



AN OVERVIEW OF INNOVATIVE LEARNING TOOLS AND E- RESOURCES FOR PROFESSIONAL DEVELOPMENT

Manju Gupta

Reader, Department of Education, Meerut College, Meerut

Abstract

Twenty first century is an era of technological explosion and information growth. There is a need to introduce information and communication technology in Teacher Education to prepare secondary school teachers to meet out the challenges of twenty first century. Application of information and communication technology for teachers is two-fold system. Firstly, teachers can use information and communication technology for their own professional growth and secondly they can use ICT for making teaching and learning process more effective during classroom teaching. Whether teachers use technology for self development or for enhancing pupil learning, it is always to develop their ICT skills first and then communicate to others. They need to acquire and develop professional knowledge and skills in use of information and communication technology. Teachers can reduce their work load by using information and communication technology. Their role will be changed from that of a teacher to that of a facilitator. They have to teach students how to select information and synthesize it and how to find a right way in conflicting and contradictory situations. Internet has become an integral part of our life. we need to accept and adopt the same to be called updated teacher and teacher educators of the modern technological society-learning and its concept in the context of education and modern learning has assumed great relevance for 21st century pedagogy. The two international commission and various national level committees in India in the past 30 years have stressed on a paradigm shift in the area of education, teaching and instruction. As a result, learning stands recognized as a life long process, supported by a system called multi-channeling-learning with the use of ICT

offers the possibility for active, interactive and parallel interaction. In the present paper, an attempt has been made to give an overview about various E- resources and innovative learning tools for professional development.

KEY WORDS: E-RESOURCES, INNOVATIVE LEARNING TOOLS, PROFESSIONAL DEVELOPMENT.

INTRODUCTION

The quality of education depends on the quality of teachers. Without maintaining the quality of teachers, no innovation can be expected. To have 100% literacy and to impart quality education have become mandatory in present day scenario. Today when there is virtual explosion of information, it is highly essential that Teacher Education is of the highest quality and standard. Overall quality of education depends to a large extent upon the quality of the Teacher Education. Teachers play a vital role in the development of any society. The National Council of Teacher Education (NCTE) document of 1998, stresses that teachers are the torchbearers in creating social cohesion and national integration. Only enlightened and emancipated teachers lead communities and nations by their efforts towards better and higher quality of life.

There is a necessity to introduce information and communication technology in Teacher Education. The application of information and communication technology for teachers is a two-fold system. Firstly, teachers need to develop ICT skills use for their own professional growth and development. Secondly, they can use ICT for making teaching and learning process more innovative, effective and efficient. Whether teachers use technology for self-learning or for enhancing pupil learning, they need to acquire and develop professional knowledge and skills in using information and communication technology. Teachers' work load can also be reduced by using information and communication technology. Their role will be changed from that of a teacher to that of a facilitator. They have to teach students how to select information and synthesize it and how to find a right way in conflicting and contradictory situations.

In the changed scenario, when we have reached to the threshold of development of new technologies which are likely to revolutionize classroom teaching, the role and function of teachers is changing. Now the emphasis is on the self learning under the guidance of a teacher. Who is more facilitator to introduce student with the new technologies. So in the era of Information and Communication Technology, it is necessary to focus greater attention on the

performance of the teachers. “Teachers’ performance is the most crucial input in the field of education, whatever policies may be laid down in the ultimate analysis these have to be interpreted and implemented by teachers as much through their personal examples as through teaching learning process.”- Is very well discussed in the documents of Ministry of Education. So it is the ultimate truth that the teacher must be motivated and committed to adopt a variety of new techniques including the computer technology, electronic media and hyper media for dissemination of knowledge to their students for their all round development. “The next society will be a knowledge society in which knowledge will be resource and knowledge workers will be the dominant workforce in future” -Peter Druck (An eminent management scientist).

Our present generation is growing up in an information age. Learning how to learn within the information technology rich environment requires skills experience. In ancient period the process of education was just to hear the knowledge from guru to mediate over; teacher was responsible for disseminating information to students, due to technological development tremendous changes are being foreseen on the global scenario. never before have we had greater disaster confronting our future nor have had more serious challenges opportunities than offered today so there is a need for human resource to be trained in accordance with the need of technological advancement in such a way that he/she should be able to perceive new situations. now the role of teacher has changed into facilitator .

