

COMPUTER EDUCATION

BTC 3rd SEM

Patron : Secretary, Basic Education and State Project Director,
Education for all Uttar Pradesh, Lucknow.

Direction : Sri Sarvendra Vikram Bahadur Singh, Director SCERT,
U.P. Lucknow

Guidance –Sri Ajai singh, joint Director SSA, SCERT, U.P. Lucknow.

Co-ordination : Sri Sanjay Kumar Upadhyay, Principal, DIET
G.B.Nagar.

Writing : Dr. Shalini singh, Lecturer DIET G.B.Nagar.

Computer Composing : Mahesh Kumar, Shivani Gupta,
Pratibha, Yadvendra.

Information and Communication Technologies

INTRODUCTION- Today, from the time we awaken in the morning to the time before we sleep, we are surrounded by media, such as newspapers, radio, television, and computers. Sometimes we are not even aware about them. All these media come under the overall umbrella of what are known as today's ICTs. Knowing and using ICTs is Important in today's fast changing knowledge society, but we very often are confused about what these media are.

Information and Communication Technologies (ICTs) are often associated with the most sophisticated and expensive computer-based technologies. But ICTs also encompass the more conventional technologies such as radio, television and telephone technology. While definitions of ICTs are varied, it might be useful to accept the definition provided by United Nations Development Programme (UNDP): 'ICTs are basically information-handling tools- a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICTs of radio, television and telephone, and the 'new' ICTs of computers, satellite and wireless technology and the Internet. These different tools are now able to work together, and combine to form our 'networked world' – a massive infrastructure of interconnected telephone services, standardized computing hardware, the internet, radio and television, which reaches into every corner of the globe' When we talk of ICTs, we refer not only to the latest computer and Internet based technologies, but also to simple audio visual aids such as the transparency and slides, tape and cassette recorders and radio; videocassettes and television; and film. These older and more familiar technologies are referred to under the collective heading of "analogue media" while the newer computer and Internet based technologies are called the "digital media".

Basically ICT is the technology required for information processing, in particular, the use of electronic computers, communication devices and software applications to convert, store, protect, process, transmit and retrieve information from anywhere, anytime.

1.INFORMATION- Information refers to the knowledge obtained from reading, investigation, study or research. The tools to transmit information are the telephone, television and radio. Information is knowledge and helps us to fulfil our daily tasks.

2.COMMUNICATION -Communication is an act of transmitting messages. It is a process whereby information is exchanged between individuals using symbols, signs or verbal interactions. Communication is important in order to gain knowledge.

3.TECHNOLOGY -Technology is the use of scientific knowledge, experience and resources to create processes, products that fulfil human needs. Technology is vital in communication.

The acronym ICT (Information and Communication Technology) includes all technical means that are used for handling information and facilitating communication, including computers, network hardware, communication lines and all the necessary software. In other words, ICT is comprised of information technology, telephony, electronic media, and all types of process and transfer of audio and video signals, and all control and managing functions based on network technologies.

Definitions of ICT-

According to Ifueko Omoigui Okauru- ICT is the digital processing and utilisation of information by the use of electronic computers. It comprises the storage, retrieval, conversion and transmission of information. (2011)

ICT (information and communications technology – or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, health care, or libraries. The term is somewhat more common outside of the United States. **(Margaret Rouse 2005)**

According to Daintith, John- A branch of engineering dealing with the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data.

The study, design, development, application, implementation, support or management of computer-based information systems. The term is commonly used as a synonym for computers and computer networks, but it

also encompasses other information distribution technologies such as television and telephones. (Chandler, Daniel; Munday, Rod, August 2012)

Margaret Rouse goes further to explain ICT as applying to software, and not only hardware as seems to be the case in the other definitions. This difference isn't so obvious, as one can argue that, in order for the equipment mentioned in the other definitions to serve their purpose, software (or an engine) is needed to run them.

All the definitions share a similar notion that, information has to be generated and shared. They also assert that, such information must be digital or electronic. The definitions generally do not restrict ICT to only computers, they mention telecommunications equipment such as mobile phones, printers, scanners etc as well.

Conclusively, ICT is a general term, which describes the process of creating, modifying, storage, transmission of information, in varied formats, between humans and machines alike globally, using several different electronic technologies, to achieve an outcome (be it recreational, or otherwise.)

Information and Communications Technology (ICT) has an important role in the world since we are now in the information age era. The lack of appropriate information at the right time will result in low productivity, low quality research works, and waste of time to pursue information and even to do research which actually others had done or in other countries. Nowadays ICT cannot be separated with our daily needs and has a great impact in our everyday lives.

The Application and benefits of Information and Communication Technologies (ICT) in Education-The role of ICTs in the education is recurring and unavoidable. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in education. By observing current activities and practices in the education, we can say the development of ICTs within education has strongly affected on

- a. What is learned?
- b. How it is learned?
- c. When & where learning takes place
- d. Who is learning and who is teaching.

ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities. Teachers will act as virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences of students. Also it helps them to think independently and

communicate creatively. It also helps students in building successful careers and lives, in an increasingly technological world.

1-Enabled Personalized Learning- Learning is not a 'one size fits all.' Technology can offer a personalized learning environment that is tailored to students' individual differences: progression level, pace, interests, learning style, and background. Technology provides the support and challenge required to keep students engaged and motivated and empowers them to reach their potential.

2-Measurable Teacher Outcomes- ICT has brought about many dramatic changes in how teachers teach and how students learn. Educators use ICT to design and assess learning activities, to communicate with students, parents, and community members, as well as to participate in professional development experiences.

3-Greater Community Involvement-Technology can help support parents' and community member's involvement in student learning by using methods such as school websites, email, blogs, text-messaging, etc. to help keep interested parties aware and engaged in their local education system.

4-Supporting Economic Development- Research suggests that implementation of ICT in the classroom, along with the transformation to learner-centred instruction, supports economic and social benefits throughout a country.

5-Enhanced Teamwork & Cooperation - ICT tools foster an anytime-anywhere environment of increased student cooperation and teamwork. Similarly, technology implementation leads to increased collaboration and teamwork among teachers who are planning ICT integration in their curriculum.

6-Bridging the Gender Gap- ICT has minimized gender differences in academic achievement. Lower achieving boys have improved performance and achieved higher test scores with ICT. Other studies recognize that ICT helps improve the performance and attitudes of female students in traditionally male-dominated fields.

7-Sound Educational Investment - Given scarce budget dollars of most schools, districts, and ministries of education, ICT is one of the key investments that should be made that benefits teachers and students.

8-Increased Global Competition- Investing in technology helps schools perform better. The increasingly important role ICT plays in economic development and the rapid rate at which it changes makes it difficult for schools and countries which do not invest in technology to compete globally.

9-STEM Learning- The products and services of the future will depend on engineers, scientists, and technology experts to create them. ICT assists students in collaborating with peers and experts, designing products, collecting and analyzing performance data, and, in many cases, actually helping them build products.

10-Increased Global Collaboration- ICT tools allow students to connect and communicate with classrooms all over the world, resulting in increased global awareness and a sense of cultural identity.

11-Improved Academic Reporting- Effective ICT integration provides educational institutions with a variety of tools that community members and educators can use to analyze data such as demographics, achievement, and budgets. This feedback and analysis loop helps keeps schools accountable to their community.

12-Fostering Workforce Development- In both developed and developing countries, non-skilled jobs are disappearing. The rapid changes brought about by technology demand that workers learn not only how to use specific tools, but also how to implement strategies for lifelong learning in the workplace.

Scope of ICT in Education

It is well accepted that Information and Communication Technologies (ICT) have an immense potential to impact education – of children, of teachers, of teacher educators and others, and provide newer and more effective ways of mitigating some of the challenges being faced by the educational system of our country. These technologies distinguish themselves by their rapid evolution, continuously changing the modes of engagement with them. A decade long infusion of computers, and more recently ICT, has

demonstrated varying impacts on learning. Besides, ICT are also among the most expensive of investments, causing much confusion regarding practices that have the best returns on investments. Under these circumstances, the recent National Policy on ICT in School Education is a beacon which directs future implementations.

Teaching Learning Process- Effective learning is possible by five sensory means. According to psychological study human can grasp 80% knowledge visually, 15 % through hearing & 5% with the rest of the sensory items. So it becomes necessary to present the content by attractive means. Computer technology helps us to provide rich presentation. To provide rich presentation, it is necessary to use the various components like:-

1. Text matter presentation
2. Animation presentation
3. Graphic presentation
4. Audio presentation
5. Video presentation

Computer Aided Teaching has become popular now a days.

Publication- The notes, printed text books can be digitized with the help of computer technology. Many e-books are available on websites developed by different publishers. Encyclopaedias are also available on internet.

Evaluation- ICT can help in evaluation process that is Online Results, tests Feedback, Software Progress reports etc.

Research- ICT can make sharing data concerning various researches easy, in addition to myriad other benefits with the help of - Search engines, libraries, Internet, Wikipedia etc.

Administration- Administration process can be smoothed out with developing ICTs and all records and registers would be much easier to maintain, for example - Employees register, Library record, dead stock register, Progress reports, Students register, Placement cell, Alumni record, School campus record, Finance & accounts, Timetable.

Scope of ICT in future

1. To harness the modern information and communication technologies for all. The potential of these technologies must be exploited in order to broaden the reach of basic education, particularly in the direction of the excluded and underprivileged groups; and to enhance and improve classroom teaching.
2. To replace costly, rigid and culturally alienating educational structures with less expensive delivery systems that are more flexible, more diversified and universally affordable, without ever sacrificing quality.
3. To develop basic education services accessible to all, including the poorest, illiterate adults, children outside the school system – whether at work, in the street or refugees – through a strategy involving both the formal education system and all the alternatives offered by the non-formal sector. Basic education must become a field which is free of all forms of exclusion and discrimination.

These are the ways of achieving an education that is authentic, accessible to all without exclusion or discrimination, modern and universally affordable, will provide each individual with the keys to diversified and virtually limitless knowledge.

