Learning Material

on

Paper Code-M.A.EDU. 1.2.3

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN EDUCATION

for

M.A. (Education) Semester-II Srudents

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Unit I: ICT in Education

ICT in Education: Meaning, Nature and Scope.

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Anytime, anywhere mode

One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons— mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a "***diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.***" These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. In recent years there has been a groundswell of interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels and in both formal and non-formal settings. But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools. For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries. The use of computers and the Internet is still in its infancy in underdeveloping countries, if these are used at all, due to limited infrastructure and the attendant high costs of access. Moreover, different technologies are typically used in combination rather than as the sole delivery mechanism. For instance, the Kothmale Community Radio Internet uses both radio broadcasts and computer and Internet technologies to facilitate the sharing of information and provide educational opportunities in a rural community in Sri Lanka.7 The Open University of the United Kingdom (UKOU), the Indira Gandhi National Open University in India combines the use of print, recorded audio and video, broadcast radio and television, and audio video conferencing technologies.

e-learning

Although most commonly associated with higher education and corporate training, e-learning encompasses learning at all levels, both formal and non-formal, that uses an information network—the Internet, an intranet (LAN) or extranet (WAN)—whether wholly or in part, for course delivery, interaction and/or facilitation. Others prefer the term online learning. Web-based learning is a subset of elearning and refers to learning using an Internet browser (such as Netscape or Internet Explorer).

Blended learning

Another term that is gaining currency is blended learning.This refers to learning models that combine traditional classroom practice with e-learning solutions. For example, students in a traditional class can be assigned both print-based and online materials, have online mentoring sessions with their teacher through chat, and are subscribed to a class email list. Or a Web-based training course can be enhanced by periodic face-to-face instruction.“Blending” was prompted by the recognition that not all learning is best achieved in an electronically-mediated environment, particularly one that dispenses with a live instructor altogether. Instead, consideration must be given to the subject matter, the learning objectives and outcomes, the characteristics of the learners, and the learning context in order to arrive at the optimum mix of instructional and delivery methods. What is open and distance learning? Open and distance learning is defined by the Commonwealth of Learning as “a way of providing learning opportunities that is characterized by the separation of teacher and learner in time or place, or both time and place; learning that is certified in some way by an institution or agency; the use of a variety of media, including print and electronic; two-way communications that allow learners and tutors to interact; the possibility of occasional face-to-face meetings; and a specialized division of labour in the production and delivery of courses.”

Creating a learner-centered environment

The National Research Council of the U.S. defines learner-centered environments as those that “pay careful attention to the knowledge, skills, attitudes, and beliefs that learners bring with them to the classroom.” The impetus for learner-centredness derives from a theory of learning called constructivism, which views learning as a process in which individuals “construct” meaning based on prior knowledge and experience. Experience enables individuals to build mental models or schemas, which in turn provide meaning and organization to subsequent experience. Thus knowledge is not “out there”, independent of the learner and which the learner passively receives; rather, knowledge is created through an active process in which the learner transforms information, constructs hypothesis, and makes decisions using his/her mental models. A form of constructivism called social constructivism also emphasizes the role of the teacher, parents, peers and other community members in helping learners to master concepts that they would not be able to understand on their own. For social constructivists, learning must be active, contextual and social. It is best done in a group setting with the teacher as facilitator or guide.

Free software and open source software (FOSS)

There are two main types of software that are considered ”open” and which are covered in this report. They are free software and open source software. Free software is what the name implies. The software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so. Although open source software is just as “free” it does not have to be free of charge. Besides being able to construct business models around the software based on commercial aspects, a company can receive direct payment by the use of a large number of licensing schemes and models, e.g. concerning support, further development, etc. What is important here is that the source code is freely available to the customer. In this report we choose to treat both free software and open source software in the same category, hence the abbreviation FOSS, which is used here. For proponents of FOSS, openness and unexclusiveness are fundamentally a question of democracy and a basic tenet is that information should be freely accessible to everyone and all without any restrictions. This does not mean that everything on the Internet should be free of charge. But what it does mean is that the inherent architecture of the Internet should be free.

Developers of FOSS

They come from a range of different environments. The prevalent areas are universities and colleges, public authorities, companies and individuals. Universities and colleges produce a large amount of software for reasons of education and research. Even though a part of this software becomes proprietary, most of is published as FOSS. Many talented students contribute also to the development of this software, partly because they like programming and can learn from other programmers and partly because it can have a beneficial effect on their own careers. A number of distributors of FOSS also take an active part in the development by contributing themselves by enhancing or making the product better. Their motive is most often either a demand from their own customers or even making the product better on their own and thereby increasing their profit. Besides distributors, even commercial software companies with their own interest in FOSS, take part in its development. Examples are IBM, HP and Sun who set aside considerable resources for the development of FOSS. These three companies also market the Linux operating system and therefore have a strong interest in contributing to its development.

