front-end. ...
- Not naturally a test-prep form of learning. ...
- Time in front of screens—instead of people and places—is increased.

Artificial intelligence

- It is necessary to ignore the individual differences of learners without learning. It is imperative to configure the learning environment and personalize teaching for each user. Artificial intelligence algorithms are used to design e-learning environments that will be created in this way.
- New technologies are now seen as complementary support, not as core techniques of educational practice. The use of artificial intelligence (AI) techniques is beneficial to learners in this sense Artificial intelligence (AI) operating systems, programming languages, and modern software are realized through computer science. Artificial intelligence (AI) is linked to—mainstream computer science studies, time-sharing, interactive interpreters, linked list data types, automatic storage management, and so on. Some of the key concepts of artificial intelligence are object-oriented programming and graphical user interfaces and integrated program development environments. Artificial intelligence (AI) is in the pattern with evolutionary algorithms, fuzzy logic, and neural networks concepts
- Education and artificial intelligence (AI) are two sides of the same medal: education helps learners learn and expand the accumulated knowledge of a society, and artificial intelligence (AI) provides techniques for understanding the mechanisms underlying thought and intelligent behavior.
- Because of this, today's artificial intelligence-assisted e-learning scenarios are widely used by educational institutions to provide better teaching and learning experiences throughout their training activities. Artificial intelligence (AI) leads to the development of a wide range of artificial intelligence tools as theory and practice. Sometimes, these tools, working under the guidance of a human being and sometimes without an external guide, can solve or help solve a growing number of

problems. Artificial intelligence (AI) has produced many important results for students, teachers, the general education system, and societies over the past 50 years

- **Micro credentials**

- In education, teachers need to create experiences for students and to experience competence-based learning. Micro credentials can help teachers build personalized, competency-based learning paths and be recognized for a wide range of valuable and important learning experiences. More demand for micro credentials learning plays a central role in how the learner will be presented and evaluated. Micro credential is a focused, short delivery based on competency. Students will receive –deep knowledge of a specific topic and will show the application of this knowledge

- The micro credential is not a single-size fit, it is personalized instead. The micro credential honours the fact that all training professionals and students need something different. And with digital tools, this learning can take place anytime and anywhere. Micro credential offers a strategy for teachers to expand their learning and to confirm and accept recognition as they progress through vocational learning. One of the reasons why micro credential is attractive is that it divides complex teaching skills into basic pieces. Trainees can develop and demonstrate competence at the beginning of each instruction and then link these skills to master competence in complex skills. Teachers can choose which skills or which parts of a skill they will most benefit from professional practice and demonstrate competence by offering what they can do

- **Big data**

Recent developments in database technologies have made it possible to accumulate and maintain large and complex amounts of data from many forms and from multiple sources. In addition, this complex data is meaningful, and there are analytical tools that can transform the mold. These tools are called big data. It is very important to put teachers into –big data discussions, because they are the ones that will provide the progress in research and analysis. The projects that teach teachers about which pedagogical techniques are most effective, or how they have changed the way students learn, make it possible for instructors to do a better job. Adapting education to individual students is one of the greatest benefits of technology, and great value helps teachers personalize their learning. In this sense big data holds an important place in education student data collected by online learning systems are examined to develop predictive models by applying educational data mining methods that classify or relate data. These models play a key role in shaping adaptations or interventions based on

model predictions, to promote adaptive learning systems that can be used to inform learners outside academic services to support what they can learn or to modify student experiences. Two areas specific to big data use in education can be mentioned. One of them is educational data mining and the other is learning analysis. Big data enables a wide variety of data sources to be added, allowing analysis of these various data types. Analytical and predictable options are expanding. This allows for better progress in education

What Is Augmented Reality?

Augmented reality (AR) is an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound, or other sensory stimuli delivered via technology. It is a growing trend among companies involved in mobile computing and business applications in particular.

KEY TAKEAWAYS

- Augmented reality (AR) involves overlaying visual, auditory, or other sensory information onto the world in order to enhance one's experience.
- Retailers and other companies can use augmented reality to promote products or services, launch novel marketing campaigns, and collect unique user data.
- Unlike virtual reality, which creates its own cyber environment, augmented reality adds to the existing world as it is.

