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**Paper: Z**

## **ICT based Learning Environment**

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### **Abstract**

*The paper discusses the new approach of imparting education through Information and Communication Technology. The author also briefly deals with various aspects of e-education, especially in higher education. It also discusses the tools of e-education and perspectives of different components of e-education system.*

## 1. Introduction

Technology has dominated all spheres of life. The education is also one of the fields where we can see the impact of information technology. Education and library are twin sisters. Over several years the education process has seen drastic changes in imparting knowledge.

During the last few years it has been seen, an almost exponential development and growth of the digitalization, automation and the internet, with little sign of a slow down. No longer is internet access restricted to a few select education establishments it is now available to anyone in their place of work, local libraries, the internet cafes and even in the home. It is the information that has become the key to the success in different walks of life.

## 2. What's the 'e' is about?

E- Education is electronic education, but the 'e' in E-education has a number of other implications as mentioned below:

<b>Exploration</b>	E- Learners use the web as an exploratory tool to access a plethora of information and resources.
<b>Experience</b>	The web offers e-learners a total learning experience, from synchronous learning to threaded discussions to self-paced study.
<b>Engagement</b>	The web captivates learners by enabling creative approaches to learning that foster collaboration and a sense of community.
<b>Ease of use</b>	Not only is the web easy to use for learner who are already familiar with the navigation capabilities of the medium, but to learning providers as well, as they can easily make content immediately available to learner across all technical platforms (Windows, N4AC, Unix, etc.)
<b>Empowerment</b>	The web puts learners in the driver's seat with a set of tools that enables personalization of content and allows learner to choose the way in which they best learn.

### **3. What is E-education?**

The term e-education means electronic education and it is basically the online delivery of information communication, training and learning, e-education seems to have a multiplicity of definitions to each of its users and the term seems to mean something different. A very comprehensive definitions has been given by the Cisco system, which defines e-education is Internet-enabled learning, components can include content delivery in multiple format E-education provides faster learning at reduced costs, increased access to learning and clear accountability for all participants in the learning process in today's fast- paced culture, organizations that implement E-education provide their work force with the ability to turn change into an advantage.

### **4. Why E-education?**

- Learning is self paced and gives students a chance to speed up or slow down as necessary
- Learning is self-directed, allowing students to choose content and tools appropriate to their differing interests, needs and skill levels
- Accommodates multiple learning styles using as variety of delivery methods geared to different learners, more effective for entrain learners
- Designed around the learner
- Geographical barriers are eliminated, opening up broader education options
- 24/7 accessibility makes scheduling easy and allows a greater number of people to attend classes on demand access means learning can happen precisely when needed travel –time is reduced or eliminated
- Overall student costs are comparatively less (tuition, residence, food)
- Potentially lower costs for companies needing training and for the providers
- Fosters greater student interaction and collaboration

- Fosters greater student/instructor contact
- Enhances computer and internet skills
- Draws upon hundreds of years of established pedagogical principles
- Has the attention of every major university in the work, most with their own online degrees, certificates and individual course

#### ***4.1 Education requires a shift in***

- Methodology from teacher centered to student centered
- Resource based teaching to resource based learning
- Assessment from solely product, to include process

## **5. Need for E-education**

Due to the social technological and economical transformation, e-education has become an important aspect of learning as globalization encompasses local economies like never before; the development of a skilled work force becomes an international concern. The *WR Hambrecht* views some general e-education benefits as seen from the corporate viewpoint.

The new global economy poses more complex challenges to workers, requiring higher levels of education, computer literacy, critical thinking, information analysis, and synthesizing skills. Academic and corporate environments must be redesigned to adequately prepare people to function in an information society.

Organizations and training providers need to evaluate whom they train and how. Today, traditional students in higher education make up less than 20% of all students. The fastest growing group attending higher education institutions are working professionals. This new group of “learning adults” is seeking education principally to advance their careers and increase their salaries. For universities and business-to-consumer (B2C) training providers, these individuals are excellent candidates for education delivered to their homes or offices.

The emergence of online education is not only a matter of economic and social change, but also of access. One estimate states that, *by 2003, the number of Internet users worldwide will grow to about 502 million, up from 87 million in 197 (1)*, through its increasing reach and simplicity of use.