Foss in India

The government in India, one of the largest countries in the world, recommends use of FOSS. The Indian IT department has started work on introducing Linux in national government systems and in the school systems all over the country. The objective of the department is that all national government agencies and institutions offer courses in the use Linux and development of software for the operating system. There are even plans for establishing Linux centres at universities. The government and business interests would finance the centres jointly. The objective to support Linux and get it established in schools and universities is primarily financial. The operating system and complementary software are considerably less expensive than proprietary alternatives. The possibility to copy and distribute programs based on FOSS free of charge is hoped to serve as an impetus to an increase in use of computers in the country. It is also believed that there will be a wide global demand for development and support of Linux based applications. This is seen as a future possibility for export and revenue. Microsoft totally dominates the market in India with over 90%. As in China, Microsoft has announced that they will invest large sums of money for educational purposes over a three-year period.

Open Educational Resources

Open Educational Resources (OERs) are any type of educational materials that are in the public domain. They are published under open licenses (i.e Creative Commons) that specify how materials can be used, reused, adapted, shared and modified according to specific needs. They can include textbooks, lecture notes, syllabi, assignments and tests.

Using OERs

Within the bounds of Creative Commons licensing there are 5 key points to consider when using OERs:

1. Reuse - Content can be reused in its unaltered original format

2. Retain - Copies of content can be retained for personal archives or reference

3. Revise - Content can be modified or altered to suit specific needs

4. Remix - Content can be adapted with other similar content to create something new

5. Redistribute - Content can be shared with anyone else in its original or altered format.

OER Benefits

There are many reasons for using OERs in learning and teaching. For teaching staff, OERs can supplement and add value to existing curriculum resources.

At the same time, it can reduce the cost of education for your students (reducing financial stress by removing textbook purchases).

For students, using OERs can expose students to a wider range of digital learning opportunities in the form of open texts, open images, open courseware, and self-assessment tools. According to JISC, learners can benefit from: enhanced quality and flexibility of resources seeing/applying knowledge in a wider context than their course may otherwise allow (international dimension) support for learner-centered, self-directed, peer-to-peer and social/informal learning approaches.

OERs provide Learning resources with cost-saving, quality and flexibility of access Enhanced opportunities for self-learning at home Skills development: digital literacy skills for searching, reusing, recreating, disseminating, branding, networking,...OERs to learning community.

National Policy on ICT

Eight policy themes are commonly identified in educational technology policies around the world. These relate to (1) vision and planning; (2) ICT infrastructure; (3) teachers; (4) skills and competencies; (5) learning resources; (6) EMIS; (7) monitoring and evaluation; and (8) equity, inclusion, and safety.

The National Policy on Education 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology @ Schools in 2004. Educational technology also found a significant place in another scheme on upgradation of science education. The significant role ICT can playin school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005.

Use of ICT for quality improvement also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, ICT has figured comprehensively in the norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universal Secondary Education, in 2005

With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education. This policy endeavours to provide guidelines to assist the States in optimizing the use of ICT in school education within a national policy framework.

National Mission on Education through ICT (NMEICT)

It is a landmark initiative of the Ministry of Human Resource Development MHRD)toaddressalltheeducationand learning related needs of students, teachers and lifelong learners. The National Mission onEducationthrough ICT (NMEICT) was launched on February 3, 2009 at Tirupati, Andhra Pradesh as a Centrally

Sponsored Scheme to leverage the potential of ICT inteaching and learning process. The three cardinal principles of the Education policyviz.,access, equity and quality are to be served through thre e major components of the mission.

There are three guiding philosophies for this effort –

[a] no talent of the country should be allowed to go waste,

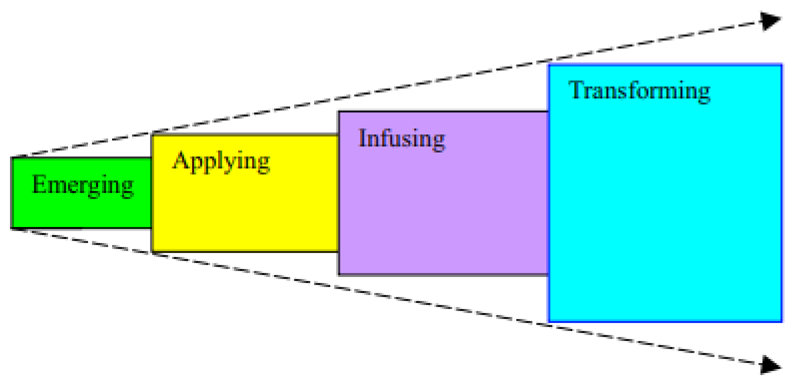
[b]allthe services available through the content delivery portal Sakshat should be free and

[c]freely available materialonthewebshouldbeusedsoas to avoid reinventing the wheel.

