# E-Education in Modern Era

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**Abstract**

*Digital learning in developed countries provides the learners with an interactive mode in a successful way, but in the case of developing countries such as India access to computer is limited to a few elite urban areas. Erratic power interruption, unaffordable investment cost for a normal citizen and obsolete software are some of the bottlenecks preventing for popularization of the eEducation. Although India tops the global list of software experts including teaching, their expertise could not be optimally utilized for the spread of eEducation due to the above-mentioned shortcomings. eEducation is about bringing education to people instead of taking people to education. It includes delivery of subject courses and training via electronic media. This paper addresses the important aspects and merits of eEducation through distance mode at an affordable cost for developing countries such as India.*

**Keywords :** Digital Learning, eEducation, eLearning, Internet, Multimedia, Virtual University, Audio Visual effect, Remote Student, Online, Broad Band, Web Based, VSAT

## 0. Introduction

Major players in Information Technology and IT related services are governed by various States in India. In system software, Karnataka is leading; in e-Governance, Andhra Pradesh, IT Services, Tamil Nadu and e-Commerce, Maharashtra. For a knowledge society, the most important IT related service is e-Education.

The concept of eEducation stems from the concept of eLearning. In India, external education is fast gaining prominence. Universities like IGNOU are doing very well in the field of distance education. With eLearning, distance education is conducted through electronic components like computers, Internet, CDs etc. This leads to the formation of a virtual university, which means that there are no actual classrooms, teachers or textbooks, but it gives the impression of studying in a university.

## 1. E–Education Scenario in India

Compared to the West, of course, eLearning is still lagging behind in India. It needs to pick up, if education needs to have far reaching implications at the macro level in the country. In India, the problem is that eEducation and 'virtual university' has been restricted to things like video conferencing. Because these things have not worked out, eEducation is not doing that well. For India, to do well in this area, value-additions and better facilities in eEducation will have to come in the future. Some of the initiatives towards e-Education are Pratham, India, eGurukool, India, Zee interactive, India , Schoolnet, India and e-learning centre, UK

### 1.1 Global Requirement

In general, the Internet has been acclaimed as the Information Super Highway of the Twenty First Century, implying that information on any topic can be accessed through a few clicks of the computer mouse.

WWW, Web enabled information, Radio Communication, VSAT, Local Area Network(LAN) and Wide Area Network(WAN) system are some of the forms by which eEducation can be taken from Harvard, Oxford universities curriculum to a common man in any part of the world. Further, it is comparatively very fast, even class room demonstration through electronic media at multi-user end at an affordable cost. It is one of the latest tools by which online foreign university degrees can be acquired by sitting in one's own residence. In this regard, Broad Band Technology is one of the powerful tools available to enhance the facilities of various universities to implement eEducation at the user end globally.

Increasing global connectivity is opening up new possibilities for delivering education over networks. Some countries are providing educational content on the web.

- Canada's Schoolnet
- UK's National Grid for Learning

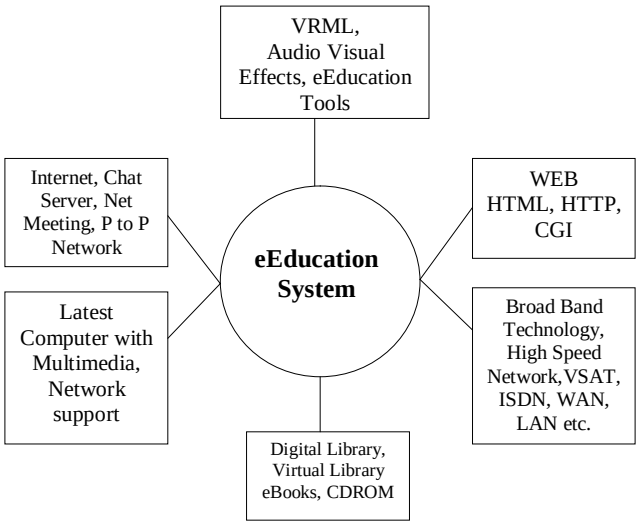
Virtual university initiatives will become increasingly important as global connectivity improves and telecommunication costs come down. Examples of virtual universities are:

- Monterrey, Mexico
- Western Governor's initiative
- African Virtual University
- NIIT net varsity

## 1.2 Components of eEducation

More emphasis on Virtual Reality Modeling Language (VRML) will enhance the understanding of the users at the user end. eEducation is closely related to Web. The Web is based on a three part architecture.