Understanding Augmented Reality

Augmented reality continues to develop and become more pervasive among a wide range of applications. Since its conception, marketers and technology firms have had to battle the perception that augmented reality is little more than a marketing tool. However, there is evidence that consumers are beginning to derive tangible benefits from this functionality and expect it as part of their purchasing process.

For example, some early adopters in the retail sector have developed technologies that are designed to enhance the consumer shopping experience. By incorporating augmented reality into catalogue apps, stores let consumers visualize how different products would look like in different environments. For furniture, shoppers point the camera at the appropriate room and the product appears in the foreground

Elsewhere, augmented reality's benefits could extend to the healthcare sector, where it could play a much bigger role. One way would be through apps that enable users to see highly detailed, 3D images of different body systems when they hover their mobile device over a target image. For example, augmented reality could be a powerful learning tool for medical professionals throughout their training.

Some experts have long speculated that wearable devices could be a breakthrough for augmented reality. Whereas smartphones and tablets show a tiny portion of the user's landscape, smart eyewear, for example, may provide a more complete link between real and virtual realms if it develops enough to become mainstream.

Augmented Reality vs Virtual Reality

Augmented reality uses the existing real-world environment and puts virtual information on top of it to enhance the experience.

In contrast, virtual reality immerses users, allowing them to "inhabit" an entirely different environment altogether, notably a virtual one created and rendered by computers. Users may be immersed in an animated scene or an actual location that has been photographed and embedded in a virtual reality app. Through a virtual reality viewer, users can look up, down, or any which way, as if they were actually there.

Community Resources:

Field trip: A field trip or excursion is a journey by a group of people to a place away from their normal environment. The purpose of the trip is usually observation for education, non-experimental research or to provide students with experiences outside their everyday activities, such as going camping with teachers and their classmates. The aim of this research is to observe the subject in its natural state and possibly collect samples. Field trips are also used to produce civilized young men and women who appreciate culture and the arts. It is seen that more-advantaged children may have already experienced cultural institutions outside of school, and field trips provide a common ground with more-advantaged and less-advantaged children to have some of the same cultural experiences in the arts.

Exhibitions and fairs

The roots of the phenomenon "Fairs and Exhibitions" can be traced back to its language origin. "Fair" comes from Latin "feria", meaning "holiday" as well as "market fair". This in turn corresponds to the Latin "feriae", which came to mean religious festival.

Exhibitions differed from fairs in four major ways: First, exhibitions were usually one-time events. They did not enjoy a recurring life cycle. However, while fairs ran for a short period of time, many exhibitions ran for months, some for a year or longer. Second, exhibitions were housed in permanent facilities built specifically for them. Starting in the 18th century, the practice of building a facility for the express purpose of housing an exhibition was the precursor of the exposition/convention centre industry. Third, although fairs were held regularly, they were not highly organized events. Over time, religious and later civic leaders did take control of the grounds where fairs were held (usually public lands). Exhibitions, on the other hand, were highly organized events. They were initially created by government departments or committees for the purpose of promoting trade. Finally, exhibitions differed from fairs in the very way in which business was conducted. Goods were bought and sold at fairs. At exhibitions, commercial activity or selling of the displayed goods, was not usually involved. However, inherent in displaying the goods was the hope of stimulating future sales. Today this is how most exhibitions still operate.

Commerce Club

To widen the knowledge of students a good Commerce teacher can involve his students in a number of co-curricular activities such as Commerce club, industrial visits, class magazines etc. there is no limit to such extracurricular activities and the teacher is free to undertake one or more such activity at higher secondary school level for the benefit of his students. As in some other subjects so also in Commerce, the students be encouraged to organize themselves into Commerce clubs under the auspices of their organization, discussion and lectures etc. are arranged. Such functions are quite helpful in creating interest in Commerce. Under the auspices of such organization certain activities based on some concepts of Commerce.