Unit II: Approaches, Stages and Competencies

Approaches in adoption and use of ICT in education

A continuum of approaches comprises of four broad approaches by which educational institutions and schools may proceed in their use of ICT. The four approaches are emerging, applying, infusing, and transforming. Figure:.Model showing a continuum of approaches to ICT development in schools, adapted from (UNESCO, 2002, p.15).



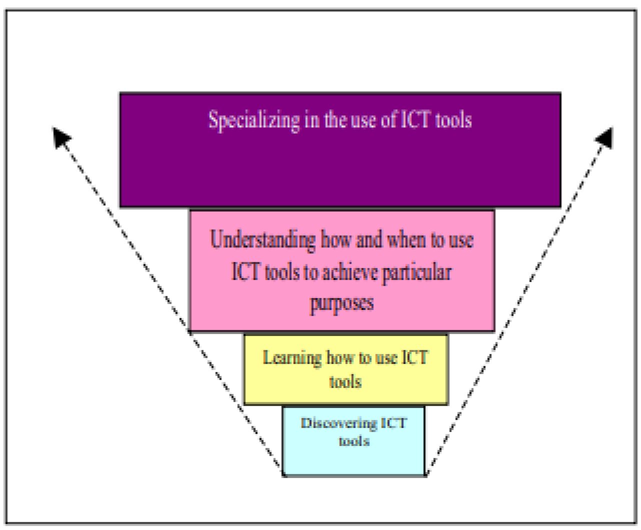
(i) The emerging approach This is the beginning stages of ICT development characterized by institutions purchasing or acquiring donated computing equipment and software. In this stage administrators and teachers are only beginning to explore the possibilities and consequences of ICT usage in management and curriculum. In this stage is typical in over 80% of the schools in the country. Computer curriculum has been designed by the national curriculum centre to be used by schools, but its operation in the schools is still optional due to uneven or non availability of ICT equipment in the schools.

(ii) The applying approach Schools which have appreciated the contribution of ICT to learning enter into this phase. Teachers use ICT for routine tasks in the school. Teachers adapt the curriculum to increase the use of ICT in mathematics teaching and learning. Teachers however still dominate the learning process. In , those schools which have acquired computers use them primarily for editorial purposes, not as a teaching and research tool. Acquisition of basic computer skills is the major activity.

(iii) Infusing approach At this stage a range of computer based technologies are employed in laboratories, classrooms. Teachers explore new ways of in which ICT will change their productivity and professional practice. The curriculum begins to merge subject areas to reflect real world applications. Some ICT infusion is visible at higher levels (university) in . Examples are use of multimedia in teaching, and use of specialized software in solving mathematical problems. At school level, this stage is not yet achieved.

(iv) The transforming approach This is stage where ICT becomes an integral though invisible part of daily personal productivity and professional practice. The focus of the curriculum is learner-centered and integrates mathematics teaching and learning in real applications. In , this not yet achieved because the curriculum design and also the limitation on facilities and equipment in the schools

Stages of teaching and learning



UNESCO (2002) studies point to four broad stages in the way students and teachers learn about and gain confidence in the use of ICT: These are discovering, learning how, understanding how and when, and specializing in the use of ICT tools. Figure 2 Model of stages of teaching and learning with and through ICT adapted from (UNESCO, 2002, p.17).

The intensity of use of ICT increases from the discovery stage toward specialization in the use of ICT tools.

(i) Discovering ICT tools

In this stage teachers and learners are discovering ICT tools and their general functions and uses.

At this stage, emphasis is on ICT literacy and basic skills. This stage of discovering ICT tools is linked to the emerging approach in ICT development (Fig.2.1). In over 80% of schools are still found in this category. Limited use of scientific calculators is visible in urban schools but the impact on teaching and learning mathematics has not been quantified. The implication is that technology is still not fully explored and hence no research in the use of technology in the classroom is being done.

(ii) Learning how to use ICT tools

This is a stage where learners and teachers begin to make use of ICT tools in different disciplines and is linked to the applying approach in the ICT development

(Fig.2.1).A number of secondary schools in are in this category but the percentage is still small (less than 10%).Tertiary institutions including universities in are generally at this stage. Common application of ICT in tertiary institutions includes editorial work and internet. Actual research on how students learn mathematics with technology is not available. Given the limited coverage, research output

in mathematics education with respect to technology is still minimal.

(iii) Understanding how and when to use ICT tools to achieve particular purposes

This stage implies the ability to recognize situations where ICT will be helpful, choosing the most appropriate tool for a particular task , and using these tools in combination to solve real problems.

For example using Excel by students to plot graphs of statistical data generated from a classroom exercise. Another example again, is use of excel by a teacher to process grades obtained from a class test. This stage is linked with the infusing and transforming approaches in the ICT.

development. In , this stage is mainly accomplished in well established research institutions and Universities. Training and ICT infrastructure development are key factors being addressed at all levels in the country. To that extent there is now a full ministry of ICT in the country, a position which has not been there before.