Evaluation

MCQ -

ICT stands for-

1. Information computer technology.
2. Information and communication technology.
3. Integrated computer technology.
4. Idea, communication and teacher.

ICT is used to enhance knowledge of –

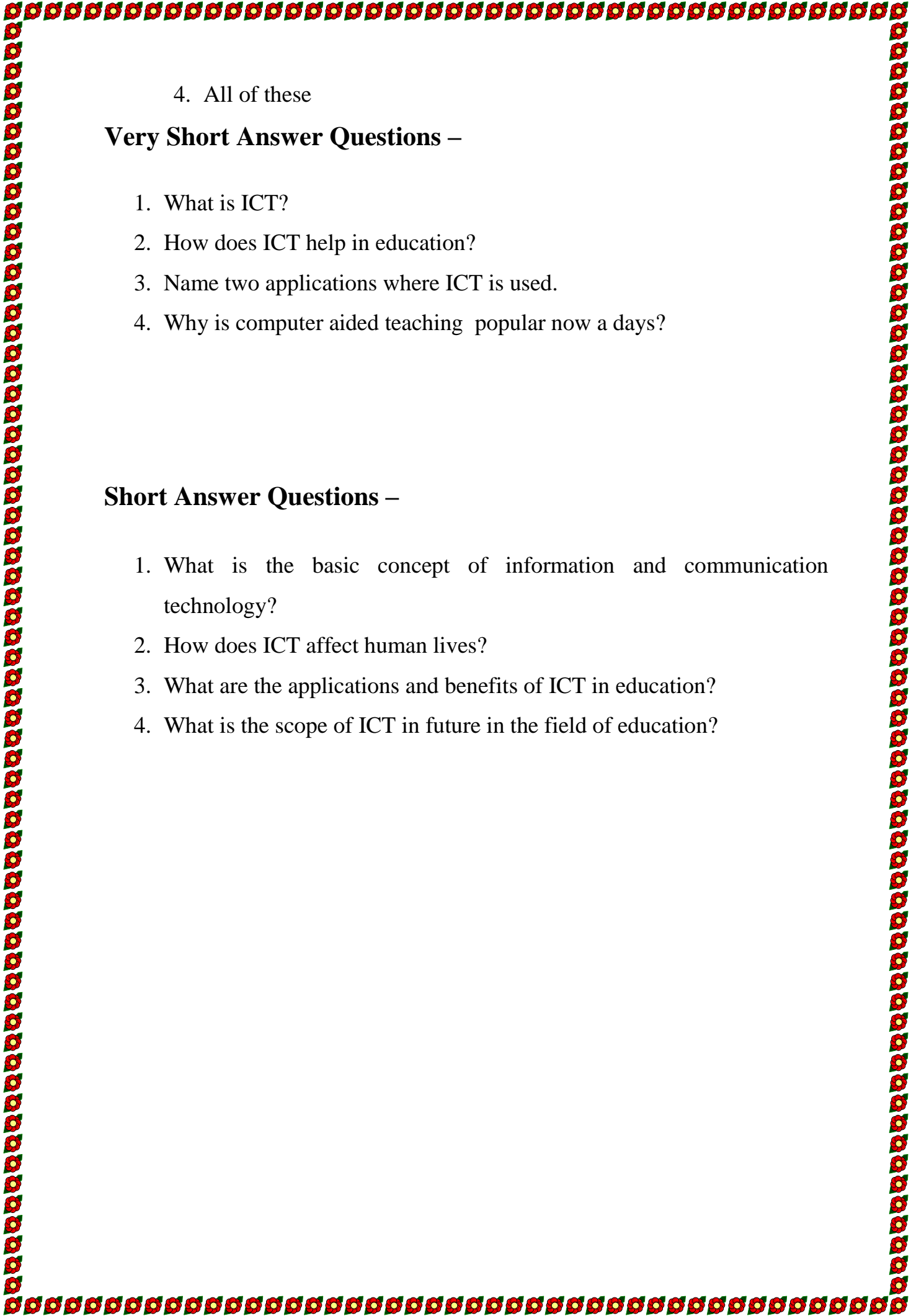
1. Students
2. Teacher
3. Both
4. None

ICT is used in the field of –

1. Business
2. Medical
3. Education
4. All of these

Which of the following processes in education does ICT not help in?

1. Evaluation
2. Administration
3. Personality development

- 
4. All of these

Very Short Answer Questions –

1. What is ICT?
2. How does ICT help in education?
3. Name two applications where ICT is used.
4. Why is computer aided teaching popular now a days?

Short Answer Questions –

1. What is the basic concept of information and communication technology?
2. How does ICT affect human lives?
3. What are the applications and benefits of ICT in education?
4. What is the scope of ICT in future in the field of education?

ICT for Teachers

Gurukul System of Education was in vogue in India. The main characteristics of Gurukul System were dedicated and knowledgeable teachers, individualized and learner centre teaching, and self-motivated students eager to learn. This system changed due to increase in number of students. Consequently, the number of teachers increased. Some teachers are born but rests of them have to be given rigorous training so as to develop required competency to become a teacher. Teachers have been conscious about the quality of their teaching. To enhance the quality, some teachers use teaching aids, like, charts, models – static & working, specimen, slides, etc. because teachers are given training both in preparation and use of Audio-visual Aids. It is a known fact that majority of schools do not have appropriate teaching aids related to the school content. So teachers have no facility to use A – V Aids during teaching. The use of A – V Aids get further restricted due to unmotivated persons becoming teachers. Central Government realized the need of improving quality of education through the use of Television wherein most competent teacher teaches the topic with the help of most appropriate teaching aids. This helped in improving the quality of teaching in schools having no teacher to teach the subject, less competent teacher, schools having poor or no facility of teaching aids, etc.

Programmes offered through television were produced by different State Institute of Educational Technology (SIET) in different languages. Even the Video Instructional Materials were produced and made available to teachers; still majority of schools did not make use of them. Some of the reasons were no facility of TV and VCR, no electricity, TV and VCR not in working condition, not incorporated in the time table, lack of initiation on the part of teacher and Principal, etc. Along with A – V Aids, the print media has to go a long way in improving the quality of teaching and learning. Format in which the textbooks were written was not beneficial for teachers and students. Researchers started thinking and using different Theories of Learning for developing Instructional Material. This gives birth to Programmed Learning Material based on Operant Conditioning Theory of Learning. Programmed Learning Materials were compared with that of Lecture Method or Conventional Method. Programmed Learning Material alone as well as in combination with other methods for teaching different subjects was found to be effective in terms of achievement of students.

USE OF ICT BY TEACHERS- Teachers commonly use ICTs for administrative tasks. Teachers most often use ICTs for ‘routine tasks’ (record

keeping, lesson plan development, information presentation, basic information searches on the Internet).

Types of usage of ICTs correlate with teacher pedagogical philosophies. Teachers who use ICTs the most—and the most effectively—are less likely to use traditional ‘transmission-method’ pedagogies. Teachers who use more types of software tend to practice more ‘constructivist’ pedagogies.

Use of ICT for knowledge enhancement

Modern developments in information and communication technologies (ICT) provides exciting possibilities to enhance the quality of education. Interactive education software, open access digital libraries, and cheaper and more intuitive technology may facilitate new forms of interaction between students, teachers, education employees and the community and enhance the quality of education by making it more accessible.

ICT has the capacity to enhance the learning process and facilitate communications within education institutions and between educators and learners but it must be used in education institutions under the supervision of qualified well-trained professionals with the expertise in pedagogy and in education to ensure that its impact does not damage or undermine the learning process or the development of learners.

Internet Access

Internet access is the process that enables individuals and organizations to connect to the Internet using computer terminals, computers, mobile devices, sometimes via computer networks. Once connected to the Internet, users can access Internet services, such as email and the World Wide Web. Internet service providers (ISPs) offer Internet access through various technologies that offer a wide range of data signalling rates (speeds).

The Internet provides instant availability of vast stores of information in real time. Prior to the availability of the Internet, one seeking education often had to be physically near the information he wished to learn. This involved walking to a school, listening to a teacher and having access to a library. With the Internet, learners have instant access to information on virtually any subject.

The Internet has become a very useful tool to gain access to an ocean of information. It is an opportunity and privilege to be living in an era where the Internet is easily accessible. Teenagers are able to use this valuable resource for completing projects, researching information, to view pictures and videos of places and people at the click of a button.

The Internet has proved to be of immense assistance in the academic area. Educators and parents should encourage students to use the Internet and guide them to the right resources that are available online. Parents and educators should be aware that the Internet is an open source environment where information of every kind is easily accessible.

Using the Internet in teaching and learning will enable the teacher to:

- Access information instantly and present it to the students in an engaging manner using a variety of teaching methodologies.
- Provide educational opportunities for students based on their abilities and interests and different learning styles.
- Model the safe and responsible use of the Internet in daily classroom life.
- Access classroom-ready resources suitable for the curriculum and assessment.
- Communicate with peers and subject experts and overcome the isolation of a classroom.
- Create and share learning resources and extend learning outside the classroom.
- Avail of online continuing professional development courses.

Using Website

One of the most common reasons for us to be hanging around on the Internet every day is the abundance of information it is loaded with. The information is generated by multiple sources and is carefully organized in the form of files and web pages, which, when grouped together to form a single entity, become a website.

There are several education related websites available on the Internet from which students can benefit greatly. These websites help students in developing their mathematical skills, vocabulary skills, digital resources provided by world renowned educators and experts. Parents and educators should make the best use of the resources available on the Internet to support the educational development of their children. The following are some of the education related websites - Wikipedia, MIT Open Courseware, TED-Ed, Science Net Links, Coursera, Vocabulary.com etc.

Using Search engines

A search engine is a set of programs which are used to search for information within a specific realm and collate that information in a database. Search engines help people to organize and display information in a way which makes it readily accessible. Search engines allow people to access online information on the Web. As such, search engines provide great benefits to individuals, organizations, and society. The World Wide Web is different from anything we have known. Considering the amount of information that's available from a good search engine, it's similar to having the Yellow Pages, a guide book and a road map all-in-one. Search engines can provide much more information than just the URL of a Web site.

