"Creativity is the capacity to produce ideas that are both new and useful through divergent thinking". **- Guilford**

Fostering of creativity in School children :

The following suggestions are given for fostering and guiding creative children.

Competitions : Problem - solving, quiz competitions, painting etc provide creative thinking for children.

Curriculum : The curriculum for the child should be so designed as to have ample scope for creative thinking.

Curiosity : The curiosity of the child should be satisfied with affection and tolerance.

Clubactivities : Science club, Nature club can be conducted in schools

Methods of teaching : Heuristic and project method are some methods of teaching for promoling creativity among children.

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ICT FOR ENRICHING TEACHING AND LEARNING

UNIT - 1
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

1. Discuss the Meaning and Definition of Educational Technology.

Ans : Meaning : Education means any process of Learning. Technology means a science of techniques and methods of doing getting things done, related to any art, science or to a particular profession. Education Technology is as wide as education, itself. It is concerned with the design and evaluation of curriculum and learning experiences and with the problems of Implementing and renovating them.

Definitions :

"Education Technology is the application of scientific methods and techniques to education".

- B.P. Lulla

"Educational Technology is the development, application and evaluation of systems, techniques and aids to improve the process of human learning

- National Counsil of Education Technology U.K.

2. Describe characteristics, Advantages, of Education Technology.

Ans : Characteristics :

* It is an important medium of communication

* Education Technology is the application of scientific principles to education

* It involves input, output and process aspect of Education.

* It stresses the organization of learning situations for the effective realization of the goals of the Education.

Advantages :

* Educational administrative problems can be solved scientifically with the help of system analysis.

* It helps in improving teaching - Learning process and makes it more purposive.

* It helps in understanding the structure and nature of teaching. Teaching Models can be developed for achieving different objectives in education.

3. What is communication ? Define it.

Ans : Communication is one of the commonest things people do . Communicaton Means to Inform, to tell, to show, or to spread information. It brings about unity of purpose, Interest and efforts in an organisation. Communication tries to blend into a mutual understanding of a fact, principle or theory.

Definitions:

"Communication is the process by which information is transmitted between individual and /or organisations so that an understanding response results" ***- Peter Little***

"Communication is an exchange of facts, Ideas, opinions or emotions by two or more persons". ***- George Terry***

"Communication is the sharing of Ideas and feelings in a Mood of mutuality" ***- Edgar Dale***

4. Discuss the components of communication Describe the classification (Types) of communication.

Ans: The various components of communication are briefly described to help understand the process of communication.

1. Message :

It is information, written or spoken, which is to be sent from one person to another. The most important characteristic of message as an element of communication is that it is organised,

structured, shaped and selective

2. Sender :

The person who transmits, spreads or communicates a message or operates an electronic device is the one who conceives and initiates the message with purpose of informing the attitude, opinion of the receiver.

3. Encoding :

It involves deciphering the message.

4. Channel :

This is the vehicle or medium which facilitates the sender to convey the message to the receiver.

5. Receiver :

A person who receives and interprets the message.

6. Decoding :

It involves deciphering of the message.

7. Acting :

Communication manipulates the receiver to act in a desired manner.

8. Feed back :

It is the response the receiver gives to the sender as a result of sender's message.

Types of Communication

We classify communication according to the number of persons (receivers) to whom the message is addressed.

1. **Intra personal communication :**

It is talking to one self in one's own mind.

Examples :

Soliloquies, asides in dramatic works.

2. **Interpersonal Communication :**

It is the exchange of messages between two persons.

Example : a conversation or an interview in which two persons interact.

3. **Group communication :**

It can be among small or large groups, like an organisation, club or class room, in which all individuals retain their individual identity.

4. **Mass communication :**

.It occurs when the message is sent to large groups of people.

Example : Newspaper, radio or television.

5. **Verbal communication :**

It means communicating with words, written or spoken.

6. **Non verbal communication :**

It includes using of pictures, signs, gestures and facial expressions for exchanging information between persons.

5. **Which are the barriers of communication ? Discuss?**

Ans : Barriers may arise at any of the following levels.

1. **Psychological barrier :**

Teachers and taught often have a barrier between them because of their different roles.

2. **Physical barriers :**

Environmental, improper time, physical discomfort and ill health.

3. **Medium which misses :**

If the sender picks the wrong medium, he will not transmit the message successfully.

4. **Learner Mass :**

Teachers think of the learners as an undifferentiated mass of people and launch a single communication at them in the hope that it will hit their "Learner Mass" target.

5. Back Ground Barriers :

previous experiences, previous knowledge inadequate.