Basic skills required in twenty first century are ICT skills, multitasking, creativity, innovation, problem solving, collaboration in a multicultural environment, making informed choices and decision making.

The National Curriculum Frame Work for School Education 2005 states that new technology has a tremendous potential to revolutionaries education an transform school dramatically. integration of ICT into schooling would demand that the educational planners look beyond the current urban classrooms devising updated plans for education in an electronic environment even in the far flung rural areas expanding their design so that the computer becomes more than the subject of study. It is not merely integrated into an existing curriculum-it becomes, instead ,an integral part of schooling process resulting in universal computer literacy . CAI,CBT through out the country. The world of computes is full of wonders. The general excitement about information and communication technology can be seen among all ages. Any information can be accessed, created, communicated or analyzed through information technology. The use of ICT not only

increases productivity and creativity but also encourages self-directed learning. Internet has become the lifeline of young generation. It could do wonders for the “lecture session” of teachers and educators and could be useful in the field of education in a magical way. When new technology emerges, teacher is charged to be able to use it without exception. It is the same condition when a higher education institution tries to implement ICTs to support learning; their assumption is all the staff willing to use it. But the fact that not all people who work as a teacher will have open minded with the new comer-technology. However, e-learning demands a certain level of skills on the behalf of teachers and students both. Sometimes even highly educated teachers lack necessary computer and internet skills. Higher learning institutions must invest in training their teachers in necessary computer competency skills. This will boost teacher’s self efficacy which will have a positive effect on teaching-learning and promote acceptance of e-learning. Higher learning institutions must provide a supportive environment, incentives and technical help to encourage e-learning. With a good strategy and promotion the implementation of e-learning in higher education institutions will be successful. E-learning is a large and growing market with great potential in higher education. In order to maximize this potential, e-learning implementations should endeavor to satisfy the needs and concerns of all stakeholder groups as much as possible

Why E-Resources for Professional Development

Internet has become an integral part of our life. we need to accept and adopt the same to be called updated teacher and teacher educators of the modern technological society-learning and its concept in the context of education and modern learning has assumed great relevance for 21st centaury pedagogy. the two international commission and various national level committees in India in the past 30 years have stressed on a paradigm shift in the area of education, teaching and instruction. As a result, learning stands recognized as a lifelong process, supported by a system called multi-channeling-learning with the use of ICT offers the possibility for active, interactive, parallel and parallel interaction. The possibilities are so enormous that is worth considering some fundamental pedagogical question, which can serve as a checklist for creating a new e-learning pedagogy. We need to ask four key questions to ourselves before we go for teaching.

- What is the purpose?
- How can we best achieve that purpose?
- How can we know that we have achieved that purpose?

- How can we go to improving current practice?

By in-depth thinking over above mentioned key questions, and as a teacher and teacher educator, we have a possibility to achieve our goal of professional development as easiest as possible. In this process of professional development, e-resources are useful tools:

- To promote high quality decision making and reasoning abilities for better result.
- To be Helpful in obtaining errorless and updated knowledge of concepts.
- Processing information more efficiently and effectively.
- For getting new information about various training programmes, seminars, conferences and workshops for development of professional abilities and insight towards new methodology and advancement in teaching learning process.

Innovative learning Tools and E- resources:

There are various innovative learning tools and e- resources in this age of Science and Technology. The need of the hour is to explore best suited technology and update the content to use it in the classroom. The use of technology in the classroom motivates students and teachers to increase productivity, facilitate interaction. Integration of technology in education is practiced when it is used as an extension of human capabilities.

Web Blog

Web blog is a user-generated website where entries are made in journal style and displayed in a reverse chronological order. The term “blog” is a mingling of the words web and log. Blogs provide comments or news on a particular subject, some function as more personal online diaries. The modern blog evolved from the online diary, where people would keep a running account of their personal lives. Most such writers called themselves diarists, journalists. Blogs can be hosted by dedicated blog hosting services, or they can be run using blog software, such as Word Press, Movable Type, blogger or Live Journal, or on regular web hosting services, such as Dream Host. Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art (art log), photographs (photoblog), sketchblog, videos (vlog), music (MP3 blog), audio (pod casting) are part of a wider network of social media.