A search engine is a searchable database which collects information on web pages from the Internet, and indexes the information and then stores the result in a huge database where it can be quickly searched. The search engine then provides an interface to search the database.

The lives of teachers, professors and students are hard enough as it is with demanding hours, straining subject matter and endless research. There are many great search engines that can ease the strain of these pressures. Examples: Google, Alta Vista, Yahoo.

Communicating with experts

For teachers, the Internet is an electronic gateway to learning resources and experiences otherwise unavailable; no matter how specialized an area of interest may be, there is someone on the Internet who shares the interest and has identified or developed useful resources. It is through interaction with other people, ideas, and new experiences that we all construct new knowledge, and the power of the Internet is in its capacity to enable interactions with people over great distances and link people with distant informational resources. In essence, the Internet provides a way to break out of the school walls and engage students with people and resources scattered around the world. There are times when each of us needs help finding specific information, learning new concepts, completing assignments, or making plans. On the Web, personal assistance is only a click away.

Accessing CD-ROMs and DVDs

The CD-ROM format is a popular medium for software, music, and data file. C-D ROM and DVDS has the ability to store sound files, graphics, video sequences. The two major differences between CD-ROM and DVD are that DVD has a much higher capacity for storing data (between 4Gb and 7Gb) and

the data can be accessed at very high speeds. This makes it a versatile medium capable of interactive use. Students using this type of learning tool are able to work at their own pace and capability. Having access to the Internet has created new tools for software developers and by combining CDs and DVDs along with an Intranet the resources can be used over the whole of a networked environment; this in turn helps teachers who are not computer literate and who are not able to solve computer-operating problems.

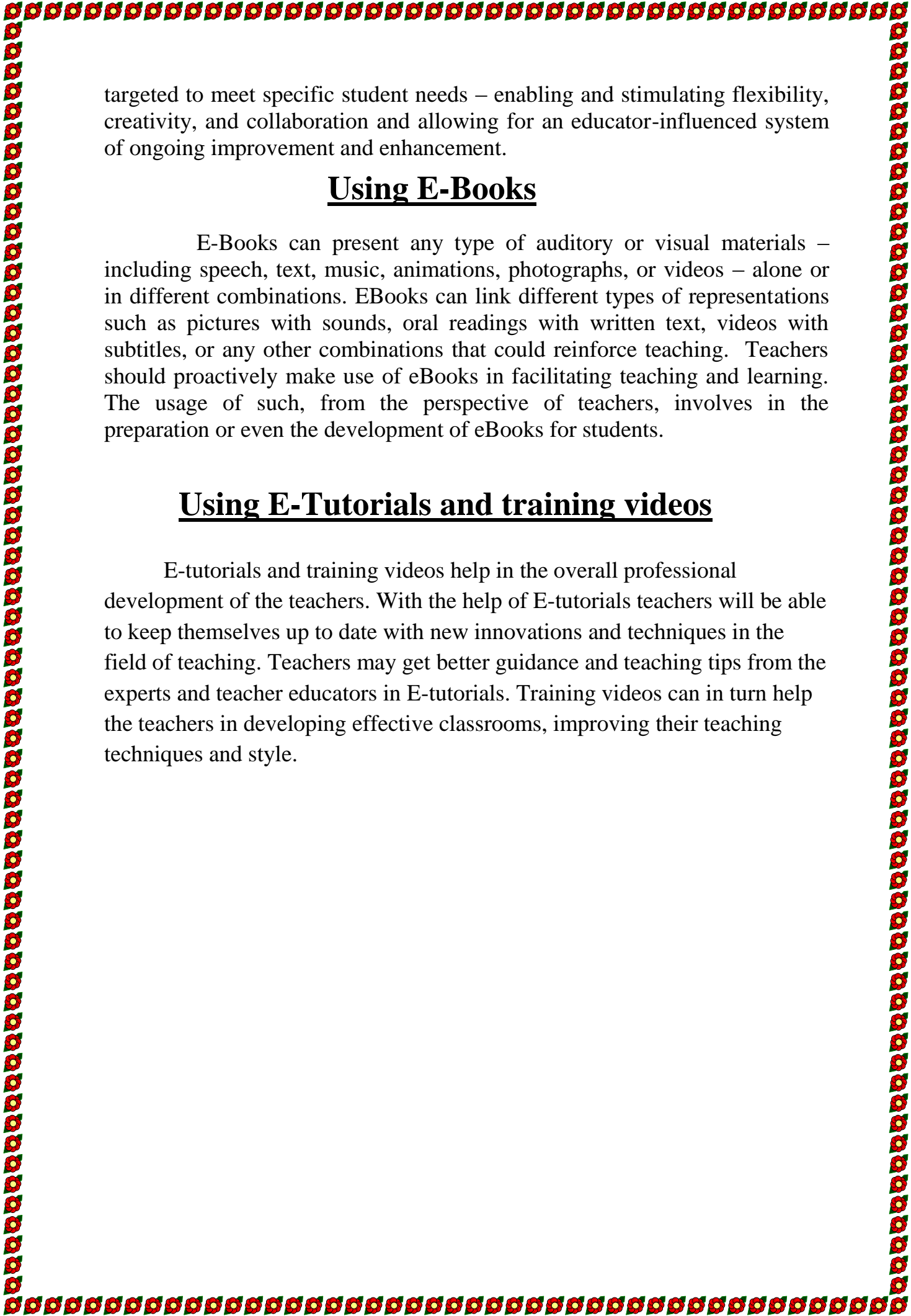
DVD-ROM resources are motivating for students. DVD technology opens a visual window to content far richer than print. DVD-ROMs transform educational content into an engaging world of stories, facts, ideas, pictures, and sounds that students can actively explore. The active engagement that DVD-ROMs offer students is educationally crucial, particularly in the "computer game" era. Additionally, DVD resources make teachers better able to deliver information using the kinds of media that mirror how students really think and learn. The versatile variety of media available on a DVD-ROM is particularly valuable, since teachers can't always know up front which approach will work for each student. DVD-ROMs also free the teacher from the primary responsibility of delivering information, providing increased opportunities to facilitate, encourage, discuss, and mentor.

Technology has filtered into education fairly slowly and in order for the CD-ROM DVD to continue as a viable means in instructional use, educators must maximise it to its full potential and become confident in using the applications.

Accessing Digital Content

Digital content is any type of content that exists in the form of digital data. Digital content comes in many forms, from text (e-books) and audio and videos files (training videos, tutorials etc.), to graphics, animations, and images. Typically, digital content refers to information available for download or distribution on electronic media.

Increasingly, teachers all over the world are using technology, including digital curricular resources and tools, to enhance students' classroom experiences and improve learning outcomes. Recognizing student needs, interests, and preferences, teachers employ digital content to transform their instructional practices, including, in some cases, by independently creating, modifying, and sharing learning materials. Empowering teachers to engage in the development, refinement, and use of digital materials – including lesson plans, videos of instructional practice, and formative assessments – holds real promise for improving student learning experiences and teacher effectiveness. Unlike traditional textbooks and other printed materials, digital content can be updated in a more timely manner and better



targeted to meet specific student needs – enabling and stimulating flexibility, creativity, and collaboration and allowing for an educator-influenced system of ongoing improvement and enhancement.

Using E-Books

E-Books can present any type of auditory or visual materials – including speech, text, music, animations, photographs, or videos – alone or in different combinations. EBooks can link different types of representations such as pictures with sounds, oral readings with written text, videos with subtitles, or any other combinations that could reinforce teaching. Teachers should proactively make use of eBooks in facilitating teaching and learning. The usage of such, from the perspective of teachers, involves in the preparation or even the development of eBooks for students.

Using E-Tutorials and training videos

E-tutorials and training videos help in the overall professional development of the teachers. With the help of E-tutorials teachers will be able to keep themselves up to date with new innovations and techniques in the field of teaching. Teachers may get better guidance and teaching tips from the experts and teacher educators in E-tutorials. Training videos can in turn help the teachers in developing effective classrooms, improving their teaching techniques and style.

USE OF ICT FOR EDUCATION DELIVERY

ICT provides opportunities to access an abundance of information using multiple information resources and viewing information from multiple perspectives, thus fostering the authenticity of learning environments. ICT may also make complex processes easier to understand through simulations that, again, contribute to authentic learning environments. Thus, ICT may function as a facilitator of active learning and higher-order thinking. ICT environment improves the experience of the students and teachers and to use intensively the learning time for better results. The ICT environment has been developed by using different software and also the extended experience in developing web based and multimedia materials. ICTs have an important role to play in changing and modernizing educational systems and ways of learning. For advanced delivery of information to students, teachers are adopting tools like smart boards, PowerPoint presentations, animations, videos etc.

Smart classes and digital blackboards

Over the last few decades, everything has changed in our lives with the all pervasive intervention of technology, so have our classrooms. The conventional black-board has made way for digital equipment, making the learning process not just more colourful but also more interesting. A smart classroom is a classroom that has an instructor equipped with computer and audio-visual equipment, allowing the instructor to teach using a wide variety of media. These include smart interactive white board, DVD's, PPT's and more, all displayed through a data projector.

Smart class brings about a complete transformation in classrooms. The Science teacher while explaining how a DNA replicates is able to show the class a 3D animation of the DNA replication process on a large screen. She can explain the fine points of the process, zoom in to show the relevant visuals freeze and annotate when and where she needs to emphasize.

The teachers gain complete attention and interest of every child in the class. Every child gets a visual input on how things happen and the concepts are well understood and internalised. This results in faster and accurate understanding of the concepts in class and helps improve the overall academic performance of students. Teachers are able to keep students engaged in the learning process.

Creating and using slide presentation with projector

Slide presentation software such as PowerPoint has become an ingrained part of many instructional settings, particularly in large classes and in courses more geared toward information exchange than skill development. PowerPoint can be a highly effective tool to aid learning. Potential benefits of using presentation graphics include:

- ✓ Engaging multiple learning styles
- ✓ Increasing visual impact
- ✓ Improving audience focus
- ✓ Providing annotations and highlights
- ✓ Analyzing and synthesizing complexities
- ✓ Enriching curriculum with interdisciplinary
- ✓ Increasing spontaneity and interactivity

Educational A-Vs modules-

Audiovisual education or multimedia-based education (MBE) is instruction where particular attention is paid to the audio and visual presentation of the material with the goal of improving comprehension and retention.