(iv) Specializing in the use of ICT tools

This stage involves specializing in ICT. In this stage students study ICT as a subject to become specialists. After their study, they become professionals as opposed to the general knowledge in the use of ICT.

Specializing in the use of ICT tools Understanding how and when to use

ICT tools to achieve particular purposes Learning how to use ICT tools

Discovering ICT tools

In undergraduate teachers to be, take their teaching subjects together with basic ICT course at the University. This training does not make them to become ICT specialists but basic users of ICT tools. Students in the computer science departments in Universities in are the ones who specialize in ICT. For the teachers to explore technology in the teaching and learning of mathematics, more exposure in classroom based research skills is necessary.

Pedagogical Usages of ICT and Teacher Competencies - content, pedagogy, technology, integration

"There are seven components of TPACK model as given by Shulman:

1. Technological Knowledge (TK): Technology knowledge refers to how to use computer software and hardware presentation tools & other technologies used in educational contexts.

2. Content Knowledge (CK): Content knowledge refers to the Teacher"s knowledge about the subject matter to be learned or taught.

3. Pedagogical Knowledge (PK): Pedagogical knowledge refers to the set of skills teachers must develop and teache's deeper knowledge about the processes and methods/techniques of teaching & learning.

4. Pedagogical Content Knowledge (PCK): Pedagogical content knowledge refers to the knowledge of the subject/topic, psychology of the learner, psychology of learning etc. are the important factors that determine the appropriate selection of

the methods/techniques for teaching. For example: art, drama, puppetry, role play, nature rambling, field trips, laboratory method, project method etc.

5. Technological Content Knowledge (TCK):

Technological content knowledge refers to an understanding of the manner in which technology and content influences one another Teacher should be aware of the innovative technologies available in the global market for the effective

transaction of the subject matter. For example: Virtual Labs, Virtual field trips, e-library, educational softwares etc.

6. Technological Pedagogical Knowledge (TPK):

Technological pedagogical knowledge refers to the reciprocal relationship between technology and pedagogy. An understanding of how teaching and learning can change when technologies are used in particular ways. This includes

knowing technological tools for appropriate pedagogical designs and strategies. For example, collaborative writing can take place with Google Docs or Google Hangouts instead of face-to-face meetings.

7. Technological Pedagogical Content Knowledge

(TPACK): TPACK as a synthesised resource of Technological knowledge (TK), Content knowledge (CK), Pedagogical knowledge (PK), Pedagogical content knowledge (PCK), Technological content knowledge (TCK),

Unit III: ICT Tools

Excel

Excel is one of the most powerful and easy to use statistics software. It allows you to store the data in tabular format, i.e., in rows and column format. It also allows you to interact with your data in various ways.

You can sort and filter the data using some of the most potent formulas. The pivot tables one is the best feature of Excel. You can use pivot tables to create a new insight by manipulating the data.

Excel has various features that can help you with statistics. There are multiple ways to importing and exporting the data. You can also integrate the data into the workflow.

Like no other statistics software, Excel allows you to create the custom function using The primary purpose of Excel is to create records of data and to manipulate the data as per the users' demands. As mentioned earlier, Excel allows you to use the external database to analyze, make reports, and so on. Now a day, Excel is offering the best graphical user interface along with the use of graphics tools and visualization techniques.

SPSS

SPSS Stands for statistical packages for Social Science. It is the market leader in terms of statistical packaging tools. SPSS is used as the derivative for data manipulation and storage. It is having two methods for batch processing, i.e., interactive batches and noninteractive batches.

SPSS inc developed it, but later on, it was acquired by IBM in 2009. The earlier name of SPSS was "under the umbrella. But after acquiring by IBM, SPSS was renamed as IBM SPSS in 2015.

SPSS also comes with an open source version that is known as PSPP. This version has used the process of statistics and the formulation of data manipulation techniques with very few exceptions. These statistics and formulation are used for the professional manipulation of large data chunks.

The open source version of SPSS is quite decent, and it won't expire in the future.

Anyone can use the same SPSS software for the lifetime. SPSS is one of the best analytical software that provides high-quality graphics for more analytical features.

The best part of this software is when you create standard graphics in this software. Then you can output the graphics as HTML5 files. It means that you can access these files through your browser too.

Comparison of SPSS and EXCEL

1. SPSS use for computation. It means that it consists of various subjects such as Data Storages and Data formats. On the other hand, excel based on mathematics concepts such as algebra, calculus, statistics, and advanced statistics.
2. SPPS teach us how the process is built in batches. It also helps us to learn memory management in the programming areas. On the other hand, Excel offers us a clear view of how data can be used to study how the data will be stored. Excel allows us to process and manipulate the data to reduce the redundancy so that it can become meaningful for future use.