Here are some recommendations for good education blogs:

- AusMacEd - Australian educators using Macs, iPods & iPhones
- Digital Chalkie - An excellent blog by Australian educators
- Disordered Cogitations - Ruminations and ramblings of an information technology squatter.
- Infinite Thinking Machine - ideas to help teachers and students thrive in the 21st century
- Learning TRENDS - Elliott Masie's official blog
- The Unreasonable Man - thoughts on developments in Science, Technology and Education.
- Interaction designers coffee break - blog on creating effective user interfaces
- Official Google Blog - always good to know what google has up their sleeve
- Richard Culatta's blog - thoughts on educational technology and learning innovations (a shameless plug for my own blog :-)
- Rick West's Blog - Blog from an experienced instructional designer

Micro blogging and Twitter for Learning

Micro blogging is a form of multimedia blogging that allows users to send brief text updates (say, 140 characters or fewer) or macromedia such as photos or audio clips and publish them, either to be viewed by anyone or by a restricted group which can be chosen by the user. These messages can be submitted by a variety of means, including text messaging, instant messaging, email, MP3 or the web. The content of a micro-blog differs from a traditional blog due in that it is typically more topical, smaller in aggregate file size (e.g. text, audio or video) but is the same in that people utilize it for both business and individual reasons. Many micro-blogs provide this short commentary on a person-to-person level, or share news about a company's products and services.

Social Book marking

Social book marking is a web-based service to share internet bookmarks. The Social book marking sites are a popular way to store, classify, share and search links through the practice of folksonomies techniques on the internet. In a social bookmarking system, users store lists of internet resources that they find useful. These lists are accessible to the public or a specific network, and other people with similar interests can view the links by category, tags, or even randomly. Some allow for privacy on a per-bookmark basis.

Wiki

A wiki is a type of website that allows users to easily add, remove or otherwise edit all content, very quickly easily, sometimes without the need of registration. It provides free space to write, group projects etc. It also allows for linking among any number of pages. This ease of interaction and operation makes a wiki an effective tool for mass collaborative authoring. A wiki enables documents to be written very collaboratively, in a simple markup language using a web browser. A single page in a wiki is referred to as a “wiki page”, while the entire body of pages, which are usually highly interconnected via hyperlinks, and is “the wiki”. A wiki is an uncomplicated, easy to use user maintained database for creating, browsing and searching information. In a wiki pages can be created and updated easily.

RSS (Really Simple Syndication)

RSS is a web feed format used to publish frequently updated digital content, such as blogs, new feeds or podcasts, vodcasts etc. Users of RSS content use software programs called “feed readers” or “feed aggregators”. The user subscribes to a feed by entering a link to the feed into the reader program. The reader can then check the user’s subscribed feeds to see if any of those feeds have new content since the last time it checked and if so, retrieve that content and present it to the user.

Podcasting

Podcasting is a fusion of two words : iPod, Apple’s popular digital music player, and broadcasting. Podcasts are basically digital audio programs that can be subscribed to and downloaded by listeners by RSS (Really Simple Syndication). It can be accessed on an array of digital audio devices, like MP3 players, desktop computer, laptops, mobiles etc. They can be easily produced with any computer having a soundcard; microphone, recording software and an internet connection. Though podcasters’ web sites may also offer direct download or streaming of their content, a podcast is distinguished from other digital media formats by its ability to be downloaded automatically. Some good podcasts are:

- EdTechTalk - podcast about educational technology
- HBR Ideacast - an excellent podcast from Harvard
- Language Learning Podcast
- Technology Podcast

Instant Messaging

An instant messaging application allows one to communicate with another person over a network in relative privacy. There are many options like Gtalk, Skype, Meetro, ICQ, Yahoo! Messenger, MSN Messenger, Waytosms.com and AOL for instant messaging. You can add associates to a contact list or buddy list, by entering their email address or messenger ID.

Text Chat

Internet Relay Chat (IRC) and other online chat technologies allow users to join chat rooms and communicate with many people at once, publicly. Users may join a pre-existing chat room or create a chat room about any topic. Whether you are in another person's chat room, or one you've created yourself, you are generally free to invite others online to join you. This facilitates both one-to-one communication and many-to-many interaction.