Children learn best by observing and copying the behaviours of adults. It is therefore evident that learning is more effective when sensory experiences are stimulated. These include pictures, slides, radios, videos and other audiovisual tools. According to the Webster dictionary, audio-visual aids is defined as ‘training or educational materials directed at both the senses of hearing and the sense of sight, films, recordings, photographs, etc. used in classroom instructions, library collections or the likes’. A-V modules can be both animated and non animated.

The goal of audio-visual aids is to enhance teacher’s ability to present the lesson in simple, effective and easy to understand for the students. Audiovisual material make learning more permanent since students use more than one sense. It is important to create awareness for the state and federal ministry of education as policy makers in schools of the need to inculcate audiovisual resource as main teaching pedagogy in curricula. The outcome is to promote the audiovisual material in schools because they lack the resource to produce them. The visual instruction makes abstract ideas more concrete to the learners. This is to provide a basis for schools to understand the important roles in encouraging and supporting the use of audiovisual resource. In addition, studies have shown that there is significant difference between the use and non-use of audiovisual material in teaching and learning.

Benefits of A-V modules for education delivery are –

- ✓ Strengthen teachers' skills in making teaching learning process more effective
- ✓ Attract and retain learners' attention
- ✓ Generate interest across different levels of students
- ✓ Develop lesson plans that are simple and easy to follow
- ✓ Make class more interactive and interesting
- ✓ Focus on student-centred approach

Using online e-labs, e-library and e museum

e-Labs are virtual and interactive lessons in various science subjects, such as physical science, chemistry, life science, and Earth science that include a live video conference event.

A digital library is a special library with a focused collection of digital objects that can include text, visual material, audio material, video material, stored as electronic media formats (as opposed to print, microform, or other media), along with means for organizing, storing, and retrieving the files and media contained in the library collection. Digital libraries can vary immensely in size and scope, and can be maintained by individuals, organizations, or affiliated with established physical library buildings or institutions, or with academic institutions. The digital content may be stored locally, or accessed remotely via computer networks. An electronic library is a type of information retrieval system.

E museum is a web publishing tool kit that lets us take our collections online without complicated coding. It works with TMS to pull images, artist information, description and any other type of collection data from our database and deliver that data online. In TMS we simply group and tag our records for public access and the information appears on our collection website or internet.

All these electronic platforms help the teacher in explaining the practical as well as theory portion of the study material.

Delivering Distance Education through Digital Online Service mode

UNESCO defines distance education as “an educational process and system in which all or a significant proportion of the teaching is carried out by someone or something removed in space and time from the learner.”

In the World today, Open and Distance Education (ODE) system has been gaining widespread popularity over the years. The explosive growth of Open and Distance Learning (ODL) institutions and their scale of operations

has been facilitated by continuous experiments and technological innovation in the field of ODE. In the light of these developments there is a need to assess the quality of the ODL in Globalisation. Quality Assurance plays a pivotal role for highlighting the quality of both the learners as well as the teaching process in ODL. The improved access and availability of educational technology has enabled more students to participate in the learning process. New Educational Technologies have paved the way to a new learning techniques unconstrained by time and space. E-Learning, mobile technologies, communication and information access, and personal learning environments are becoming mainstream and , as a result of the learning process is shifting away from teacher centred to the learner centred. Efficient delivery of such content may be carried out through Internet technology, Satellite or Microwave links as well as fiber optics.

The Teaching – Learning talents for imparting education to learner as chosen by various CCIs and Open Universities vary from institutions to institutions. The print material is the master media, which is supplemented and complemented by audio, video lessons, Radio and Television programmes. To provide education to the heterogeneous learners the multi-media is inevitable in distance learning. Globalization and today's Information and Communication Technology have given a new expression to Open and Distance Learning. In order to strengthen the Distance Mode sharing of information among the Open and Distance Learning institutions and maintenance of the quality study material and quality audio/video programmes is in vogue among the institutions. For example the IGNOU's MBA Study Material is shared by the other Open Universities and CCIs in India.

The role played by various organizations to maintain the quality and standards in Open and Distance Learning institutions in India.

- a) University Grants Commission (UGC):
- b) Distance Education Council (DEC)
- c) National Assessment and Accreditation Council (NAAC):
- d) All India Council for Technical Education (AICTE):
- e) National Council for Teacher Education (NCTE):
- f) The Andhra Pradesh State Council of Higher Education (APSCHE):

EDUSAT

EDUSAT was India's first fully fledged educational satellite. Its first operational flight took place on 20th September 2004 from the Satish Dhawan space centre Sriharikottah . EDUSAT is mainly indented to meet the demand for an interactive, satellite based distance education system for the country. It is collaborative project of the MHRD, IGNOU and the ISRO. The EDUSAT is specially configured for an audio visual medium, employing a digital interactive class room and multimedia multi-centric system. It is primarily meet for providing connectivity to the school, college and higher levels of education and also to support non formal education, including developmental communication. It can provide interactive and cost effective education. It can also provide consistency to information. It is an audiovisual medium and interactive multimedia facility which opens up many possibilities like online teachings, video conferencing etc. at all levels of education, from primary schools to professional courses.

Teleconferencing & Videoconferencing

- **Teleconferencing** means meeting through a telecommunications medium. It is a generic term for linking people between two or more locations by electronics. There are at least six types of teleconferencing: audio, audio graphic, computer, video, business television (BTV), and distance education.
- **Video conferencing** is an effective way to use one teacher who teaches to a number of sites. It is very cost effective for classes which may have a small number of students enrolled at each site. In many cases, video conferencing enables the institution or a group of institutions to provide courses which would be cancelled due to low enrolment or which could not be supported otherwise because of the cost of providing an instructor in an unusual subject area. Rural areas benefit particularly from classes provided through video conferencing when they work with a larger metropolitan institution that has full-time faculty. Through teleconferencing, institutions are able to serve all students equitably.

Prasar Bharti.

Prasar Bharati is a statutory autonomous body established under the Prasar Bharati Act and came into existence on 23.11.1997. It is the Public Service Broadcaster of the country. The objectives of public service broadcasting are achieved in terms of Prasar Bharati Act throughAll India

Radio and Doordarshan, which earlier were working as media units under the Ministry of I&B. Prasar Bharati is India's largest public broadcasting agency. It is an autonomous body set up by an Act of Parliament and comprises Doordarshan Television Network and All India Radio, which were earlier media units of the Ministry of Information and Broadcasting. The Parliament of India passed the Prasar Bharati Act to grant this autonomy in 1990, but it was not enacted until 15 September 1997.

Dr. A. Surya Prakash is the current chairperson of Prasar Bharati and Jawhar Sircar is the CEO.

The primary duty of the Corporation is to organise and conduct public broadcasting services to inform, educate and entertain the public and to ensure a balanced development of broadcasting on radio and television. It is paying special attention to the fields of education and spread of literacy, agriculture, rural development, environment, health and family welfare and science and technology.

Radio service Gyanvani

Gyan Vani is an educational FM radio station in several cities of India. Gyan Vani stations operate as a media cooperative with the day-to-day programmes being contributed by various educational institutions, NGOs, government and semi-government organizations, UN agencies, ministries such as Agriculture, Environment, Health, Women and Child Welfare, Science & Technology, etc. besides national level institutions such as NCERT, NIOS and state open universities. Each Gyan Vani station has a range of about 60 km and covers an entire city including the adjoining rural areas. The medium of broadcast is English, Hindi or language of the region. Gyan Vani FM radio uses stereophonic FM transmitters, and professionals operate the radio stations. Each nodal centre is provided with media from Indira Gandhi National Open University's (IGNOU) Electronic Media Production Centre. The centre serves purposes of production, dissemination and transmission of educational material. The facilities available at the media production centre are shared with various educational and training institutions, state open universities, central and state government ministries or departments, non governmental organizations, corporate bodies and other sectors.

The programming mainly aims at local educational needs in the local language. The help of local educational institutions and educationists is sought in programme production. Live programmes with phone-in interactivity is a notable feature of Gyan Vani stations, which are particularly popular with the student population.

Television service Gyan darshan

Television constitutes an important medium widely used to disseminate information to its viewers. It has the unique feature of combining audio and visual technology, and thus considered to be more effective than audio media. It serves multiple purposes of entertainment, information and education. Besides performing motivational function it helps in providing discovery learning and cognitive development of its viewers. Because of its better accessibility, it can bring learning materials to the masses in more direct, effective and personal way than other educational media.

In India, since the inception of TV network, television has been perceived as an efficient force of education and development. With its large audience it has attracted educators as being an efficient tool for imparting education to primary, secondary and university level students.

Ministry of Human Resource Development, Information & Broadcasting, the Prasar Bharti and IGNOU launched Gyan Darshan (GD) jointly on 26th January 2000 as the exclusive Educational TV Channel of India. IGNOU was given the responsibility to be the nodal agency for unlinking/ transmission. It started out as a two-hour daily test transmission channel for students of open and conventional Universities. Gyan Darshan is a bouquet of satellite-based TV channel devoted to educational and developmental needs of the society it include programmes for schools, teacher enrichment education, open and distance learning, vocational courses and courses for disadvantaged sections of India.

GD-1: The main educational channel catering to all sectors of education.

GD-2: Interactive channel consisting of live teleconferences, telecounselling sessions etc.

GD-3: Technology education channel consisting of programmes pertaining to engineering topics. The programmes are sourced from various IITs.

GD-4: The fourth channel in the bouquet of Gyan Darshan Channels, Vyas brings quality education to the students pursuing higher education. Provision also exists for starting some more channels, planned to be dedicated to agriculture, vocational education and school education respectively. The Gyan Darshan channels can be accessed through a local cable operator or through a dish antenna equipped for digital reception on C-band from INSAT 3C.

Query Handling through chat Application and Emails

Query handling is the process in which we can solve a doubt through various applications like as GoggleChat, GTalk Whatsapp etc.