3. SPSS is based on computer systems. It offers us a clear insight into computer storages utilization and memory system efficiency. On the other hand, excel offers us to extract specific information from the broad set of data using various formats of Excel.
4. SPSS use for probabilistic theories, reasoning, discrete structures, and database. On the other hand, as I have already mentioned, Excel offers various mathematical operations and analytics. In other words, it provides more formulated mathematics operations as compared with SPSS.
5. SPSS is a batch processing statistical tool. On the other hand, Excel is a data manipulation tool.
6. The primary purpose of SPSS is to use data manipulation techniques to fetch good results. On the other hand, the goal of Excel is for storing the data and safely handle it.
7. SPSS is an integrated part of IBM. That's why it is evolving the advanced concepts. Moreover, new algorithms are also coming under IBM. On the other hand, Excel is also growing at a rapid pace. It keeps adding some of the most potent statistics functions, and it is becoming quite complex to handle. But Excel still needs some improvement to be the best statistics software in the world.

8. SPSS is all about dealing with statistics algorithms. That's why it always ready for the new statistics algorithm updates. It uses this algorithm for data manipulation. On the other hand, Excel is all about the combination of mathematics and data storages in various formats.

Conclusion

SPSS and Excel are a lot different than each other. Even there is no comparison between these two tools. Excel is a spreadsheet software, whereas SPSS is statistical analysis software.

We can perform plenty of statistical analysis with the help of Excel. On the other hand, SPSS is a complete and powerful statistical analysis software. SPSS has built-in data manipulation tools for recording and variable transformation.

On the other hand, Excel doesn't offer the build in functions. You have to do a lot of work to do the given task. Every column is a variable in SPSS. On the other hand, columns and rows do not treat in that way.

In the end, you can say that both Excel and SPSS are serving their purpose in their domain exceptionally well. Both are the best statistical tools in their field.

But both SPSS and EXCEL serve you the purpose in their domains exceptionally well. Now you can choose between SPSS vs Excel more confidently.

Defining the "Digital Divide"

The twenty-first century witnessed a havoc increase in the interaction between human and computers . The ability to access computers and the internet has become increasingly important for economic, political, educational and social aspects of the world. However, not everyone has access to this technology. The term **"digital divide"** refers to the growing gap between the underprivileged members of society, especially the poor, rural, elderly, and handicapped portion of the population who do not have access to computers/IT gadgets or the internet; and the wealthy, middle-class, and young living in urban and suburban areas who have access.

The IT@School Project: It is an information technology project under the Department of General Education, Government of Kerala in India. Launched in 2001, the Project has remodeled conventional teaching methodologies in classrooms through the use of IT. The project was being implemented in over

12,000 schools in the state of Kerala, and also in schools in Mahé, Lakshadweep . An estimated 50 lakhs students and 2 lakhs teachers were part of this project, with a network of 160 "master trainers" and 5600 school IT co-ordinators statewide, who are school teachers themselves. The project also conducts specialized training for visually challenged teachers in that state.

NMEICT

Full form : **National Mission on Education through Information and Communication Technology (NMEICT)**

The National Mission on Education through Information and Communication Technology (NMEICT) has been envisaged as a Centrally Sponsored Scheme to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions in any time any where mode. This was a major intervention in enhancing the Gross Enrolment Ratio (GER) in Higher Education by 5 percentage points during the XI Five Year Plan period.

Objectives of NMEICT

The three cardinal principles of Education Policy viz., access, equity and quality could be served well by providing connectivity to all colleges and universities, providing low cost and affordable access-cum-computing devices to students and teachers and providing high quality e-content free of cost to all learners in the country. NMEICT encompasses all the three elements. The Mission has two major objectives:

a) **Providing connectivity** (along with provision for access devices, to institutions and learners)
b) **Content generation**.

It seeks to bridge the digital divide, i.e. the gap in the skills to use computing devices for the purpose of teaching and learning among urban and rural teachers/learners in Higher Education domain and empower those, who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. It focuses on appropriate pedagogy for e-learning, providing facility of performing experiments through virtual laboratories, on-line testing and certification, on-line availability of teachers to guide and mentor learners, utilization of available Education Satellite (EduSAT) and Direct to Home platforms, training and empowerment of teachers to effectively use the new method of teaching learning etc.

Digital Age

The Digital Age is a period in human history characterized by the shift from traditional industry that the Industrial Revolution brought in, to an economy based on digitised (computerized) information. It is often called as the Information Age, Computer Age or New Media Age.