Internet Forums

Originally modeled after the real world paradigm of electronic bulletin boards of the world before Internet was born, internet forums allow users to post a "topic" for others to review. Other users can view the topic and post their own comments in a linear fashion, one after the other. Most forums are public, allowing anybody to sign up at any time. A few are private, gated communities where new members must pay a small fee to join for example the Something Awful Forums.

Virtual Classrooms

There is also an increased use of virtual classrooms (online presentations delivered live) as an online learning platform and classroom for a diverse set of education providers such as Fox School of Business for Temple University, Grades Grow, Minnesota State Colleges and Universities, Ben Astrum Center of Regulatory e Training, and SACHEM. Webex is a Cisco Web Meetings and Collaboration Solution. The platform has worked for educational institutions because of real time collaboration using an interactive whiteboard, chat, and VOIP technology that allows audio and video sharing. In distance learning situations, while replacing the classroom with features, institutions have also looked for security features which are inherently strong in a Cisco powered collaboration environment. The downside is that Webex is not free platform like WiZiQ or Moodle, and fees are paid per host of a classroom or a meeting.

Computer-Aided Interaction , Assessment And Learning Design

CAI refers to the application of computer software to address student needs. It involves online interaction between a learner and a computerized delivery system. CAI programs use tutorials,

drills , question-and-answer session to present a topic or to test students performance. CAI helps in :Assessing students ability with pre test also progress with post test Providing game based drills to increase learning enjoyment Repetition of learnt material, tutorials, lessons, assignments according to the need wish of learner.

Computer-aided Assessment (also but less commonly referred to as E-assessment). Ranging from automated multiple-choice tests to more sophisticated systems is becoming increasingly common. With some system, feedback can be geared towards a student's specific mistakes or the computer can navigate the student through a series of questions adapting to what the student appears to have learned or not learned. The best examples follow a Formative Assessment structure and are called Online Formative Assessment. This involves making an initial formative assessment by sifting out the incorrect answers. The author/teacher will then explain what the pupil should have done with each question. It will then give the pupil at least one practice at each slight variation of sifted out question. This is the formative learning stage. The next stage is to make Summative Assessment by a new set of questions only covering the topics previously taught.

The term **learning design** has sometimes come to refer to the type of activity enabled by software such as the open-source system LAMS which supports sequences of activities that can be both adaptive and collaborative. The IMS Learning Design specification is intended as a standard format for learning designs, and IMS LD Level A is supported in LAMS V2.

Readymade Websites

Educational websites provide a readymade matter for educational purpose. Only what you need to know is the address of the website in relation to a particular subject. Some of the subject related websites are :

www.want2learn.com/grammer,

[http://bogglesworld.com/\(English\)](http://bogglesworld.com/(English)),

www.cellsalive.com/gallery.htm (Biology),

www.nationalgeographic.com,

- **www.mahatma.com, www.wikispaces.com**
- **www.pbwiki.com**
- **<http://en.wikiversity.org/wiki/Wikiversity>,**
- **<http://www.budtheteacher.com/wiki/index.php>**

- www.webquest.org
 - http://www.teach-nology.com/teachers/lesson_plans/computing/web_quests/
 - www.energyquest.ca.gov
 - <http://www.sbinak.com/webquest/>
 - <http://projects.edtech.sandi.net/grant/insects/>
 - www.toolsforeducators.com
 - www.teachnology.com
 - www.shelfari.com
 - www.bbc.co.uk/schools/
 - www.teachersdesk.org
 - www.mathkinz.com
 - www.sheppardsoftware.com
 - www.wordle.net
 - www.makebeliefscomix.com
 - www.slideshare.net
 - www.tech4learning.com
 - www.pics4learning.com
 - <http://drop.io/>
 - www.readwritethink.org
 - www.exploratree.org.uk
 - www.thirteen.org
 - www.eduspaces.com, (SocialSciences)
- <http://www.phy.ntnu.edu.tw/jawa/index.html>(physics),
<http://euclid.math.fsd.edu/Science/highsch.html>(Mathematics),
<http://www.thegateway.org/>, (the gateway to educational materials is a Consortium effort to provide educators with quick and easy access to thousands of educational resources found on various federal state, university, non-profit and commercial internet sites) and so on.