6. What are the characteristics and importance of ICT.

Characteristics of ICT

1. ICT information is available for learners any time.
2. By using ICT advanced technology we can transform information to learners.
3. By using ICT we can design our portfolio
4. ICT gets all global infront of learners.
5. ICT can used in educational institutions, offices, home teaching and learnings

Importance of ICT :

1. By using ICT we can increase afficency of Educational institution.
2. It can act as intermediate between teachers and learners.
3. Students practises are highly used in this ICT.
4. It can be used Globally with out any boards.

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UNIT - 2
ICT IN EDUCATION

1. How would you analyse "Flander"s Interaction analysis category system.

Ans : Ned. A Flanders standardized ten categories Interaction analysis. This is known as Flanders Interaction Analysis categories system (FIACS)

Basic assumptions

1. Mostly the classroom is predominant with verbal communication, i.e., either the teacher is speaking or the students are speaking when teaching process goes on in the classroom.
2. The classroom verbal behaviour of the teachers and the students can be observed and recorded objectively and reliably.
3. In the classroom, non-verbal behaviour also occurs but that can not be measured very accurately and reliably.
4. Teacher's classroom behaviour highly influences the learner's behaviour.
5. Teacher's classroom behaviour can be modified through feedback.

Flanders has categorized the interaction of teachers and pupils in classrooms. There are ten categories in the system. Among them seven categories are assigned to teacher talk and two to student talk and the tenth category classifies pauses, short periods of silence and talk that is confusing or noisy. The seven categories assigned to teacher talk are again divided into indirect and direct influence.

Categories 1 to 4 represent indirect influence.

Categories 5 to 7 represent direct influence.

Category 8 student talk - response to teacher.

Category 9 student talk - initiation by the pupils.

Indirect influence encourages student participation and freedom of action. Direct influence increases the active control of the teacher and often aims at conformity and compliance. Direct influence tends to increase the teacher's activity and restrains student behaviour. The net effect is less freedom of action for the students.

Flanders Interaction Analysis Categories

Flanders Interaction Analysis Category table has been given in the next page.

No scale is implied by the numbers. Each number is classificatory, it merely denotes a particular kind of communication event. Thus to write these numbers down during observation is to enumerate not to judge a position on the scale.

TEACHER	**Indirect Influence**	1. **Accepts Feelings :** Accepts and clarifies feeling manner tone of the students in a non-threatening manner feeling may be positive or negative. Predicting or recalling feelings are included. 2. **Praises or Encourages :** Praises or encourages student action or behaviour. Joke that releases tension, not at the expense of another, individual nodding head or saying "Um hm" or "go on" are included. 3. **Accepts or uses idea of Student :** Clarifying, building or developing ideas suggested by a student. As a teacher

TALK		brings more of his own ideas into play, if shifts to category five. 4. **Asks questions :** Asking a question about content or procedure with the intent that a student answers.
	Direct Influence	5. **Lecturing :** Giving facts or opinions about content or procedure : expressing his own ideas, giving his own explanation or citing an authority other than a pupil. 6. **Giving Directions :** Directions, commands or orders to which a student is expected to comply. 7. **Criticising or justifying Authority :** Statement intended to change student behaviour from non-acceptable to acceptable pattern; bawling some one out, stating why the teacher is doing, what he is doing, extreme self-references.
PUPIL TALK	**Response**	8. **Student Talk-Response :** Talk by student in response to teacher. Teacher initiates the contact or solicits student statement or structures the situation. Freedom to express own ideas limited.
	Initiation	9. **Student Talk - Initiations :** Talk by students, which they initiate. Expressing own ideas; initiating a new topic; freedom to develop opinions and a line of thought, like asking thoughtful questions, going beyond the existing structure.
SILENCE		10. **Silence or Confusion :** Pauses; short periods of silence and confusion in which communication

Method of Observation

The observer sits in the classroom in the best position possible to hear and see both the teacher and the taught. At the end of every three seconds period, he decides the category that represents the communication event and makes a note of it. This procedure of recording the events goes on at a rate of twenty or twenty -five observations per minute. These category numbers are noted in sequence of numbers in a column top to bottom so that the original sequence of events is not disturbed. Which the observer has recorded, are written in the same sequence.

Preparation of Interaction Matrix Table

Interaction matrix table is also known as observation Matrix table. It consists of 10 rows and 10 columns. The category numbers.