Educative role of Social Media

Social media and networking can allow students to access a variety of knowledgeable peers, parents, community members, children's literature authors, academics and other people who might not otherwise be available. Teachers across the world have had their students write blog posts for certain assignments and then share their assignment to their accounts. Here the students can enjoy feedback from not only their teacher but also from others who have read their assignment . Teachers also use social media tools to hold review sessions for their classes in out of school hours and to support one another. This gives the teachers more time to teach in class rather than answering questions and clarifying because of the extra time they had to review with their students through social media. Having these social media tools in class also helps students ask their peers or teachers questions out of school when studying, motivated or confused. Social media can also provide motivation for students who might learn or put forward more effort because students know their work is being shared with audiences such as their classmates, families or other classes around the world. Students will also know that their family, such as their parents or guardians, can follow their class or school social media accounts to see examples of their work and learning from the students and teacher. Social media can also impact how learning occurs by all students engaging in conversation rather than just a minority of the class. It can help bring a more diverse set of perspectives into the classroom since all of the students are voicing their opinions, especially the quieter students who do not like voicing their opinions in class.

Some prominent social media sites are Whats app, Facebook, Twitter, Linkedin, Youtube, Instagram etc.

Safe surfing mode

It is a diagnostic mode of a computer operating system (OS) intended to help fix most of the internet related threat to the PC and personal info. It is also widely used for removing scoundrel security software. Many people use the Internet on a daily basis without trouble, but it can harbor some hidden dangers to you and your computer. These risks can include exposure of sensitive personal information and infection by malware, which includes viruses, spyware, and adware. Safe browsing means being aware of these online threats and taking the necessary steps to avoid them.

Types of ICT Tools

Information and Communication Technology consists of various tools and systems that can be exploited by capable and creative teachers to improve teaching and learning situations. Lim and Tay (2003) classification of ICT tools as :

1) Informative tools - Internet, Network Virtual Drive, Intranet systems, Homepage, etc.

2) Resignation devices - CD-ROM, etc.

3) Constructive tools - MS Word, PowerPoint, FrontPage, Adobe Photoshop, Lego Mindstorm, etc.

4) Communicative tools - e-mail, SMS, etc.

5) Collaborative tools - discussion boards, etc. forum

The five categories of ICT tools listed above are discussed in more detail under the following headings.

Informative Tools

Informative tools are applications that provide large amounts of information in various formats such as text, graphics, sound, or video. Informative tools can be regarded as a passive repository of information (Chen & Hsu, 1999). Examples include tools and information resources of the existing multimedia encyclopedia of the Internet. The Internet is a huge electronic database, and researchers consider the Internet as the most significant ICT tools in e-learning environments. Pew

Internet & American Life Project did a survey in 2002 showed them three out of five children under the age of 18 and more than 78% of children between the ages of 12 and 17 lines. Key findings from this study are found in Levin & Arafeh (2002) shows that students rely on the internet to help them do their homework. In short, students consider the Internet as a virtual textbook, reference library, virtual tutor, learn to study shortcuts and virtual study groups (McNeely, 2005).

Situating Tools

Situating tools is a system that lay the students in the environment where it involve a context and the occurrence of a situation. Examples of such systems include simulation, virtual reality and multi-user domain. Situating tools software tools such as CD-ROM. CD-ROM offers hypermedia application which gives better opportunities for teachers to enhance learning environment. Hypermedia application covers more than one of the following media such as text, audio, graphic images (still images), animation and video clips. Hypermedia applications are well integrated in the learning environment to enhance student autonomy and thinking (Cheung & Lim, 2000). A multimedia presentation topic will help students to conceptualize the ideas of the real world by integrating the theories in the practical application of real-world situations. It is to increase students' ability to use the conceptual tools of the discipline in authentic practice. (Phillips, 2004) Multimedia able to put the amazing array of resources on student and lecturer resources on teaching and student 1control. "Multimedia learning active learning to create a more dynamic, interactive, collaborative, and satisfying" (Supyian, 1996)

Constructive Tools

constructive tool is a general purpose tool that can be used to manipulate information, construct their own knowledge or visualize students understanding. Construction tools such as Microsoft Word or Powerpoint has a strong impact in the educational environment and is widely used in most organizations in the form of memos, reports, letters, presentations, record routine information, giving businesses the most (McMahon, M. 1997.) In learning a second language , Microsoft Word manage to help students to make correct sentences and texts as well as modern word processors include spell checking and dictionaries and grammar checkers. Therefore, teachers can use the software to promote writing in the curriculum. PowerPoint is a presentation graphics program packaged as part of Microsoft Office for Windows or Macintosh. Although generally used for developing business presentations , it is also very advantageous in the context of increase creativity among students. While word processing program is the most common computer applications used, as a spreadsheet like Excel is just as important in teaching and learning of English. Students will be exposed to learning design and statistical data using the Excel program that can be automated through the formula.