Electronic mail is the process in which we can help a student through online method. For this a person should keep an email account with himself.

eTutions through online Portal

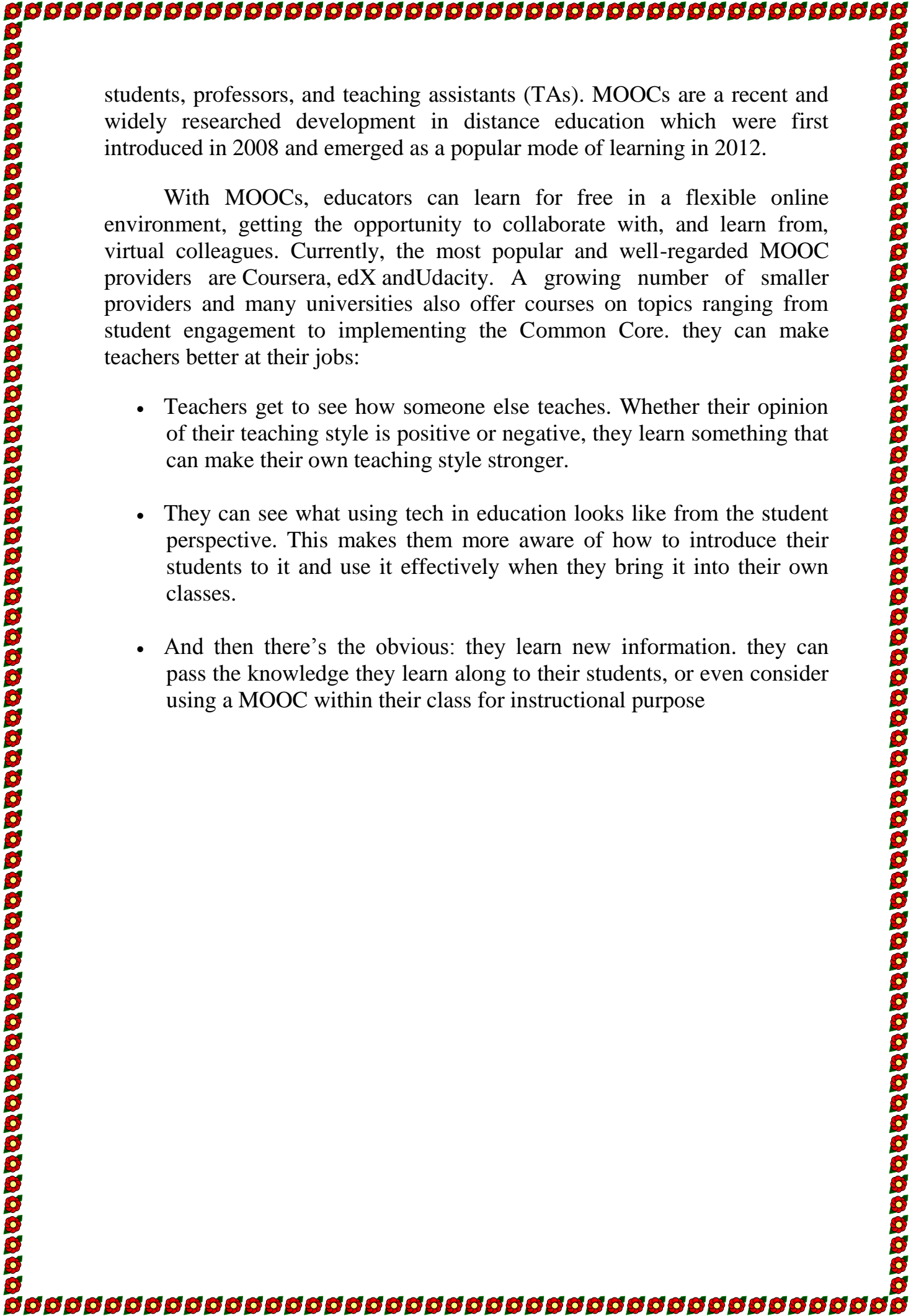
E Tutions is the method in which a teacher helps a student through the internet. E Tutions has been involved in providing online tutoring services globally for various School Grade, University Under Graduate and Post Graduate Students.

Online tutoring is the process of tutoring in an online, virtual environment or networked environment in which teachers and learners are separated by time and space. Online tutoring, as a reflection of the diversity of the wider Internet, is practiced using many different approaches and is addressed to distinct sets of users. The distinctions are in online content and interface, as well as in tutoring and tutor-training methodologies. Definitions associated with online tutoring vary widely, reflecting the ongoing evolution of the technology, the refinement and variation in online learning methodology, and the interactions of the organizations that deliver online tutoring services with the institutions, individuals, and learners that employ the services. This form of Internet service is a classical micropublishing situation.

Massive Open Online Course (MOOC)

A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. massive open online course (MOOC) is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials such as videos, readings and problem sets, MOOCs provide interactive user forums that help build a community for the students, professors, and teaching assistants (TAs). MOOCs are a recent development in distance education

Massive Open Online Course is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among



students, professors, and teaching assistants (TAs). MOOCs are a recent and widely researched development in distance education which were first introduced in 2008 and emerged as a popular mode of learning in 2012.

With MOOCs, educators can learn for free in a flexible online environment, getting the opportunity to collaborate with, and learn from, virtual colleagues. Currently, the most popular and well-regarded MOOC providers are Coursera, edX and Udacity. A growing number of smaller providers and many universities also offer courses on topics ranging from student engagement to implementing the Common Core. they can make teachers better at their jobs:

- Teachers get to see how someone else teaches. Whether their opinion of their teaching style is positive or negative, they learn something that can make their own teaching style stronger.
- They can see what using tech in education looks like from the student perspective. This makes them more aware of how to introduce their students to it and use it effectively when they bring it into their own classes.
- And then there's the obvious: they learn new information. they can pass the knowledge they learn along to their students, or even consider using a MOOC within their class for instructional purpose

Evaluation

MCQ –

Website is –

1. Collection of web pages
2. Collection of themes
3. Collection of movies
4. None of these

Smart class consists of –

1. Digital board
2. Books
3. Good Teacher
4. Good furniture

This is an example of a search engine –

1. Website
2. Facebook
3. Yahoo
4. Gmail

Which one is not an example of digital content –

1. CD
2. DVD
3. Videos
4. Class room

Which one is the medium of delivering distance education –

1. Gyanvani
2. Gyandarshan
3. EDUSAT
4. All of these

Very Short Answer Questions –

1. Give the name of four search engines?
2. What is smart class?
3. What is Email?
4. Give some examples of educational websites?
5. What is an eBook?
6. What is MOOCS?

Short Answer Questions –

1. How can a teacher enhance his/her knowledge through ICT?
2. How does Internet help a teacher in his/her class room transaction?
3. What are the benefits of educational websites?
4. What is digital content and how can these contents help a teacher?
5. In what ways can ICT be used for education delivery?
6. What is EDUSAT?

ICT for students

The direct link between ICT use and students' performance has been the focus of extensive literature during the last two decades. Several studies have tried to explain the role and the added value of these technologies in classrooms and on student's performances. Since the Internet revolution, there has been a shift in the literature that focuses more on the impact of online activities: use of Internet, use of educative online platforms, digital devices, use of blogs and wikis, etc

There is widespread belief that ICTs can and will empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centred, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners to develop their creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills.

Use of ICT in knowledge enhancement

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research (Yusuf, 2005). ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in the global village.

The use of ICT will not only enhance learning environments but also prepare next generation for future lives and careers. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools (Reeves & Jonassen, 1996), the influence of the technology on supporting how students learn will continue to increase.

Any use of ICT in learning settings can act to support various aspects of knowledge construction and as more and more students employ ICTs in their learning processes, the more pronounced the impact of this will become. Teachers generate meaningful and engaging learning experiences for their students, strategically using ICT to enhance learning. Students enjoy learning, and the independent enquiry which innovative and appropriate use of ICT can foster.

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world.

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through.

“Our students will leave school as capable independent learners, able to use ICT confidently, creatively and productively, able to communicate effectively, able to work collaboratively, and to critically evaluate, manage and use information.” NCCA ICT

Vision Integrating the Internet across the curriculum will enable students to:

- Access vast amounts of dynamic, interactive multimedia resources instantly.
- Communicate and collaborate locally and globally.
- Explore situations and places individually, in small groups, or as a whole class that would not otherwise be accessible or available in the classroom.
- Develop skills related to critical thinking, problem solving and group work.
- Create, publish and share their work to a real audience worldwide.
- Access school related resources outside of school hours.
- Develop an awareness of, and comply with, responsible and ethical use of the Internet.
- Implement the school’s acceptable use policy

Developing e content through internet

Wide varieties of digital materials which are of educational significance are available online. Some of the quality materials which are available free of cost or with minimum restrictions can be used, re-used and modified by teachers and students for their teaching and learning. As textbooks are too expensive, the students are switching from textbooks to digital course materials. These materials provide both teachers and students a greater interactivity and social collaboration. One of the materials which can be designed and developed used, re-used and distributed is e-content. E-content is becoming popular because of its flexibility of time, place and pace of learning. E-content includes all kinds of content created and delivered through various electronic media. E-content is available in many subjects and

almost all levels of education. It can be used by wide variety learners with diverse needs, different backgrounds, and previous experience and skill levels. It can be shared and transmitted easily and promptly among unlimited number of users around the world. Teachers, students and others get benefited by the use of well designed and developed e-content.

Electronic content (e-content) which is also known as digital content refers to the content or information delivered over network based electronic devices or that is made available using computer network such as internet. According to Oxford dictionary 'e-content is the digital text and images designed to display on web pages'. E-content is basically a package that satisfies the conditions like minimization of distance, cost effectiveness, user friendliness and adaptability to local conditions.

Electronic content (e-content) which is also known as digital content refers to the content or information delivered over network based electronic devices or that is made available using computer network such as internet.

Most common and popular model used for creating e-content is the ADDIE model. This abbreviation stands for the five phases involved in the model. They are analyze, design, develop, implement and evaluate.