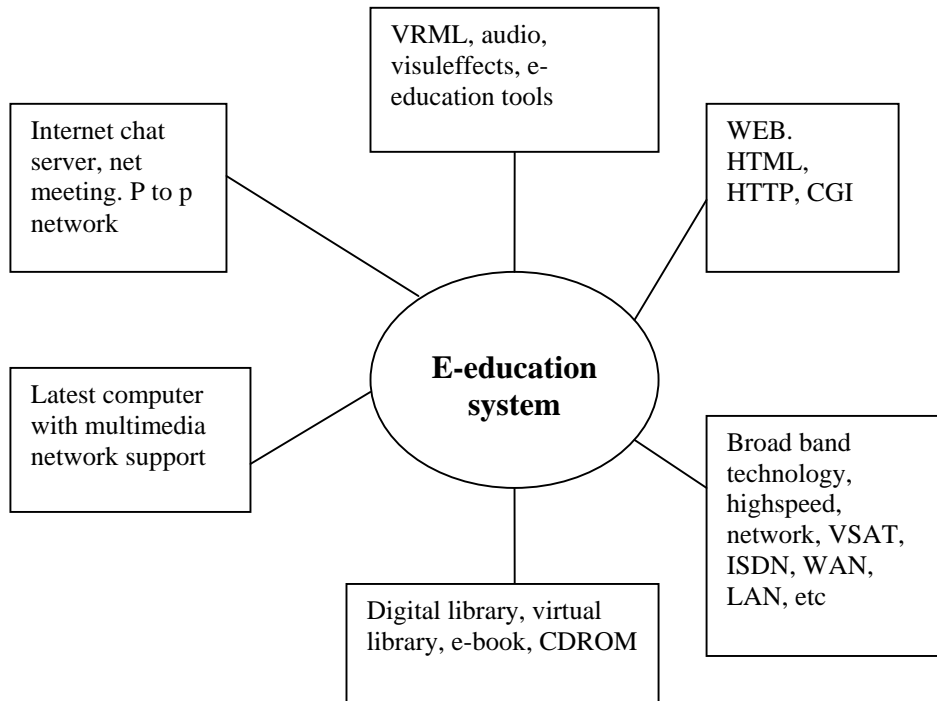
## **6. Area of E-education**

This new mode of education promises to transform the experience of the classroom, on a number of fundamental ways. By augmenting traditional textbook material with online resource. Lectures are being delivered through rich multimedia and interactive content and by extending student discussions beyond the walls of the classroom via a wide range of new communications platoons supporting inter classroom collaboration. As human capital becomes the chief source of economic value, education and training become lifelong endeavors for the majority of workers. E-education offers us potentially less expensive, more convenient, and richer ways of becoming educated, and of coming into contact with more diverse groups of fellow learners than ever before.

## **7. Instruments of E-education**

To take the better opportunities of e-education, we have to know the tools associated with it. Some of them are displayed in the figure shown below:

- E-mail
- Real time conferencing
- Desktop vide



*E-education system*

## 8. Designing Aspects of E-learning

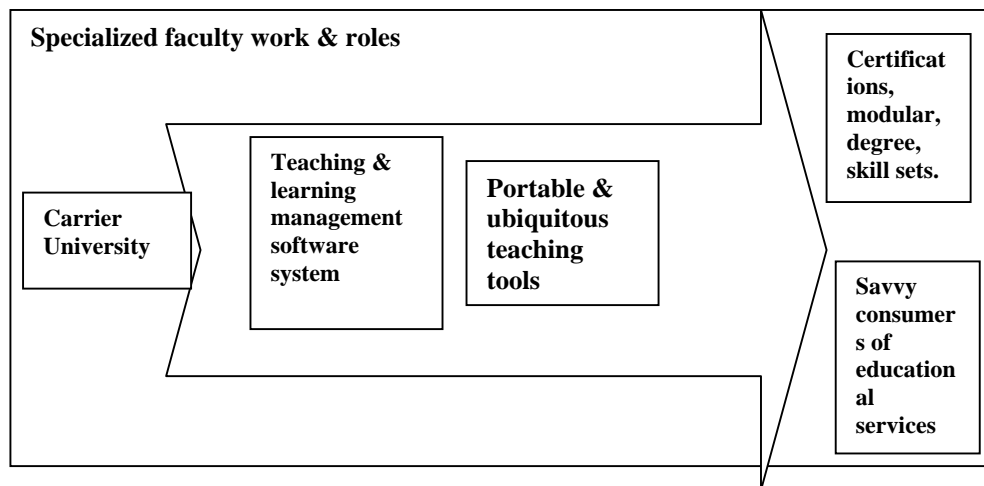
Linking, analyzing and synthesizing at a conceptual level helps to facilitate learning, and to capture and manage the knowledge that results from learning. Relationships require interaction, including both intellectual and personal relationships. And strategy requires a synthesis of information about procedures and context, and the experience and knowledge against with to measure and evaluate them.