Communicative Tools

Communicative tools are systems that allow easy communication between teachers and students or between students outside the physical barrier classroom. (Chen, D., Hsu, JJF, and Hung, D. 2000) It is including e-mail, electronic bulletin boards, chat, teleconference and electronic whiteboard. Synchronous communicative tools such as chat or video conference enable real-time communication while using the tools of communicative asynchronous (eg e-mail and electronic whiteboard) is a system in which exchange of messages between people are not 'live' but somehow delayed. Communicative tool most appropriate for activities requiring more time to think before responding. Utilization of electronic mail is increasing day by day. E-mail is the most commonly used on the Internet. It is easy to use as it is a primarily text-based system and simple communication tool for teachers and students that allows students to dominate class beyond physical barrier. (Chen, D., Hsu, JJF, and Hung, D., 2000.)

Collaborative Tools

Collaboration tools of ICT is currently the focus of much interest and emerging as development of new tools that make online collaborative projects draw a realistic option for a distributed group work. Internet can be used for many collaborative activities such as meetings, discussions are taking place, working in the document, information dissemination, and other tasks. Interactive electronic whiteboard is not just used as tools for meeting and development, but recently became the most popular tool among teachers. whiteboard is an electronic device that interfaces with the computer where the computer image is displayed on the board that can be manipulated interactively (Weiser and Jay, 1996). This tool is increasingly popular with teachers, when used in conjunction with a computer and a video projector that produces interactive learning community. Instead of having to crowd around one or two computers, interactive whiteboard not only display the materials, but also to respond to human interaction with computer commands and orders on a touch screen. In addition, these technologies provide impulsive information sharing, constructing knowledge and stimulate personal growth. (Mona, 2004). Other collaborative tools, such as E-mail messaging, Wireless Application Protocol (WAP) and General Packet Radio Services (GPRS) embedded in micro-browser equipped mobile phones or GPRS enabled handheld computers are other ICT tools that that can link students in different geographic locations exceeding the boundaries of class. In addition, the development of mobile phone and PDA allows learners to exchange information in a short time simultaneously and asynchronously, and provides flexibility for one-one, one-to-many and many-to-many communication, especially for the online discussion forum. (Lim & Lee, 2002). In conclusion, a "learning is no longer seen as a solitary activity, but is described as taking place through social interaction with peers, mentors and experts" (Kings, 1998).

Benefits of Utilizing ICT In Education

It important to analyze the facts occur within the new technology and the learning process should be viewed in the perspective of learning English. Most of the simple basic use of ICT devices in the educational environment that leads to the following benefits:

Increase in pupils’ motivation, enthusiasm and confidence

Positive association with attainment

Learning possibilities expanded via collaboration, interaction and communication in the target language

Potential for differentiation according to individual pupil need

The utilization of ICT tools in education was increasingly felt in recent times and benefits the students with the appropriate exploitation. It facilitates latest information for user by at a click of a mouse. ICT tools can perform four essential functions as follows:

The speed and automatic functions of ICT allow a teacher to demostrate , explore and clarify aspects of the teaching method which enable the students learn more effectively;

The capacity and coverage of ICT to assist the teachers and pupils easily access to for historical event or current formation

the temporary nature of information stored, processed and presented using ICT enable simpler method as documents could be change and correced by editing software provided in the programs.

the interactive way in which information is stored, processed and presented can enable teachers and students to explore the model, to communicate effectively with others and present information effectively to different audiences..

Research has shown that appropriate use of ICTs to catalyze a paradigm shift in both content and pedagogy that is the heart of education reform in the 19th century. ICT-supported education to enhance the success of the ongoing knowledge and skills that will give the students continuous learning if properly designed and implimented. Leveraging ICT in an appropriate manner enables new methods of teaching and learning, especially for students in exploring exciting ways of problem solving in the context of education. New ways of teaching and learning is supported by constructivist learning theory and paradgm shift from teacher-centered pedagogy of memorization and rote-learning to focus on student centered. (See Table 1 for a comparison of a traditional pedagogy and an emerging pedagogy enabled by ICTs)

Blogs

History: Jorn Barger coined the term ‘Weblog’ during 1997 for a personal website or web page on which an individual records opinions, links to other sites, etc. on a regular basis is posted. Later it was called ‘Blog’ for convenience by Peter Merholzby breaking ‘Weblog’ to ‘We Blog’ (Economist, 2006). Since 1999

blog became popular with LiveJuournal and reached a wider audience with the entry of ‘Blogger’ by Evan Williams.

Purpose: A blog is a type of content management system (CMS) that makes it easy for anyone to publish short articles called posts. A ‘Blogger’ is someone who blogs or writes content for a blog; and ‘Blogging’ is the act of writing a post for a blog. It is generally introduced as an online personal diary or online journalism. Blog software provides a variety of social features, including comments, blogrolls,

trackbacks, and subscriptions. Blogs make great hubs for other social media services as they can be easily integrated with nearly every other tool and platform.

Social Media

Social media is a blurred term that is used to refer to different technologies in different ways. As a norm we consider any online platform which provides options for collaborative content development and sharing as social media. On the whole, the general understanding of social media is all about a platform which facilitates sharing, collaboration, and conversation. It is a platform for creating content -

called ‘user-created content’ - directly and often collaboratively. Social media has to be understood through the technology.