Consider the Ex : 5, 4, 3 10, 6, 2, 6, 1, 8, 2. Now 10 is added in the beginning and also at the end of the given category numbers. 10 represent silence. Now the observations written as 10, 5, 4, 3, 10, 6, 2, 6, 1, 8, 2, 10 and pairs are formed out of the above categories. The pairs would be as (10, 5), (5, 4), (4, 3), (3, 10), (10, 6), (6, 2) (2, 6), (6, 1), (1, 8), (8, 2) and (2, 10).

All these numbers are tabulated in the matrix as frequencies, taking one pair at a time. The first number indicates row and second number indicates the column. The matrix table prepared according to the above procedure is presented hereunder :

Category	1	2	3	4	5	6	7	8	9	10	Total
1								1			1
2						1				1	2
3										1	1
4			1								1
5				1							1
6	1	1									2
7											0
8		1									1
9											0
10					1	1					2
Total	**1**	**2**	**1**	**1**	**1**	**2**	**0**	**1**	**0**	**2**	**11**

Advantages

1. The analysis of matrix is so dependable that even a person not present when observations were made, could make accurate inferences about the verbal communication and get a mental picture of the classroom interaction.
2. Different matrices can be made and used to compare the behaviour of teachers at different age levels,.sex, subject matter, etc.
3. This analysis would serve as a vital feedback to the teacher or teacher trainee about his intentions and actual behaviour in the classroom. The supervising or inspecting staff can also easily follow this system.
4. It is an effective diagnostic tool to measure the social emotional climate in the classroom.

Limitations

The Flanders System of Interaction Analysis is undoubtedly of great value in modifying the behaviour of the teachers but it has few limitations.

1. Only the fully trained observers can make use of it successfully.
2. Going beyond the ten point categories is not possible though actually there is need.
3. It does not give any value judgments in terms of good or bad.
4. A few activities of classroom teaching do not find any place in this system.
5. Equating silence with confusion is inappropriate.

2. What is individualized instruction. Explain it concept, Need, principles and Techniques.

Ans : Individualized instruction : It is method of instruction

in which ; content, instructional technology and learning are based on the abilities and interest of each learner (or) student.

Need of Individual Instruction :

1. Improve listening practice of students
2. It is used to design circular based on student performance.
3. To educate the student in efficienal manner in short period of time.

Ways of individualized instruction :

The ways to individualized instructions are

1) Content of subject
2) Process
3) Products

Advantages of individual instruction :

1. To focus each and every student academic performance, personality development and strengths.
2. To focus on regular exercise of academic subjects.
3. Students can easy learn and improve their subject on speedy way.
4. Students (or) learners can gain quality of education from teachers (or) instructers.

Limitations of Individual instructions :

1. Need to spend more time on each student.
2. Time management is complex in individual instructions.
3. Maintain each student record in classroom leads to more complexity.

3. Define the term Programmed Learning ? What are the principles of programmed learning ? Mention the types of programmed learning ?

Programmed Learning : Prgrammed Learning is one of the important innovations in the Teaching - Learning process.

Programmed Learning represents an effective strategy in the teaching learning process. Programmed Learning. Instruction emerged out of experimental research on operant conditioning which was formulated by B.F. Skinner and law of effect which was proposed by E.L. Thorndike.

Definitions :

"Programmed Learning is the first application of laboratory technique utilized in the study of the learning process to the practical problems of education" ***- "Skinner".***

Programmed Learning is a systematic, step -by. Steep, self - instructional programme aimed to ensure the learning of stated behaviour" ***- Edgardale***

Characteristics of programmed learning :

* Each step in the Learning process is followed Logically.
* The frames are arranged sequentially.
* It is highly individualized.
* Goals to be achieved are also evaluated and stated specifically.
* It maximises the rate and depth of learning, Foster understanding and enhance the motivation of the students.

Principles :

a) **Principle of small steps :** A programme is made-up of a larger number of small, easy to take steps. A student can proceed from knowing very little about a subject to mastery of the subject by going through a programme.

b) **Principle of active responding :** Programming provides opportunity for learner to respond frequently.

c) **Principle of self-pacing :** Programmed Learning is a technique of individualized learning.

d) **Principle of student testing :** In programmed Learning the student is tested continuously.

e) **Principle of immediate confirmation :** The psychological phenomenon of reinforcement is the basis of this principle.

Types/Modes of presentation and development of programmed Learning:

1. Linear programming (or) Extrinsic programming :

B.F skinner is the originator of linear programming. It is also called a single track programme. Every learner starts from the initial frame and ends at the terminal frame following the same sequence. Subject matter is broken down into very small steps and each steps is presented in proper sequence.