1. HTML–Hyper Text Markup Language, the format for web pages provides both formatting and hyper-linking.
2. HTTP–Hyper Text Transfer Protocol, the protocol to communication between web servers and browsers.
3. CGI–The Common Gateway Interface, the interface for invoking programs from web servers.



The following are the some of the components in an eEducation system:

1. High quality content development
2. Network computing, Internet technologies & Audio/video electronics
3. Reliable & high standard course materials
4. Scalable highly reliable servers
5. Broad Band technology
6. Latest software tools
7. Proper administration like Security, Examinations etc.
8. Web based virtual library
9. Digital library
10. Adoption of Global standards

In a computer based courseware the following significant aspects are to be taken care of:

1. The system should be user friendly
2. Students should be able to use the system at their own pace
3. The system should be adequately interactive in an intelligent way
4. It must be easily portable and accessible
5. With the help of interaction with industries invoking online projects/ live projects for engineering faculties to meet the global need

### 1.3 Hardware requirements

Better and latest PC with VGA monitor capable of displaying 256 colours about 20 MB free hard disk, GUI based OS, high speed switched fiber optic network through electronic class rooms & studios are some of the hardware accessories needed for an effective eEducation system. For successful eEducation system, the following aspects are to be taken care of.

1. The courseware should not only cover conceptual skills but also give importance to both cognitive and procedural skills
2. The virtual tutor must provide sufficient number of simple examples with hints and guidance
3. Client Server technology in computing is to be provided
4. High performance computing architecture is needed
5. Learning network with a high bandwidth switched intranet is also necessary

## 2. Various Strategies in Global Scenario

IIITS - Intelligent Interactive Tutoring System for Engineering and Science subjects.

- Leading Universities such as Florida, Phoenix, Stanford, and British Open University are already using Asynchronous Learning Networks (ALN) techniques.
- Intel Corporation has done extensive work in ensuring that today's students have access to the IT resources, skills and experiences they need on a global level. IT has linked schools, colleges and

universities all over the world to hardware vendors, software developers & service providers. Integrated Virtual Learning Environment (IVLE) System was already implemented at National University of Singapore (NUS).

- Advanced Educational Software can offer pedagogical improvement on the traditional lecture tutorial laboratory paradigm.

### 2.1 Merits of eEducation

- Education software can offer pedagogical improvement on the traditional lecture tutorial laboratory paradigm. Multimedia based education software or courseware has many advantages; Multimedia information technology is better than the traditional methods because it stimulates various senses. The Interactive Multimedia courseware allows the student to explore in a sequential manner or to move about different topics, reviewing a topic several times; even they can skip some of the areas.
- Computer assisted learning provides an exciting experience; audio visual effects added to a text can make even the toughest lessons fun and easy to understand.
- Real time interaction with remote students is achieved using electronic conferencing software.
- Online Quizzes also help the students to assess their own progress in learning.
- A regular system of e-mail and Web Based Query is a quick response system.
- As the major libraries have gone electronic and Web Based, one can now browse through a particular article or a book from his own PC.
- In India, National Institute of Science Communication and Information Resources(NISCAIR) has electronically connected all the libraries together through ATM network.
- Web Based setup tools, resources and techniques are more helpful for peer-to-peer type of learning and interactions.

## 3. Conclusion

- It is expected that Virtual Environments will become wide spread by the year 2020. Such environments will greatly change the way we learn and do things. The students must feel comfortable with IT related eEducation in order to build a stronger India. It's only a beginning but a lot still needs to be done. The global demand for new knowledge and skills are the necessity for life long learning and it will drive the growth of eEducation.
- We have to choose specific areas for concentration on eEducation as a new and emerging technology. This needs to be done as a policy decision.
- The National policies and priorities must be reflected in the course curriculum.
- A national drive on eEducation must be started for developing the reading material, suitable to the Indian conditions.
- Above all last but not the least "Moral and spiritual values to eEducation should be inculcated.
- A very unique problem, because of which eEducation has not worked here, is the fact that eEducation is mainly in English, whereas most of the population in the country is conversant with vernacular languages. This has made the penetration of eEducation problematic in the country. The digitalized text has to come in vernacular languages as well, to make it successful. C-DAC, NIC like organizations may focus on e-Curriculum in vernacular languages as a thrust area for widening eEducation system in India.

- Also it needs time and a lot of groundwork has to be done, before it is applied in a massive way. In case, if the government makes huge investments in this area and to the satisfaction of population at large and affordability has also become big hurdle therefore, trying to make it possible, there are chances that we will fall upside down. Infrastructures like VSAT, Internet penetration, and other aspects have to be worked well, for it to work out.

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