Accessing education through radio and TV services

Radio- Radio is a powerful mass medium used in education for disseminating information, imparting instruction and giving entertainment. It serves with equal ease in both developed and developing countries. It spreads information to a greater group of population thereby saving time, energy, money and man-power in an effective way. Radio, in reality, has been used extensively as an educational medium both in developed and developing countries since beginning. Its educational programmes supported in a wide range of subject areas in different countries. Educational radio has also been employed within a wide variety of instructional design contexts. In some cases it is supported by the use of printed material, by local discussion group, and by regional study centers. It is sometimes so designed to permit and encourage listeners' reaction and comments. Evaluations are also carried out with the feedbacks received.

Three main advantages of radio:

1. Improved educational quality and relevance
2. lowered per student educational costs
3. Improved access to education, particularly for disadvantaged groups.

Radio has the advantage of permitting the teaching of subjects in which classroom teachers are untrained or lacking certain knowledge sets. Another benefit for multi-grade classroom use is that radio can provide instruction for one group of students, whilst the teacher is occupied with another. Radio can also bring new or previously unavailable resources into the classroom, thereby greatly enhancing student learning. As a medium that can be listened to in the privacy of one's home or room, radio is often the preferred choice for those seeking information on culturally taboo topics.

some major educational radio projects in India:

- The School Broadcast Project was commissioned in 1937 to focus on elementary school students.
- Adult education and community development project (Radio Forum: 1956), served residents of 144 villages in the vicinity of Poona, Maharashtra state, which were the main beneficiaries.
- Farm and Home Broadcast Project, which commenced operation in 1966, targeted farmers and those living in rural towns and villages.
- University broadcast project, launched in 1965, targeted university students.
- Language Learning Programme, launched in 1979-80, provided instruction in Hindi as a first language to school aged children.
- IGNOU-AIR (All India Radio) was launched in January 1992 in collaboration with IGNOU, AIR stations of Mumbai, Hyderabad and Shillong. IGNOU-AIR broadcasts IGNOU educational programmes to serve students enrolled in both open and conventional universities.
- IGNOU-AIR Interactive Radio Counselling, launched in 1998, targets university students enrolled in both conventional and open programmes of study.
- Gyan-Vani, India's first exclusive educational FM radio network, was launched in 2001 to serve a target audience of university students enrolled in both conventional and open programmes of study.

TELEVISION- In India, since the inception of TV network, television has been perceived as an efficient force of education and development. With its large audience it has attracted educators as being an efficient tool for imparting education to primary, secondary and university level students. Television, which has an important place in mass communication, has a significant role in Higher Education with its special position, the way of presentation and qualities peculiar to itself. Educational Television Technologies are growing more and more important as educational institutions are facing tremendous challenges because of the requirements of

an emerging knowledge-based society, which lead to changes in education and training needs. In access: “distance” and “virtual” institutions allow for growing numbers of students to access higher education The changing face of Television from Block and White to Colour and Enhanced Television with Broadband Technology and the advanced communication technologies have made the world smaller, students living anywhere in the world can have the opportunity of learning from the best of lectures and professors even though never seen them in real life.

Secondary School Television Project (1961)-

This project was designed for the secondary school students of Delhi. With an aim to improve the standard of teaching in view of shortage of laboratories, space, equipment and dearth of qualified teachers in Delhi this project started on experimental basis in October 1961 for teaching of Physics, Chemistry, English and Hindi for students of Class XI. The lectures were syllabus-based and were telecasted in school hours as a part and parcel of school activities.

National Programme On Technology Enhanced Learning (2007) -

National Programme on Technology Enhanced Learning or NPTEL, has produced video recorded lectures of full course length for courses to the engineering colleges.

EDUSAT (2004) -

An exclusive satellite for education with a capacity of 70 dedicated channels.

Educational broadcasts on the national public broadcaster.

Four national and one regional 24 hour dedicated satellite to cable educational television channels.

A 24 hour TDCC channel available for use in teleconference support for education A huge volume of educational video content available for all sectors with the various agencies involved in educational broadcasting.

GYAN DARSHAN (2000) - Gyan Darshan is a bouquet of satellite-based TV channel devoted to educational and developmental needs of the society it include programmes for schools, teacher enrichment education, open and distance learning, vocational courses and courses for disadvantaged sections of India.

DOUBT CLEARING THROUGH ONLINE CHATS **WITH EXPERTS**

At times there could be some topics which the students cannot understand on their own. To understand them conceptually, students will definitely need good guidance. Online doubt clearing classes help students to sort out their doubts, get a quick overview of the content as well as networking opportunity. The students are virtually connected and can get clarifications pertaining to their doubts and difficulties from the academic counselors at the learning-support centers. The facilitating environment comprises audio-video and soft versions of downloadable study material. Information and Communication Technologies are the key binders.

Doubt-clearing classes are said to remove the pre-examination jitters of students to a great extent. However, these classes are not very popular in the city and coaching institutes only offer them on a need basis. A good number of schools do offer them but it is mainly for the slow learners. Students say the school teacher may not be the best person one again wants to approach for a subject query. Students in far flung areas and in schools having dearth of facilities can also get real time access to teachers. They can get help in areas where they are struggling either through live chats or email responses to their queries.

ADVANTAGES-

- Clear your subject doubts face-to-face with experts.
- Classroom experience at home.
- No travel, save time - Study in the comfort .
- Adhering to world-class teaching standards.
- Pinpoint the strengths and weaknesses by academic skill.
- Work one-on-one with professional instructors to focus where needed.
- Get access to the thousands of interesting discussions, doubts & queries.
- Get all doubt cleared 24×7.

ONLINE TESTS THROUGH EXAM WEB PORTALS

In today's world this learning capability is judged by means of examinations. Examinations are every important in judging one's personality. Thus, the need of exams today in universities, schools, colleges and even companies for recruitment purposes. The general paper-pen tests/exams are now slowly being replaced by the online internet based testing system.

Online tests are a new technique to conduct tests through internet. A student can today give test in the any country for globe, thus competing with other global competitors from across the entire world through the new web-based exam systems. The system is consisting of a web server with a database facility. This server is configured with proper security measures. Clients (candidates) can connect through the internet with a web browser (e.g.: Internet Explorer, Mozilla Firefox etc) to the server and take the exam. Examiners too can connect to the server through the internet or through the intranet for setting up papers and to do other related tasks.

- Remote access: Online examinations can be conducted from anywhere with easy access to any part of the world. Since the internet is in the reach of everyone, an online exam can be accessed easily anywhere.
- Fast process: In online examination, checking and result process is completely online performed by a computer that makes it faster.
- High Accuracy: As the results of online exams are checked by a machine, the accuracy level is high. A man can easily make mistakes while checking exam copy, but with a computer, the probability is very low.
- Confidence that a large number of students are all being assessed equally.
- Reduced opportunity for cheating.
- Less marking work, where an entire year's assessment can be made based on the output of students over a 2 or 3 hour period.

This aims to be a powerful tool for eLearning and online education. You can create quiz, question bank, certification examination questions in any language. Useful for school, college, university, teachers and professors for managing question papers and examinations. Recruiting agencies, companies can use it for candidates' skills evaluation by conducting online test. It is very

useful for parents in the academic development of kids to improve their educational skills.

Some websites which conduct online tests are –

- www.classmarker.com
- www.meritnation.com
- www.testyou.in
- www.speedexam.net etc.

E-Tutions (for students)

In e tutions, academic online tutors are available through various virtual learning environments to help learners answer questions on specific subject matter, for research etc. Two necessary assumptions about online tutors is that they possess academic qualification sufficient to educate and that they have specific training to meet the challenges of online communication. Online tutors also need to be aware of the stages learners usually employ in the online environment; these stages determine the kinds of scaffolding (help) that is appropriate for learners at each stage.

1. Access and motivation
2. Online socialization
3. Information exchange
4. Knowledge construction
5. Development

Online tutoring presupposes a self-motivated and independent learner. The learning aspect of tutoring outweighs the teaching aspect. E-moderating usually refers to group online or web-based learning that

- is based on constructivist and social-constructivist principles;
- focuses on using online dialogue and peer learning to enrich learning within the online environment;
- focuses on achieving goals of independent learning, learner autonomy, self-reflection, knowledge construction, collaborative or group-based learning, online discussion, transformative learning and communities of learning, as opposed to delivering online content via a transmission medium; and
- is also a way of adding extra value and service to traditional educational services.

Accessing various competitive exams information online

Websites for Notifications-

If you are planning to appear for various competitive exams, the first step is to know about the date of the exam. For that, there are a few websites which provide timely information about the competitive exams. They give all the details including important dates, news regarding any changes, tips and tricks and related information.

- **<http://www.sarkarinaukricareer.in/>**: This website lists several Government as well as Bank exams. It has recruitment notices and individual bank notifications also. Candidates can find all the information like notification dates, syllabus topics, news, tips and tricks etc., about the IBPS, SSC Exams etc.
- **<http://www.talentsprint.com/bank/notifications.dpl>**: Get latest and past notifications for all SBI, IBPS, SSC, LIC, RRB NTPC exams in simple format without any ads.
- **<http://www.ibpsexam.org/>**: This website lists notifications on IBPS, RBI, SBI and others. It also gives information on LIC AAO Exam. Here you can get unique study materials, syllabus, interview Q&A and tips and tricks.
- **<http://www.indgovtjobs.in/>**: This blog provides information about Government and banking recruitment and exam notifications.
- **<http://www.bankexamsindia.com/>**: This website provides information about upcoming bank jobs in India. It also provides brief details about the exam pattern and study material.
- **<http://www.ibpsexamguru.in/>**: This website has all the details about IBPS PO, Clerk, SBI PO and SBI Specialist Exam. The website also has mock online tests for students to practice. The website also offers several Ebooks for download useful to students.
- **<http://careeradda.co.in/>**: Apart from notifications, this website provides capsules, quiz, notes, motivational stories and forum discussion to help aspirants to prepare for exam and interviews.