Principles :

* Principle of small steps.
* Principle of active responding.
* Principle of minimum errors
* Principle of knowledge of results.

2. Branching or intrinsic programming :

Branching programming was developed by Norman A. crowder It is also known as crowderian model.

Basic assumptions :

* It is based on the possibility of detecting and correcting errors.
* By his ability the learner controls the exact sequence that he will take from the available tracks in the programme.
* The learner learns better if matter is presented in totality.
* Multiple choice items help more in the learning process.

3. Mathetics :

Mathetics type of programming was formulated by Thomas. F. Gilbert and the term is derived from the greek word "Mathein" - Meaning to learn". In mathetics style, an exercise is the technical unit of learning instead of a frame of a linear style.

Principles :

a) Principle of chaining : The chain of stimulus and response is helpful in developing the Mastery of content and determining its structure.

$S_1 \rightarrow R_1 \rightarrow S_2 \rightarrow R_2 \rightarrow \ldots S_n \rightarrow R_n$

b) Principle of Discrimination : The main is deahere is that discrimination of situation of learning Is generated by providing different stimuli having different responses.

$S_1 \rightarrow R_1$

$S_2 \rightarrow R_2$

.

.

.

$S_n \rightarrow R_n$

c) Principle of Generalization : In this type of situation, a group of stimuli emits single response.

$S_1 \searrow$

$S_2 \rightarrow \rightarrow R$

$S_3 \nearrow$

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UNIT - 3
COMPUTER FUNDAMENTALS AND APPLICATIONS

1. What are the different types of computers ?

Types of computers :

Computers is general, are of three types.

1. Digital computer : In digital computers, Mathematical expressions are finally represented as binary digits (0 and 1) and all the operations are done by using these digits at very high rate. The digital computer basically knows only how to add. Remaining operations like multiplication, division and exponentiation etc. are first converted to addition and then calculated.

2. Analog computer : Analog is a Greek word which means establishing similarities between two quantities. The main advantage of this computer is that here all the calculations are done in parallel and hence it is very fast. This computer has its own limitation. Its accuracy is poor.

3. Hybrid computer : Hybrid computer is a combination of computer using all the good qualities of both the analog and digital computers. In such a computer, some calculations are done in analog portion of the computer and some are done on digital portion of the same computer.

Computer - classification based on application

Different types based on this classification are 1) General purpose computers 2) Special purpose computers 3) Machine - in built computers 4) High Intelligence Machine computers 5)

knowledge information processing systems.

Computer - classification based on size and shape :

According size and shape, computers are classified as :

1) Super computers 2) Maniframe computers 3) Mini computers 4) Micro computers

2. Explain the characteristics of computers

Computers computers display following characteristics to grater or lesser extent depending on their type and application. Computers have assumed their importance due to the following qualities.

1. Speed :

Computers makes calculations at very fast rate.

2. Accuracy and Degree of Reliability :

It works on the basis of electronic pluses due to which there is no chance of making mistakes.

3. Memory :

The computer have got super in- built and auxiliary memory systems. A computer can store a great amount of information in it. The idea of computer having memory was in capsulated by the great scientist Johnvon Neumann in 1946.

4. Integrity :

It is the ability to take in and store a sequence of Instructions for obeying. Such a sequence of instructions is called a program and must be written in the language of computer.

5. Power of making logic :

The ability to use simple logical rules to make for their own

internal control or for the control of some external activity.

6. Versatillity :

The ability to communicate with other systems and adopt several modes like audio, visual, graphics etc.

7. Superiority of manufacture :

Computer hardware is manufactured with superior most materials by superior most process.

3. What are the components of computers. Explain ?

Ans : Computer components are mainly divided into two types they are 1) Hardware 2) Software

1. Hardware : Input device, output Derive and storage devices

1. Computer Input devices :

Input devices are 1) Key board 2) Mouse 3) Floppy Disc 4) Camera 5) Light pen 6) Scanner 7) compact Disc 8)Card Reader etc. These are used to give input to the computer.

1.2 Computer output Devices :

Based on given input CPU process the data return the output in the form of output devices. They are :

1) Monitor 2) Printer 3) Inkjet printer 4) Laser printer 5) Speakers

1.3 : Computer storage Devices : Storage devices are used to store the data in computer or lake the backup of stored information. Storage devices are 1) Hard Disks 2) Floppy Disks 3) DVD's 4) Magnetic optical Disk etc.

2. Software : A collection of tiny program's are called software. Software is use to give the instructions to processor to

perform specific task. This software mainly classified into system software and application software.