### 8.1 Creation of course modules

The quality of the e-learning experience follows from the quality of this of the course modules and of the interactions among students and instructors that make up on-line courses. The faculty members, students, and instructional staff who design and produce on-line courses modules need access to powerful, easy-to-use authoring tools and reliable pedagogical strategies. Responsibility for this element is distributed among all levels of the University, from Individual employees and students to departments, colleges, and central university support facilities.

### 8.2 Management of course modules

Innovative data base management practices are required to facilitate efficient revision and re-purposing of course modules and to foster sharing of modules among course authors and programs. Responsibility for this element is shared among departments, colleges, and central university support facilities.



### 8.3 Delivery of courses

At the core of the common-learning environment is a delivery system that makes course modules available online, mediates interactions between instruction and students, and helps the university to efficiently manage student records. Primary responsibility for this element resides with central university support facilities

#### ***8.4 Delivery of support services***

All Penn State students – on campus or off – gets access to technical support, library resources, advising services, and other key aspects of the university experience. A common e-learning environment facilitates this access. Primary responsibility for this element resides with central university support facilities

#### ***8.5 Key players in distance education***

The roles of key players in the distance education enterprise and the challenges they face area as follows:

- Students: The primary role of the student is to learn. They require motivation, planning, and an ability to analyze and apply the instructional content being taught.
- Faculty: The success rests squarely on the shoulders of the faculty. Special challenges control those teaching at a distance. the faculty must.
- Develop an understanding of the characteristics and needs of distant students
- Adapt teaching styles taking into consideration the needs and expectations of multiple, often diverse, audiences.
- Develop a working understanding of delivery technology, while remaining focused on their teaching role.
- Function effectively as a skilled facilitator as well as content provider.
- Facilitators: Act as a bridge between the students and the instructor. To be effective, he must understand the students being served and



the instructor's expectations. He must be willing to follow the directive established by the teacher

- Support Staff: The silent heroes who supports service functions to include student registration materials duplication and distribution, textbook ordering, securing of copyright clearances, facilities scheduling, processing grade reports, managing technical resources, etc.
- Administrators: Influential in planning an institution's distance education program. They are consensus builders, decision makers, and referees. They work closely with technical and support service personnel and maintain the academic locus.

## **9. Various Modes of E-learning course**

At present the online courses can be offered in following modes:

- Online mode
- E-correspondence mode

Under online, mode, the learners are entitled to the following benefits:

- Access to virtual classroom in the website for collaborative learning experience via a host of interactive tools including chat, discussion forum, electronic white board and e-mail.
- Semester wise interactive courseware CD.
- Optional short duration contact program in each semester
- Facility top order the courseware books (optional)
- Access to infotainment section, providing links to latest news channels, book publishers providing facility to order books online, online games, greetings, music software downloads and certification.
- Facility to create a personal web page

Under e- correspondence mode, the learners are entitled to the following benefits

- Semester wise interactive courseware CD
- Courseware books
- Email –facility for interacting with the faculty members

- Optional short duration contact program.

There are a number of e-learning opportunities that need to be explored within the context of an overall national strategy.

## **10. Requirements for Implementing E-education**

Taking on board May of the points raised above there are some requirements for a successful implementation of E-education, clearly most of these need addressing before attempting to implementation any electronically based education system.