Websites Offering Free Exam Content

After knowing the notification dates, comes the preparation stage for competitive exams. One subject that is the most dynamic yet scoring is the Current Affairs and General Knowledge section. For this, students need to have updated knowledge about the latest happening and news around the world. To help students, there are a few websites which give free access to updated current affairs information:

- <http://www.ibpsexamguru.in/>: This website has a dedicated section for Current Affairs.
- <http://www.talentsprint.com/bank/free-prep/quantitative-aptitude.dpl>: provides simple topic specific video, ebook, live class and mock test sections without any ads.
- <http://www.jagranjosh.com/>: This website caters to the aspirants preparing for different competitive exams at various levels. The Current Affairs and the GK section of the website are the most popular among the aspirants. This website covers many sections such as banking exams, SSC etc. One can even find previous year's question papers, study material, tips and strategies to crack the examination.
- <http://www.gktoday.in/>: It is a leading website providing valuable information pertaining to GK and Current Affairs.
- <http://www.indiabix.com/>: This website offers huge repository of subject wise information in the form of questions and answers for Bank, Government and other competitive exams.
- <http://www.gkduniya.com/>: On this website, one can get all the updated current affairs till current date of the current month, as it is quite promptly updated. It has GK question answer as well. This website also gives brief knowledge about aptitude, reasoning, world-wide general knowledge and latest Government jobs.

Job search & enquiries through job portals

Job hunting, job seeking, or job searching is the act of looking for employment, due to unemployment, underemployment,, discontent with a current position, or a desire for a better position. Likewise, job seekers are beginning to use social networking sites to advertise their skills and post resumes. Many big and small organizations are also using Internet as a source of recruitment. They advertise job vacancies through worldwide web. The job seekers send their applications or curriculum vitae (CV) through an e-mail using the Internet. Alternatively job seekers place their CV's in worldwide web, which can be drawn by prospective employees depending upon their requirements.

To facilitate this process, **Employment websites** deal specifically with employment or careers. Many employment websites are designed to allow employers to post job requirements for a position to be filled and are commonly known as job boards. Other employment sites offer employer reviews, career and job-search advice, and describe different job descriptions or employers. Through a job website a prospective employee can locate and

fill out a job application or submit resumes over the Internet for the advertised position.

1. Monster.com – The Monster of Online Job Hunting

Whenever anyone needs access to job markets across the world, Monster is an obvious place to start. Monster has grown into the largest job search site on the Internet, and serves just about every community across the world.

2. Job.com – An Obvious Choice Among Job Search Websites

It offers the ability to search internationally. It also has the ability to publish your resume so that employers can view it.

3. Net Temps – Full or Part Time Jobs

Net-Temps is primarily a website devoted to temporary workers who were looking for the "next gig.". However, it is not a whole lot difference than the rest of the job search websites, except for the fact that it allows job hunters to filter search results by temp or full-time work.

4.Naukri.com - India's No.1 Job Portal

Naukri.com is one of the core businesses of Info Edge India. Naukri.com leads the online job market with 70% traffic share. The website has 40 million resumes registered.

Evaluation

M.C.Q. :-

Which one is not a job search portal -

1. naukari.com
2. job.com
3. shadi.com
4. monster.com

Which one is an exam web portal

1. jagranjosh.com
2. indiabix.com
3. talentsprint.com
4. all of the above

Students can enhance their knowledge through –

1. TV
2. Radio
3. Internet
4. All of these

Helps provided by Internet to students –

1. Doubt clearing through chat with experts
2. Online tests
3. Distance education Through ODL mode
4. All of these

VERY SHORT ANSWER QUESTIONS -

1. How can we develop e-content through the internet?
2. What is the use of exam web portal?
3. Which educational TV channel helps students to enhance their knowledge?
4. What is online chat?

Short Answer Questions –

1. What are the benefits of ICT for students?
2. How can students access education through Radio and TV services?
3. What are e-Tuitions and how are these tuitions beneficial for students?
4. How can ICT help in searching for jobs?

ICT in school management

In the current information age, educational institutions are expected to play a crucial role as the engine for knowledge generation and learning environment. In this regard, ICT becomes the vital means to facilitate this task. It is the fact that using ICT in education has become one of the most effective factor in school improvement not only for the purpose of teaching learning but also for administrative use.

Administration and management applications of ICT are currently popular in schools due to its capabilities in facilitating administration activities from data storage to knowledge management and decision making.

In recent years, ICT applications have been used in educational administration and management to support sustainable development. Software based tools and application are a piece of computer program which execute useful task for education, such as word processing, desktop publishing, running a database, creating a presentation or email program. There are 3 main administration groups that apply ICT in various activities and actions in their daily administration and management jobs at school including: administration head, administration teachers and administrative staff.

Using online services/ tools

Official Website For communication between school and student (and their guardians), School staff.

Online communication between home and school is the use of digital telecommunication to convey information and ideas between teachers, students, parents, and school administrators. As the use of e-mail and the internet becomes even more widespread, these tools become more valuable and useful in education for the purposes of increasing learning for students, and facilitating conversations between students, parents, and schools.

Online communication between parents and school

Online communication between parents and schools are online methods that serve as a platform for parents and teachers to exchange ideas. For teachers and administrators, online communication makes it easier to reach the parents and build the partnerships with parents. Online communication allows parents to receive real-time information about their child's performance and activities at school, and flexible opportunities to ask questions and provide information to teachers and school administrators.

Benefits

- Creating modes for online communication can increase parent participation in their children's education, which in turn increases students' interest in their learning.
- Online communication increases parents' understanding of classroom procedures, philosophies and policies. Parents then feel more involved in their child's school and more connected to the teacher. In general, online communication improves parents' attitudes toward conferencing with teachers and administrators.
- This style of communication allows for more asynchronous communication and greater flexibility.
- With online communication, parents can initiate conversations and express concerns to teachers and school officials easily.
- In addition, informal communication through online chatting or forums can reduce parents' anxiety of meeting face-to-face with teachers and/or school officials.
- When possible, online communication can also offer comfort through anonymity.

Challenges

Though most of the time, teachers and parents want to establish communication, there are some challenges that teacher and parents need to face together.

The most common challenges involve parent's ability to use the software, their access to consistent internet access and language barriers. There may be financial costs incurred by the school, if they provide training or translation to parents in order to make online communication more inclusive.

Role of teachers

Teachers have great responsibility in the establishment of online communication and communities with students, because of their leadership position. Several of their in-class characteristics must extend into the online environment, such as their ability to guide student behaviour and learning. Teachers should also encourage their classes to evolve into teach communities in which group processes have the power to influence the behaviour of individuals.

What Parents Want

Most communication priorities are:

- Updates on their child's progress or insight on how they improve
- Timely notice when performance is slipping
- Information on what their child is expected to learn during this year
- Homework and grading policies

Online complaint portal for queries and problem eradication.

Every parent has some queries and problems regarding his/her ward, school administration and management . Under **ICT in school** scheme, there is provision for **online query/complaint** registration .This online query/complaint portal is used to register their queries and complaints. This is an online service provided by institutions. All the teachers, staff and staff members and parents can use this online service.

Example of online complaint portal –

अपनी शिकायत पंजीकृत करें / Submit Grievance

Note: All the teachers and staff members can use this online service provided by the education portal to register their complaints. They can upload a signed application along with supporting documents. Online complain registration system will issue a registration number. Using the portal, Employees can track the status of redressal of complaints .

नोट :- शिक्षक और स्टाफ शिक्षा पोर्टल द्वारा प्रदान की जा रही इस ऑनलाइन सुविधा का उपयोग कर उनकी शिकायतों को पंजीकृत करने के लिए कर सकते हैं .वे अपने हस्ताक्षर के साथ आवेदन की प्रति और अन्य समर्थन दस्तावेजों की प्रति भी अपलोड कर सकते हैं . ऑनलाइन प्रणाली शिकायत के पंजीकरण पर एक पंजीकरण संख्या जारी करेगा .कर्मचारी अपनी शिकायत के निवारण की स्थिति को पोर्टल का उपयोग कर ट्रैक/पता कर सकते हैं.

हिन्दी में लिखने की जानकारी के लिए यहाँ क्लिक करें

Press ctrl+g for switching between english and hindi

विभाग)Department):

- Select Department -

कार्यरत/सेवानिवृत्त

)Working/Retired):

ई-मेल आईडी) E-mail ID):

मोबाइल फोन नंबर) Mobile

Phone Number):

एसटीडी कोड और लैंडलाइन

नंबर) STD Code &

Landline Number):

शिकायत का प्रकार चुनें

)Select Type of Grievance):

शिकायत का विषय चुनें

)Select Subject of

Grievance):

यहाँ अपनी शिकायत दर्ज करें

)Enter Grievance here):

अपने हस्ताक्षर के साथ आवेदन की प्रति और अन्य समर्थन दस्तावेजों की प्रति) PDF) भी अपलोड करें

(Upload signed copy of application/documents in PDF format)

यहाँ ऊपर दिखाए कोड को दर्ज करें) Enter the code shown above):

???? ? ? ? ? ? ? ? ? ? ? (Submit)

Using school management software application/tool

A school may survive without a classroom projector, but it cannot survive without a proper administration network. Looking at the increasing competition in these modern times, digitization seems to be a must for schools and colleges of all kinds. Traditional methods may be suitable to some extent, but an entire school cannot function properly without various technological advancements especially when it comes to running the administration network.

Digitization has been playing a major role in the education industry providing schools and colleges with quicker and smarter ways of data management.

The entire school network including, teachers, students, parents and school admins are all interlinked with an online school management system. Teachers can now prepare, manage and calculate exam papers and report cards via the digital system and students as well as their parents can finally have the convenience of accessing all sorts of records and reports such as fee vouchers, exam schedules, behavior reports and mark sheets via the web portal. The newly invented SMS alert system also works as a helping hand providing schools and colleges with a convenient method of circulating important messages and alerts in just a few seconds.

Digitization of School Data For Transparency

Digital Student Attendance

Marking student attendance via the pen and paper approach is not referred to as a smart method anymore because it does not just waste time, but also leads to instances such as data loss and file misplacement. Digital attendance marking can eliminate all sorts of risks.