System software : Used to operate the system called system software.

Application software : Used to perform specific works by computer is called application software.

II. Memory : The computer programs and data are stored in this memory.

Types of memory :

1. Primary Memory :

RAM and ROM are primary memory RAM is called as tempory memory (or) Volatile memory ROM is permanent memory

2. Secondary memory :

It is also called as permanent memory.

3. Cache Memory :

Act as intermediate between processor and primary memory. To speed up the computer processing speed.

III. Computer maintenance : Maintenance is very important increase the life time of computer in the following ways:

1. Cleaning 2) Data 3) Software 4) Security

4. What are the concept, applications and challenges of computers networks. Internet Email and Digital space.

Ans : I. Concept, Applications and challenges of computer Network:

Computer Network : A collection of computers that are

inter connected by Communication channel and also allows uses to sharing the Data and resources. It is called computer network.

Functions of computer network : Computer network can be used in many ways like.

a) Sharing network and resources, information

b) Security and privacy

c) Providing communication

d) Update information

By using above function user can share their information and resources and update the regularly information about data (or) Resources. And also having feature like security and privacy for maintain the confidential data.

Challenges of Computer network :

1. In computer networks there may be possible of mistakes during the data sharing.
2. There may possible of hacking and virus attack.
3. In computer network there may be possible of data theft.

II. Concept, Applications and challenges of Internet :

Internet is network between computer that are located in all over the World. By using internet users can easily access the information from Globaly. This information may be any form like videos, pictures or documents etc. Mr. Prof. Klicn rock is the father of Internet. He developed this communication for American Miltary research. Later it way developed and spread all over the world.

Internet Equipment : For using internet used need all these below equipments.

1) Computer 2) Telephone (or) Internet USB 3) Brouser

Advantage of Internet

1. By using Internet there is strong communication between any two people (or) any two organization (or) In between employees of same organization.
2. We can access any information from e-library through internet.
3. We can Acess music files, images, videos from internet.
4. We can download are required softwares to our computer.
5. It can be used for job-searching for unemployed people.

Internet Challenges :

1. There may be crash of computer software by using internet through virus.
2. There may be possible of Hacking.
3. There may be possible of wasting the time by spending on social network.

Email and Digital space : Electronic mail is way to speed (or) quick message transformation between two people (or) organizations.

Ray Tomlinson is father of E-mail. He invented this in 1971 in USA.

Digital space : The space which reserve for data storage in website is called digital space. We can easily access this storage data from any where through internet.

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UNIT - 4
ICT ENRICHED LEARNING EXPERIENCES

1. What are the applications of ICT for class room experiences.

Ans: ICT can used by any people like students and teachers. It can be used for examing expressions for students and learners. Learners can used word documents, Images, slides and web pages for communication purpose. It can be visual experience in class room learning for students. Students can improve their synthesis, analysis, problem solving skills in class room by class room ICT. Students can learn the education by audios and videos easily by using ICT. It gives great experience to the learners. By using ICT students can gain real time experience of subject.

2. What are the application and use of multimedia Educational software for class room situations ?

Ans : Multimedia for class room programme in many ways like E-learning, E-teaching, virtual classrooms, smart boards etc.

1. Course ware :

Course ware is formed by the combitation of course and software. It realised in the form of package consists of lessons, Text and teaching learning material. It can be acess in on line in the form of HTML web pages and pdf files.

2. Study aids :

The combination of learning and organisation is called study aids. It act as a tutor.

3. Class room aids :

By using this aid we can use the projector for teaching purpose on white board. "Teach to the future". is example for class room aid software.

4. Assessment software

"Question mark" PPA-2 are the assessment softwares used

in educational institutions in visual environment.

5. Reference software.

Dictionaries, thesis, encyclopedia are reference software that are available in Market.

6. Custom platforms :

Child laptops gaming consoles, electronic books are custom plat form software.

7. Operating systems :

For ICT customised operating systems are designed. They are edubunto students portos used for teaching in class rooms.

8. Softwares for specific educational purposes.

1) K verbos 2) Mixed Genius 3) Ktouch, Typing web are used for educational purpose

3. What is the use of internet based media for teaching learning enrichment ?

Ans: We can use the internet for class room teaching in easy way. By following ways.

1. E-Learning :

Student can learn the knowledge from internet is called E-Learning or web based learning.

2. Virtual classroom :

In virtual classroom teachers can use video, audio based courses, animation courses to students for learners purpose.

3. Web pages :

By using the web pages we can as acess education course content, assignment, project and reference books.