Qualities of a good Commerce textbook: Text books are the most widely used of all instructional materials. Now a day's text book has become a course of study. A set of unit plans and a learning guide as well. A text book should really design for the pupils rather than the teacher. Text book should stimulate reflective thinking and cultivate in students the scientific attitude. In the teaching-learning process, the text-book occupies an important place. There is a saying "As is the text-book, so is the teaching and learning". A good text-book can even replace class-room teaching. The Commerce text-book should aim at aiding the pupils in the development of their personalities, in developing open mindedness, developing appreciation and understanding of nature and not merely stuffing their minds

with facts.

The opportunity of this analysis has been offered to students, future teachers of Commerce, around the time when they will directly use the textbooks for preparing and teaching the lessons. The main objective of this coordinated exercise of exploring the quality of the alternative Commerce textbooks is the development of the students' abilities to critically analyze the textbooks which they will use in the near future and for which they will have to express alternative options. The interests of the authors are also focused on the role of the textbooks in the learning process, on the analysis of their contribution to the students' progress in the scientific knowledge but also to their personal development. The textbook, as a source of the basic knowledge of Commerce as a school subject, but also as a collector of methodological ideas, is a „territory” that is insufficiently explored by students in the initial teaching preparation.

Qualities of an good teacher: Commerce/Economics teachers need characteristics that are common to all good teachers, but, in addition, they need additional qualities specific to their chosen subject area. General Characteristics. Good teachers are dynamic, patient, understanding and caring. Knowledge, Personality and Physical Attributes.

Teaching Style/Approach:

An excellent Commerce/Economics teacher:

1. Enthusiastic about teaching students the subject matter
2. Treats students with respect and designs curricula to meet the needs of all students, regardless of level of instruction
3. Ability to be discipline, to be firm and fair,
4. Sets an example of integrity inside and outside the classroom and teaches students responsibility and high standards
5. Plans lessons well in advance, gives adequate time for each topic, and integrates subjects
6. Teaches well organized concepts in a conceptually concise fashion
7. Stresses concept learning rather than rote memory
8. Continually reassesses approaches, lectures and tests to insure a fresh, relevant curriculum
9. Ability to inspire and motivate students,
10. Dedication to teaching profession.

Subject Expertise/Teaching Techniques

An excellent teacher:

- ✓ Teaches students how to learn, analyze and think critically,

emphasizing good scientific methodology and problem solving skills

- ✓ Prepares lessons that will enhance problem solving ability
- ✓ Develops hands-on activities to illustrate concepts and uses a variety of approaches to assist the learning processes lectures, discussions, demonstrations, field trips, guest speakers, student presentations, films and slide shows
- ✓ keeps up-to-date in the subject matter
- ✓ Ability to inspire and motivate students,
- ✓ Ability to be discipline, to be firm and fair,
- ✓ Dedication to teaching profession.

Teaching Environment

An excellent teacher:

1. Creates an exciting classroom atmosphere with as many living things as possible to enhance learning.
2. Acquires up-to-date equipment for laboratory work
3. Joins committees to improve the school, department, himself/herself
4. Generates new and exciting ideas for students to think about
5. Encourages students to ask questions about the lesson
6. Knows how to administer first aid in case of accidents.

Community Involvement

An excellent teacher:

1. Will use the community resources by inviting guest speakers from nearby institutions and conduct field trips to public and private sector industries, markets, museums, etc.
2. Develops and promotes advanced and/or continuing education courses in the school district, if possible
3. Attends other activities in which students are involved such as musicals, sports, art exhibits, etc.
4. Takes an interest in and gets involved in community activities
5. Solicits support from community businesses to improve facilities and programs in the schools.

Professional Development

An excellent teacher:

1. Continually updates his/her knowledge by
 - ❖ Reading the literature

- ❖ Attending conferences, conventions, workshops and seminars
 - ❖ Taking college or in-service courses
 - ❖ Visiting local market, bazaar, stock exchange etc.
2. Becomes active in a professional organization and encourages colleagues to join aswell
 3. Seeks grant support to purchase equipment, to organize or attend meetings or conferences, and to fund special educational projects.