These websites provide students and pupil-teachers a directional initiation to learn about the world of information already available. On the educational websites, one finds subject material and general intelligence. They need to click on the hyperlink to browse the plethora of information well-bound and linked.

Email documents

Communication through electronic mail (email) has emerged out to be an important way of communication. It facilitates the sharing of ideas, information and experiences with others. Through this medium, information could reach the receiver within minutes. Just connect to the internet, open a new mail account, go to compose mail, compose it and send. You can also attach files and send them as attachment. This helps us retain the original form of the data. Word

documents, power-point presentations, PDF files, internet stored pages..., all sent within minutes. Try to use rediffmail (www.rediff.com), yahoo mail (www.yahoo.co.in); hotmail (www.msn.com); Google mail (www.Gmail.com) websites which given an easy access to this facility.

Readymade Power-Point Presentations and Web Pages

Being teachers and teacher educators, we need to link our lessons with latest knowledge in our fields. But, do we have enough time to move for collecting material from various sources? Content from the web is doing wonders for us. Readymade power points slides save a lot of our precious time, hence, giving opportunity for action research and, of course, more time for our personal life. These power point slides and special web pages are helpful in providing updated matter to the students and in a better understandable time saving form. Also encourage your students to go for searching power – point presentations for the technology based lesson plans they need to transact and also for their future professional life. Just add ‘.ppt’ to your searches and enjoy the difference

Readymade Programs / Softwares

Specially made software could be downloaded from Internet to work. These software’s work on the policy of self-learning. They guide and instruct the users in order to work in right direction and motivate to work for the concept of ‘mastery learning’. Teachers and teacher educators need to guide the students in using such software. Geo Gebra: a free and multi platform dynamic mathematics software for schools that joins geometry, algebra and calculus. (<http://www.geogebra.org>), (Teach2000 is a vocabulary trainer that helps to memorize words in foreign languages, using multiple-choice questions and flashcards: <http://teach2000.memtrain.com/>).

Search Engines

Just wish and write in the search option box and click. In seconds, a list of the related websites would open, Browse them one by one to find the relevant information suitable to you. It could be the required website, images, videos, news articles documents and so on. We have been using this option to find matter about the topics, ordinarily not available in books. The quality of teaching and learning could be refined using search engines. These searches, many a time, lead to multiple information sources for the information seeker. To find the proverbial needle in this

haystack (or tiny fly in the web), search engines act as desired means. Some of the popular search engines are : www.google.com; www.yahoo.com; www.altavista.com; www.khoj.com.

Pattern Papers, Previous Question Papers and Syllabus from Websites

Many of us must have visited the website of Central Board of Secondary Educational (CBSE). This website (apart from other information) provides curriculum of Secondary and Senior Secondary classes in all the streams. Then for students and teachers, the website displays sample papers in all the subjects so that the pattern of the Board question papers could be glanced at, with planned blue-print and other drafts including scoring key for marking. These initiations not only help the students / teachers but also the teacher educators, who could easily correlate their teaching subjects and give the future generation teachers a direction / pattern to work upon. Also previous years' question papers are there for practice of the students and for pupil-teachers so that they could analyze the future pattern. Pupil-teachers take these resources helpful while constructing lesson plans, book reviews, achievement test record (ATR) [which focus on blue print, question paper and scoring key of achievement test.] and so on. Some important websites are www.cbse.nic.in/welcome.htm), www.ugc.ac.in/net/inside/papers.

On-line Encyclopedias and Dictionary

Struck with a difficult word, willing to know the meaning of the same, not willing to move from place of work, willing to know more about a term / concept, visit a website for on-line dictionary. Again electronic encyclopedias could be accessed, which are the storehouses of information. The websites containing encyclopedias help the teachers and students in gathering information about a particular concept so as to make the whole process of teaching-learning interesting. These websites are helpful in knowing different meanings of words in different forms. Some of the links to the different on-line dictionaries that can be used are : www.dictionary.reference.com;

www.dictionary.cambridge.org;

<http://encarta.msn.com/encnet/features/dictionary/dictionaryhome.aspx>.