4. Forums :

By using Top class web crossing or tom bacig forms teachers can share their academic information and teach distance education to the students.

5. Port folios :

By using port folios teachers share their project works in Internet.

6. Power point :

Students can acess power point that are designed by the teaching experts by using internet.

7. Blogs :

In Blogs we can share the information to the students and teachers on the educational related information.

8. Google+

Google+ is a web based application used to post the course content academic projects and their individual views. (academic)

9. Twitter

Twitter is online Social Net works media used for Twitts for maximum numbers of 140 letters.

10. Face book

It is also social net working media it can be used by registering our profile and then use.

4. What is collaborative learning ?

Ans : Collaborative learning is based on the view that knowledge is a social construct. Collaborative activities are most often based on four principles :

* The learner or student is the primary focus of instruction.
* Interaction and "doing" are of primary importance .
* Working in groups is an important mode of learning.
* Structured approaches to developing solutions to real-world problems should be incorporated into learning.

Collaborative learning can occur peer-to-peer or in larger groups. Peer learning, or peer instruction, is a type of collaborative learning that involves students working in pairs or small groups to discuss concepts, or find solutions to problems. This often occurs in a class session after students are introduced to course material through readings or videos before class, and /'or through instructor lectures. Similar to the idea that two or three heads are better than one, many misunderstandings and clarifying misconceptions. For more on peer learning, visit The Official Peer Instruction Blog.

Group work or collaborative learning can take a variety of forms, such as quick, active learning activities in class or more involved group projects that span the course of a semester.

5. What is the impact of collaborative learning or group work?

Research shows that educational experiences that are active, social contextual, engaging, and student-owned lead to deeper learning. The benefits of collaborative learning include:

* Development of higher-level thinking, oral communication, self-management, and leadership skills.
* Promotion of student - faculty interaction.
* Increase in student retention, self-esteem, and responsibility.
* Exposure to and and an increase in understanding of divers perspectives.
* Preparation for real life social and employment situations.

6. What are some examples of collaborative learning or group work activities?

Stump your partner

* Students take a minute to create a challenging question based on the lecture content up to that point.
* Students pose the question to the person sitting next to them.
* To take this activity a step further, ask students to write down their questions and hand them in. These questions can be used to create tests or exams. They can also be reviewed to gauge student understanding.

Think-pair-share / Write-pair-share

* The instructor poses a question that demands analysis, evaluation, or synthesis.
* Students take a few minutes to think through an appropriate response.

* Students turn to a partner (or small groups) and share their responses. Take this a step further by asking students to find someone who arrived at an answer different from their own and convince their partner to change their mind.
* Student responses are shared within larger teams or with the entire class During a follow up discussion.

Catch-up

* Stop at a transition point in your lecture.
* Have students turn to a partner or work in small groups to compare notes and ask clarifying questions.
* After a few minutes, open the floor to a few questions.

Fishbowl debate

* Ask Students to sit in groups of three.
* Assign roles. For example, the person on left takes one position on a topic for debate, the person on right takes the opposite position, and the person in the middle takes notes and decides which side is the most convincing and provides an argument for his or her choice.

* Debrief by calling on a few groups to summarize their discussions.

Case study

* Create four to five case studies of similar difficulty.
* Have students work in groups of four or five to work through and analyze their case study.
* Provide 10-15 minutes (or adequate time to work through the case).
* Walk around and address any questions.
* Call on groups randomly and ask that students share their analysis. Continue until each case study has been addressed.

Team - based learning (adapted from L.K. Michaelsen in Davis, 2009, p.215)

* Start a course unit by giving students some tasks to complete, such as reading or lab assignments. Consider assigning these to be completed before class.
* Check students comprehension of the material with a quick multiple-choice quiz. Have students submit their answers.
* Assign students to groups and have them review their answers with group members to reach consensus. Have each group submit one answered quiz.
* Record both the individual student assessment scores and the final group assessment score (both of which are used toward each student's course grade).
* Deliver a lecture that specially targets any misconceptions or gaps in knowledge the assessments reveal.
* Give groups a challenging assignment, such as solving a problem or applying a theory to a real world situation.
" For more information on this strategy at teeambasedlearning.org.

Group problem solving

There are may instructional strategies that involves students working together to solve a problem, including inquiry based learning, authentic learning, and discovery learning. While they each have their own unique characteristics, they all fundamentally involve.

* Presenting students with a problem.
* Providing some structure or guidance toward solving the problem. Note, however, that they are the student - centered activities in which the instructor may have a very minimal role.
* Reaching a final outcome or solution.