Social Networks

History: Bulletin Board Systems (BBSs) which are used to send messages to the known community with option to share the software and data were the blueprints for current Social Networks. The BBSs were in use during 1980’s; the usage was very much restricted to specific local communities. The rich features of Web 2.0 technologies made the BBSs reappear as Social Networks.

Purpose: Social Network websites are topic for the day. It may be for a political party, company, service industry, celebrity, marketers, or even to a school student social network websites have become a means to connect with friends, interact, share, create groups, publishes, etc

Social bookmarking

This is the process of saving a specific web page to a social bookmarking platform so you can revisit it later. Social bookmarking sites allow users to access their bookmarks online, at any time, from any device. Social bookmarking sites are useful to marketers because users can add, annotate, and share bookmarked web pages with their team.

Bookmarks can be public, private, or shared with specific groups. Social bookmarking sites can also be used like social search engines. You can search and browse to see popular and recently added web pages. Users can comment and vote for web pages they like, making it easy to see what articles are most valuable.

Social Bookmarking Sites 2020

Pocket

Digg

Pinterest

Mix

Scoop.it

Medium

Slashdot

Podcasting

Podcasting is a way of distributing audio files via the Internet. A podcast is an audio file that can be downloaded from the Internet, often in MP3 format. Once a podcast has been downloaded, it can be listened to on a computer, or be transferred to a portable device such as an iPod or other Portable Media Player (PMP), a mobile phone, or a Personal Digital Assistant (PDA).

Subscribing and downloading

In the strictest sense, podcasts are subscribed to using RSS (Really Simple Syndication). RSS is a way of providing people with frequently updated content. By using podcatching software, such as iTunes or Juice, podcasts can be subscribed to, and if in a "series", new episodes can be automatically downloaded as they become available.

The BBC´s "Today" programme provides an excellent example of how audio material can be distributed via podcasting. Clicking the link, or on the right hand side of the page, will take you to the web page for the programme, with links to either subscribe to the series, or download individual episodes.

Key pedagogical points about podcasts and podcasting:

1 – Flexible delivery

Because podcasts are normally downloaded and can be copied onto portable devices like iPods and mobile phones, you and your students can listen to them anywhere at anytime, without requiring being connected to the Internet. This offers enormous potential for flexible delivery of learning resources.

2 – Use of Audio as en educational medium

The advent of podcasting places a new emphasis on the use of audio resources in learning and teaching. Audio has often been seen as a "poor relation" to video and other forms of multimedia, and perhaps the greatest challenge in the use of podcasting in education is to find ways in which audio materials can be most effectively used in pedagogical terms.

3 – Podcasting is easy and cheap.

Podcasts are very simple to create, and can be produced using the freely available Audacity software, and very inexpensive hardware such as a cheap "Skype" type headset that costs less then £5. We will happily come and teach you, your colleagues, and/or your students how to do it.

Assessment Tools

In evaluating assessment tools, I took into consideration the levels of user friendliness, creativity, active engagement, age adaptability, and cost of the tools to determine the level of support they provide for teachers in the instructional environment. My evaluation of assessment tools included Survey Monkey, Rubistar, & Hot Potatoes. I found all three to be great tools to help teachers in different ways so they're equally valuable.

Rubistar is set up similarly, as teachers just input or modify the content to fit their needs, but it's used to create rubrics rather than surveys Rubistar earns a 4 for user friendliness, as it can be accessed anywhere in which internet is available, and navigation is very simple. The layout provides clear and easy direction through the process and there's also a tutorial if needed. As for creativity, this tool earns a 4 because it helps the teacher create a unique learning environment by integrating measurable standards into their lessons, and helping students better understand how to meet their learning goals. In the cost area, this tool earns a 4, as it is free of charge, and there's no limit or conditions to the use. The tool earns a 3 for active engagement, as it helps to drive and support student directed learning and includes rubric creations to evaluate the various learning strategies. Additionally, the program itself utilizes technology and evaluation. As for age adaptability, this tool earns a 4 because it can support at grade level through it creation.

Hot Potatoes also allows a teacher to quickly and easily design student assessments, but through a fun an interactive approach. It earns a 3 for user friendliness, as it must first be downloaded, but once that's complete, the program is easy to navigate. As for creativity, this tool earns a 4 because it helps the teacher create a unique learning environment through fun and interactive assessments and has the capability to integrate several different 21st century skill levels, such as critical thinking and creativity. Because the program is free, with no conditions, it earns a 4 in the cost area. This program allows teachers to easily support student directed learning through evaluation, explanation, and interaction, earning it a 4 in active engagement. The program allows the teacher to customize and create assessments directed toward any grade level, therefore it earns a 4 for age adaptability.

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