www.britannicaindia.com

E-Resources for Information about related institutions

As teacher educators, we need to keep a track of changes in our related fields too. We must be in touch with related rules, regulations, ordinances etc. of the bodies which are in

link of our fields. For instances, regarding regulations about Teacher Education Institutions, National Council for Teacher Education provides every necessary information / modification. The best is to keep in touch through the website : www.ncte-india.org. Similarly www.ugc.ac.in (University Grants Commission); www.ncert.nic.in (National Council of Educational Research & Training); www.cbse.nic.in (Central Board of Secondary Education); www.higheredn.delhigovt.nic.in (Department of Higher Education), www.icsr.org. (Indian Council of Social Science Research), www.icpr.in (Indian Council Of Philosophical Research) and so on provide information relevant to their fields.

Information about Boards/Universities and online admission procedures

At this stage, when educators have to deal with students, who are graduates and post-graduates, our pupil teachers and we also are in the process of enhancing our educational qualifications. We need to find information (which could be browsed) about the universities offering various courses. The admissions procedures of many universities are on-line now. Hence, learning about the internet is unavoidable. Also, we need to be in touch for information about courses in education, with our affiliating board / university for updated information. Many a time, useful information is uploaded on the website of the School Board / University for public view. Such websites need to be visited regularly as www.ipu.ac.in(Guru Gobind Singh Indraprashta University);www.amu.ac.in(Aligadh Muslim University);www.bhu.ac.in(Banaras Hindu University); www.du.ac.in (Delhi University); www.jmi.nic.in (Jamia Millia Islamia); www.ignou.ac.in (Indira Gandhi National Open University); <http://www.cisce.org> (Council for the Indian School Certificate Examination).

E-Resources for Information about seminars, conferences and workshops

Many websites are available on internet which are useful in obtaining information about seminars, workshops and conferences. These events are very useful in professional development of teachers as well as for teacher educators too.

www.seminarinformation.com

www.envfor.nic.in

www.eventsdu.ac.in

www.iimahm.ernet.in

www.asklaila.com/events/seminars/city

www.idc.iitb.ac.in/events/aboutworkshop

E-Resources for Information about daily utilities

Being in link with educational institutions, we necessarily come in contact with the students who act as consumers of various necessary services. We and our institutions are also consumers on our part. We need to move towards various commercial institutions for various services such as with banks, railway booking counters and so on. Instead of wasting our time moving towards them and standing in long queue, just click related website, Yes! It is possible through Internet. Using Internet we can safely transit with Banks www.onlinesbi.com (State Bank of India); www.indianrail.gov.in (reservation & information about railways), www.licindia.in (Life Insurance Corporation of India); www.delhigovt.nic.in (official website of Delhi Government); the list is long, we can also book hotel rooms, cinema tickets, purchase daily necessities, order books, etc.

IQ Sim Technology

IQ Sim develops innovative and interactive web-based simulator quality management tools that improve:1) the teaching quality management processes, and 2) the learning environment in professional education and training programs. The tools improve learning environments by enabling teaching of quality management through activation of prior experiences, demonstration of skills, application of skills, and inclusion of skills into real-world descriptions.

Learning object repository

Online repositories or collections of learning objects that target professional education, student needs to explore and know.. A learning object can be as small as a paragraph or as large as a complete online course and come in the form of Text files, simulations, JAVA, Flash, QuickTime movies etc. Learning objects have arisen in response to the students need for high-quality, reusable instructional materials that are organized to be easily searchable. Online search engines that search the whole web simply bring back too many results. Instructional materials like policy guides, assignments, simulations, websites, tutorials, matrices and other kinds of formats and media expressions are easier to find from within a contained collection.

Advantages of E-resources

There are a number of benefits of E-resources:

- **Any Time:** A participant can access the learning programme at any time that is convenient – not just during the specific 1-3 hour period that is set for a conventional course. The episodes can be quick snatches at odd times or long late-night sessions. Cross-time-zone communication, difficult to arrange in real time, is as easy as talking to someone across town when using the Internet.
- **Any Place :** The participants do not have to meet. That means they can be anywhere. International sharing is feasible. Individual can log on at work, home, the library, in a community learning centre or from their hotel when traveling.
- **Asynchronous interaction :** Unlike face-to-face or telephone conversations, electronic mail does not require participants to respond immediately. As a result, interactions can be more succinct and to the point, discussion can stay more on track, and people can get a chance to craft their responses. This can lead to more thoughtful and creative conversations.
- **Group collaboration :** Electronic messaging creates new opportunities for groups to work together, creating shared electronic conversations that can be thoughtful and more permanent than voice conversations. Sometimes aided by on-line moderators, these net seminars can be powerful for learning and problem-solving.
- **New educational approaches :** Many new options and learning strategies become economically feasible through online courses. For instance, the technology makes it feasible to utilize faculty anywhere in the world and to put together faculty teams that include master teachers, researchers, scientists, and experienced professional developers. Online courses also can provide unique opportunities for teachers to share innovations in their own work with the immediate support of electronic groups and expert faculty.
- **Integration of computers :** The online learner has access to a computer, so computer applications can be used without excluding some participants. This means, for instances, that a mathematical model implemented a spreadsheet can easily be incorporated into a lesson and downloaded so all participants can run, explore, and refine the model and then share their findings and improvements.

- **Cost effective** : E-Resources provides Virtual learning environment, shares lesson among schools, reduce material cost, reduce travel / accommodation costs etc.
- **Consistent** : E-Resources provides central control of content, same quality of content for all, same quality of education for all etc.
- Thus we can conclude that these e-learning tools are a practical, inexpensive and uncomplicated method for learning online. They are available to one and all and are great for propagating e-learning.

Suggestion For Building E-Learning Culture

- Teacher educators must have essential knowledge of Information and Communication Technology.
- Teachers should develop knowledge and skill in using E-Resources.
- Teachers try to facilitate learning with internet and create e-learning opportunities in pupil teacher and ultimately in students of elementary level.
- Teacher Educators helps pupil teachers in being self-motivated, self-directed and self-regulating while using e-learning for their knowledge inculcation and up gradation.
- Administrator should create e-learning environment and provide Information and Communication Technology infrastructure in their schools and colleges.
- Administrator should provide Internet and other resources for students free of cost.
- Orientation and Refresher courses on information and communication technology must be organized regularly by Regulating and concern affiliating bodies like NCTE,NCERT,SCERT'S,UGC and NUEPA for teacher educators and in-service teachers of elementary level.
- Integrating ICT can make a real difference in how teachers teach. It enables the teacher to spend more time with individual students, less time teaching to the whole class and allows students to carry out mere independent work.
- In service training and motivation should be provided to teachers for increasing their teacher effectiveness.

- Training should be provided to teachers as regards the use of media, especially ICT, because with the advent of acute modernization pupils are supposed to be more well-versed in the use of computers than teachers.
- Staff development programs should be held quite often for teachers to keep them up to date with the latest technologies in education.
- Teachers must be provided with ‘On the job training’ in the use of ICT in subject – classes individualization and differentiation of classroom work and managing personal and performance date of pupils.
- Time should be provided to teachers for planning, learning about implementing technology applications.
- The school administration should provide time to teacher for ongoing professional development since incentives (such as job security, financial help) may be offered to teachers to use technology as they need to prepare students for the technological work place of the future, enables teachers to spend more time with individual students, use time lecturing to the whole class and allows students to carry out more independent work.
- Integration of ICT should be taken seriously if we want to transform our education system.
- Specific curricula practices, skills attitudes and policies can be enhanced through the use of technology.
- ICTs facilities and equipment should be provided in teacher training institutions. Elementary schools also be equipped with these known-how’s so that trainee teachers are provided with technology rich environment during their teaching practice.

References

- Accascina. G. (2000), Information Technology and Poverty Alleviation. Draft Paper. UNDP-APDIP.
- Keyes, J. Infotrends (2003), The Competitive use of Information, McGraw-Hill, Inc.
- Madon Shirin, The impact of computer based information systems of rural development, University of London.
- National Curriculum Frame Work for School Education(2006) NCERT, New Delhi

Saxena, Jyotsna, et al. (2009) *ICT In Professional Education*, New Delhi-APH Publication Corporation.

Seck, Diery (2005), *The Governance of the Global Development Network*. Global Development Network Conference. Bonn, December 6-8.

Woods, R. (2006), *Communication, Technology and the Development of People*. Rutledge, London.