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UNIT - 5
APPLICATION OF COMPUTERS IN EDUCATION

1. What is the concept of e-Learning concept.

Ans : ACT has been designated the permanent organisation to administer and lead the e-learning capability with the support of NATO and national bodies. In addition, Joint Force Trainer (JFT) assumes responsibility of providing e-Learning support to education and training institutions. E-Learning is continuously evolving and will benefit from new technologies and software tools. By implementing education and training with rich media support, scenarios, simulation and blended learning techniques, e-Learning courses will provide an effective and efficient learning environment. JET will continue working to reshape the education and training landscape using e-Learning technologies.

e-Learning represents an innovative and powerful means of delivering this requirements. It offers increased access to education and training opportunities through on -demand availability, cost savings, self-paced courses, consistent and accurate delivery, condensed instruction and opportunities for collaboration. Using e-Learning ensures NATO and partner staff have access to high-quality education and training that can be tailored to individual needs, enabling personnel to effectively contribute to the NATO mission.

e-Learning can be applied in a variety of ways and will be integrated into the mainstream of education and training programmes. NATO currently offers over 300 hours of quality,

relevant education and training in a wide variety of subjects and has trained over 33,000 students. Such programmes includes international Security Assistance Force (ISAF) pre-deployment training and a comprehensive operations planning programme.

2. Briefly explain virtual classroom.

Ans : A virtual classroom is an online learning environment. The environment can be web-based and accessed through a portal or software -\ based and require a downloadable executable file.

Just like in a real-world classroom, a student in a virtual classroom participates insynchronous instruction, which means that the teacher and students are logged into the virtual learning environment at the same time.

Many schools and businesses have rolled out virtual classrooms to provide synchonrous distance education. Virtual classroom software applications often employ multiple synchronous technologies, such as web conferencing, video conferencing, livestreaming, and web-based Voip to provide remote students with the ability to collaborate in real time. To enhance the educational process, applications may also provide students with asynchronous communication tools, such as message boards and chart capabilities.

3. What is a SMART Board ? What are the benefits, and drawbacks of smart board.

Ans: * A Smart board is an interactive, electronic whiteboard that can enhance instruction and learning.

* The first SMART Board was introduced in 1991.
* It was created by SMART technologies.
* SMART Board is the first interactive white board.

* Over 800,000 SMART Board interactive white boards have been installed and are used mainly in education; however they have also been used in military, government and corporate settings.

Benefits

* Allows the teacher (and students) to interact.
* Teachers do not have to be stuck behind a computer (or have their back turned away from the class) instead they can be at the front of the classroom interacting with the screen and the students.
* Can control any computer application through the board,.
* Can use any of the markers (4 colours) to write in digital ink over applications, web pages, applications, or videos.
* There is an eraser !
* Can take and save notes for future reference !
* Can convert handwriting to text !@

Students are able to use the SMART Board as well ! It will make them want to participate in lessons and discussions.

Draw backs

* Could be hard to write on.... your body could cast a shadow on the screen, where you are writing.
* Might be hard to write neatly.
* They may be very hard to move it they are installed on a wall.

* Just like with any type of technology, there are glitches, which in a classroom could cause problems.
* Very Expensive !

Why use of smart board:

* It is great for teaching lessons !
* If a student is absent, you can email them the notes from the day.
* Depending on what you are using the SMART Board for, it can be colourful ..... students LOVE and respond to colourful things
* Different learning styles will enjoy the SMART Board.
* It is a great tool for all ages students !
* Interactive !
* You can play movies on it (you don't have to use a T.V. or pull down a projector screen).
* Since the screen is large, everyone will be able to see it ! No one will complain because they can't see !
* Kids love technology and electronics !
* Technology is changing ! If you are able to and fortunate enough to have a SMART Board, why not use it ? It is an amazing tool to use!

4. What are the characteristics of web Technology ?

Ans : The following web 2.0 characteristics take the common technologies together and describe well what is new about them."

Participation : Everfy aspect of Web 2.0 is driven by participation. The transition to Web 2.0 was enabled by the

emergence of platforms such as blogging, social networks and free image and video uploading, that collectively allowed extremely easy content creation and sharing by any one. Participatory architecture is an

Architecture where user can add or edit value to the application according to their requirement. Contrary to the traditional web which was some what one-sided, with a flow of content form the provider to viewer, Web 2.0 allows the users tc actively participate online.

Standards : Standards provide an essential platform for Web 2.0. Common interfaces for accessing content and applications are the glue that allow integration across the many elements of the emergent web.