Sometimes it gets necessary for teachers or admins to look for particular students on immediate basis. In situations like these, the admin can easily keep track of pupils by just a few clicks. Plus, now there are lesser chances of student records going missing.

Contact information

Easily add contact information for parents, relatives and authorized individuals. Designate legal guardian, bus stops and associate parents with students enabling automatic access to the portal.

Student demographics

School management software enables the tracking of numerous student demographic attributes in a permanent record and across enrolments.

Report cards

Easily input final grades, create student report cards and calculate GPA's and class rankings.

Cloud-Based Exam Management

Exam scheduling via paper or notice board was not just a slow procedure but also very unreliable. That procedure has been taken care of with full efficiency as teachers cannot just post schedules online, but can also easily evaluate students via automatic calculation system.

Books and uniforms

It will help in tracking the distribution and availability of books and uniforms at schools.

Digital School Management System is the new way to run schools and colleges both nationally and internationally. No wonder the education industry has started to become much more organized therefore making the entire industry a better place for everyone.

DATA MINING

Data Mining means the extraction of hidden predictive information from large database, it is a powerful new technology and prospective for companies to focus on the most important information in their data warehouses. In present literature, data mining refers to computer-aided pattern discovery of previously unknown inter relationships and recurrences across unrelated attributes in order to predict actions, behaviors and outcomes.

Educational data mining (also referred to as “EDM”) is defined as the area of scientific inquiry centered around the development of methods for making discoveries within the unique kinds of data that come from educational settings, and using those methods to better understand students and the settings which they learn in.

Educational data mining methods often differ from methods from the broader data mining literature, in explicitly exploiting the multiple levels of meaningful hierarchy in educational data. Methods from the psychometrics literature are often integrated with methods from the machine learning and data mining literatures to achieve this goal.

For example, in mining data about how students choose to use educational software, it may be worthwhile to simultaneously consider data at the keystroke level, answer level, session level, student level, classroom level, and school level. Issues of time, sequence, and context also play important roles in the study of educational data.

Data mining for effective decision making

With increasing pressure on school leaders to draw upon research and evidence in their decision-making, the need for effective management and critical engagement with school-based and system-wide data has become imperative. To enhance the quality of the extracted knowledge and decision-making, the data sets are transformed, the knowledge is extracted with

multiple algorithms, the impact of the decisions on the modeled process is simulated, and the parameters optimizing process performance are recommended.

The increasing impact of a knowledge economy and globalization has been a catalyst to the fields of knowledge management and organizational decision-making. The models, tools, techniques, and theory of data-driven decision-making that can improve the quality of leadership decisions are examined through solution-based scenarios. Students investigate how decisions and strategies are developed and how tacit or explicit knowledge can be identified, captured, structured, valued and shared for effective use.

Data mining can be used in conjunction with a data warehouse to help with certain types of decisions. To be successful, data warehousing and data mining needs a skilled user who will supply the correct data and a specialist who can make objective conclusions out of the output that is created. If the user supplies incorrect or minimal amount of information, output will be affected and forecast will not be credible. Data warehousing and data mining plays an important role in decision making of the organization. Data warehousing provide answers of many queries to the organization and the user and helps in decision making.

ICT in office work-

In any organization, , it is observed that a number of activities are being performed besides those directly associated with software development. Such activities include receiving and sending letters, typing, photocopying, word-processing, filing, handling of machines like the telephone, fax and computers etc. almost every primary and secondary functions of the office are carried out with the aid of ICT infrastructure.

Office Packages for record Maintenance & Documentation

Students' records, whether in paper or electronic format, are important resources for schools and should be harnessed through effective records management practices. The smooth running of any institution depends on effective and efficient records management

Records can be organized into three broad categories. The first category refers to records documenting the contractual relationship between students and the Institution. This includes records documenting admission and enrolment, payment of tuition fees, academic and non-academic disciplinary proceedings. The next category consists of records "documenting the student as a learner such as records documenting programmes undertaken,

academic progress and performance, awards. The last category is records documenting the student as an individual and consumer of services provided by the institution. In this category are records documenting use of accommodation services, counselling services, library and IT support services, careers and employment services. These records are important because they serve as major information tools that protect students' rights.

The introduction of computers into records management which widely developed has offered speed, precision diversity, flexibility and a rich and comprehensive documentation of process. This has been quickly embraced around the world as a critical information management and communication tool. The use of electronic systems in records management has also brought about space savings since most documents can be filed electronically which has reduced risk in event of loss. It is acknowledged that if ICT infrastructure like word processors, electronic databases, e-mail and management information systems can result in more efficient communications and administration of academic records .

Exchange of Emails for Quick and Cheap Communication

Electronic mail is a method of exchanging digital messages between computer users. Email has reached a high level of popularity due largely to the convenience of it. Messages move quickly and lots of information can be shared in the body of the email or through attachments. Emails are easily archived and searched. Emails offer the writer a chance to think through his thoughts and present a professional level of communication.

In a work place, communication is extremely important. Employees are now luckily able to make use of the many advantages of email.

- It is very easy to communicate effectively with anybody within the office or anywhere in the world regardless of where they are situated.
- Another advantage of having email communication at work is that you can respond quickly and easily. This means that you no longer need to spend hours on the phone, trying to get through and leaving messages with receptionists.
- Messages can be sent quickly, in an instant.
- The cost of sending an email is very low, unlike postage and other methods of communication.
- It is easy to use, simply type the name of the recipient, a subject line and your message and click the send button.
- You can copy others on correspondence. You can even blind copy someone (BCC) if you don't want the recipient of the email to know

that you are sending it to another person. A large number of people can be copied and communicated with at once.

- You can send attachments, such as photographs, files and Spreadsheets.
- You can book appointments in other people's diaries. They can then accept or decline the appointment.
- Email saves time. No need to spend valuable time going to someone else's office.
- Emails can be responded to in your own time, when it is convenient for you. It is not invasive like a visitor or phone call which requires immediate attention.
- It speeds up the workflow process, documents can be sent for comment, corrections can be made quickly.
- Emailing saves paper and printing costs.

Teleconferencing & Video Conferencing to save Time and Money

Teleconferencing means meeting through a telecommunications medium. It is a generic term for linking people between two or more locations by electronics. Administrators can access student files, retrieve institutional information from central repositories such as system offices, government agencies, or communicate with one another. Other resources can be created such as updates on state or federal legislation.

video conferencing (VC) is the ability to hold meetings using special equipment such as webcams, high-speed Internet connectivity and a personal computer. With VC, those who participate in the meeting can see, hear and speak to one another, regardless of their geographical location in real time.

Advantages -

Save Time: Content presented by one or many sources is received in many places simultaneously and instantly. Travel is reduced resulting in more productive time. Communication is improved and meetings are more efficient. It adds a competitive edge that face-to-face meetings do not.

Lower Costs: Costs (travel, meals, lodging) are reduced by keeping employees in the office, speeding up product development cycles, improving performance through frequent meetings with timely information.

Accessible: Through any origination site in the world. Larger Audiences: More people can attend. The larger the audience, the lower the cost per person.

Larger Audiences: More people can attend. The larger the audience, the lower cost per person.

Adaptable: Useful for business, associations, hospitals, and institutions to discuss, inform, train, educate or present.

Flexible: With a remote receive or transmit truck, a transmit or receive site can be located anywhere.

Security: Signals can be encrypted (scrambled) when it is necessary. Encryption prevents outside viewers.

Unity: Provides a shared sense of identity. People feel more a part of the group...more often. Individuals or groups at multiple locations can be linked frequently.

Timely: For time-critical information, sites can be linked quickly. An audio or point-to-point teleconference can be convened in three minutes.

Interactive: Dynamic; requires the user's active participation. It enhances personal communication. When used well for learning, the interactivity will enhance the learning and the teaching experience.

Evaluation

M.C.Q.

1. Which one is the correct example of official website?

- (a) www.kccinstitute.nic.in
- (b) www.ideal institute.nic.in
- (c) www.diet.nic.in
- (d) www.abcd@gmail.com

2. Online complaint portal is used for:

- (a) Queries and problems
- (b) chatting
- (c) data exchanging
- (d) browsing

3. Digitization of school data is used for:

- (a) transparency of attendance
- (b) transparency of books
- (c) transparency of uniforms
- (d) All of these

4. Office packages are used for:

- (a) record maintenance and documentation
- (b) Internet browsing
- (c) transparency of data
- (d) All of these

5. Teleconferencing saves

- (a) Time
- (b) Labor
- (c) Money
- (d) All of these

Very Short Answer Questions –

1. What is the function of official websites? Give one example.
2. How can the parents register their problems in schools, online?
3. What is the need of data digitization in schools?
4. How can we save time and money through teleconferencing and videoconferencing?

Short Answer Questions –

1. What are the services given by ICT, which help in school management?
2. What is teleconferencing and videoconferencing? What are their advantages?
3. What is Data mining?
4. What is school management software?

Experimental/ Sessional work

- Create a web page which contains information about our country, state, city or institution. Web page should include some pictures and a map.
- Visit any website which offers free greeting cards. Send any greeting card of your choice to your teachers.
- Create a PowerPoint Presentation on any topic and present it using projectors.
- Practice of the theoretical aspects, in the Computer Lab of the Institution.
- Slide presentations- 8
 - Minimum of 7-8 slides each based on elementary school text book etc.
- Project Work
 - A ten page report work contains Text and Graphics (Per Trainee)
- School Records digitization
 - Use any office package to maintain digital records throughout the internship
 - It must contain
 1. Daily attendance (student and self)
 2. Profile of the students
 3. Digital monthly summary (create and upload on social pages of School/DIET)
 4. Internship related photograph (1 in a week)(upload on social pages of School/DIET)
 5. Presentation on School Analysis
- Inspection of the computers installed in the Computer Centers of the Upper Primary Computer Labs of our District and students will also install necessary softwares.
- Create one's personal e-mail account and send an attachment to the e-mail account of the institution (Taking full care of the e-mail etiquette)

Practice of the theoretical aspects in Computer Lab of the Institutions