Decentralization : Web 2.0 is decentralized in its architecture, participation and usage. Power and flexibility emerges from distributing applications and content over many computers and systems, rather than maintaining them on centralized systems. It is about communication and facilitating community.

Openness : The world of Web 2.0 has only become possible through a spirit of openness whereby developers and companies provide open, transparent access to their applications and content.

Modularity : Web 2.0 is the antithesis of the monolithic. It emerges from many, many components or modules that are designed to link and integrate with others, together building a whole that is greater than the sum of its parts. Users are able to pick and choose from a set of interoperating components in order to build something that meets their needs.

User Control : A primary direction of Web 2.0 is for users to control the content they create, the data captured about their

web activities, and their identity. This powerful trend is driven by the clear desires of participants.

Identity : Identity is a critical element of both Web 2.0 and the future direction of the internet. We can increasingly choose to represent out identities however we please, across interactions, virtual worlds and social networks. We can also own and verify our real identities in transactions if we choose.

Web 2.0 technologies and its implementation for the libraries

Web 2.0 encompasses several technologies and services, viz.

Blogs : It is a powerful two-ways based tool. A blog is a website where library users can enter their

5. What is plagiarism ? What are the types of plagiarism ?

Ans : Plagiarism is the act of presenting the words, ideas, images, sounds or the creative expression of others as your own.

Two types of plagiarism

1. **Intentional**
   - Copying a friend's work
   - Buying or borrowing papers
   - Cutting and pasting blocks of text from electronic sources without documenting
   - Media "borrowing" without documentation
   - Web publishing without permissions of creators
2. **Unintentional**
   - Careless paraphrasing

* Poor documentation
* Quoting excessively
* Failure to use you own "voice"

Rationale for academic integrity

* When you copy you cheat yourself. You limit your own learning.
* The consequences are not worth the risks !
* It is only right to give credit to authors whose ideas you use
* Citing gives authority to the information you present
* Citing makes it possible for your readers to locate your source
* Education is not an"us vs. them" game ! It's about learning to learn!
* Cheating is unethical behaviour

Ethical and legal standards :

What is ethic ?

* Fairness, justice, equity, honesty, trustworthiness & equality
* Subjective

Major threats

* Faster computers & Networks
* Sophisticated telecommunications & routers
* Massive distributed databases
* Eases of access to information & knowledge base
* Transparency of software

Code of ethics

* A declaration of principles and beliefs that govern how employess of a corporation are to behave
* Inspirational & disciplinary
* All-compassing & stable over time

Legal standards

Challenges : Commerce

6. Define open Education Resources (OER) and Write about its concept and significance?

Ans : Defining the concept

At its core, OER denotes a very simple concept, the nature of which is first legal, but they largely economic; it describes educational resources that are openly available for use by educators and students, without an accompanying need to pay roylties or licence fees. A broad spectrum of frameworks is emerging to govern how OERs are licensed for use; some licences allow only copying while others make provision for users to adapt the resources that they use. The best known of these are the Creative Commons licences. They provide legal mechanisms to ensure that authors of work can retain acknowledgement for their work while allowing it to be shared, can seek to restrict commercial activity if they so wish, and can aim to prevent people from adapting work if appropriate (although this may be difficult to enforce in legal terms at the margins). A more detailed discussion of licensing options is presented in Appendix one.

Significance

Open Education Resources (OER) are important for many reasons. One reason, as the above chart illustrates, is the cost of textbooks, which is rising at a rate higher than most other consumer

goods. Given the rising cost of tuition at many institutions, many students simply cannot afford to buy textbooks. OER is a way to make sure every student has access to course materials, with cost taken out of the equation.

OER also allows faculty to create material that is customized for their classes. Where most textbooks will be have their strengths and weaknesses, OER material allows a faculty member to pull only strong material into their class.

OER also represents an opportunity to have one's own materials enhanced. By allowing material to be modified by other faculty around the world, an OER creator has the chance to see material used in ways never imagined. New sections and chapters can be added and enhanced creating a work stronger than the original. That type of exposure and collaboration is simply not possible with material that lives on a local computer or only in print.

Finally, OER gives faculty a wide variety of material to draw upon for their own classes. Imagine being given a last -minute assignment for an unfamiliar class - a text book might help get you up to speed but what about the syllabus ? The assignments ? The exams ? OER gives a wide variety of materials from which to build a class without having to start from scratch.

OER is important because it provides affordable material to students, allows faculty to enhance their own work, and provides faculty with content for classes.

This short video illustrates the benefits of OER. Creative commons ad licensing will be discussed in the next module.

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