- Provision of free or low cost access
- Collaboration to be encouraged between various organizations
- Mixture of different teaching models
- Closer monitoring of individual student progress
- Provision of greater support to motivate students where needed s
- Standards require monitoring
- Readily scalable service with high bandwidth an availability

## **11. The Characteristics of a Modern University**

In addition to the disaggregating of teaching, universities in the years ahead will do the following:

- They will be challenged to remain intellectually free places seeking truth, defending those who tell, it and promoting the free flow of information and ideas
- A continuing distinction between them and competency-based vocational education institutions
- They will be institutions of both research and teaching
- They will be accessible 24 x 7 x 365
- Greater diversity of student background, staff/student ratios in some disciplines
- Relatively less government funding

- More internationalization, more entry pathway, ms more credit transfer
- More flexibility of enrolment delivery and academic progress
- More technological opportunities to disaggregate teaching and learning
- Continuing shifts in notions of curriculum ownership

### ***11.1 Tools***

- Teaching and learning management software systems can be linked to their back office administrative systems
- Web course management tool
- Student tracking and collaboration tools
- An entire suite of learning aids, personal bots will emerge
- Personal digital assistants
- Summarizers, finders, connectors, learners
- The wide gulf between students and practitioners will be narrowed by education coming to the desktop and practicing experts made available for testimonials, examples, actual observation of behavior through broadband methods

### ***11.2 Faculty***

- Highly more specialized researchers and content developers will complement each other
- Subsidy for reach through blind funding of faculty salaries will become more difficult once legislators realize that much of the delivery will come from elsewhere

### ***11.3 Environment***

- Tools for teaching and learning will come as portable and ubiquitous as papers and books are today
- Teaching and learning anywhere any time
- A larger percentage of content will age rapidly

- Alternate models for paying for education will evolve with less of government subsidies and more on the desk training paid by employers
- Students will be savvy consumers with substantive amount of choice
- Increased level of student activism
- Degrees may be obtained with a much increased level of institutional mix ( courses from multiple universities)
- Learning is moving off campus: to home, workplace, files, or wherever the learner is
- Students will pick up and piece together certifications, skill sets, and knowledge sets

#### ***11.4 Creating a space for learning***

- Designing strategies to introduce learners to each other
- Using effective teaching strategies
- Gaining agreement with the learners about rules, norms, and procedures for discussion.
- Using a free flowing and interactive content and structure.
- Encouraging students to evaluate information
- Encouraging students to analyze information
- Encouraging students to connect information

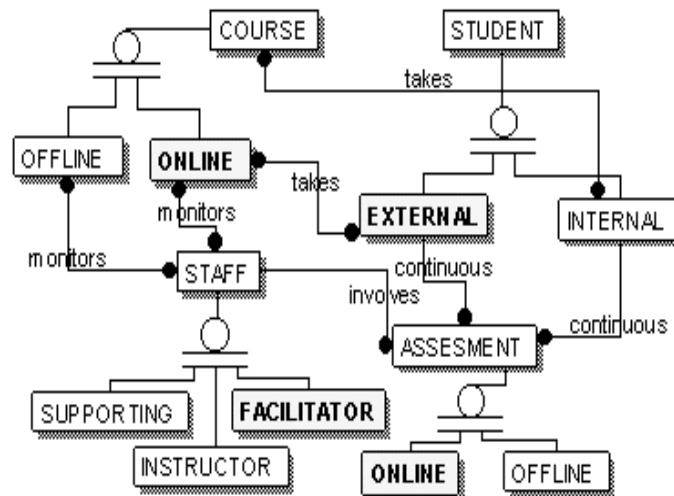
#### ***11.5 Basic grounds for initiating e-education***

- Exploring the vital role of different information technologies (print, audio, visual and digital) in the development of human and knowledge capital.
- Sharing policies, strategies, experiences and tools in amusing technologies for knowledge dissemination, effective learning and efficient education services.
- Reviewing the latest systems and products of technologies of today, and peek into the would of tomorrow and

- Exchanging information about resources, knowledge networks and centers of expertise

## 12. Changing Scenario

The aim of learning is to explore and to accumulate useful knowledge over and above faster copying, searching and distribute. This might be called e-linking, e-relationships and networks and e-enhanced strategy. The trend in the market would show that the on- line education is fast catching up. As per a report by UNESCO, there are approximately 80 million students enrolled in higher education program world – wide in 1999, of which 6150,000 are on – line. Australia alone enrolled 690,000 students in higher education coursed. In the US, which is coming up as a big base for on – line education, 710,000 students were enrolled during 2001 and estimated to touch 2.2 million for 2002. According to IDC a whopping 90 percent of the on-line learning marked is still untapped.



*A model for E-Education*

## 13. Conclusion

E-education is not entirely new concepts but has grown as the WWW has developed in each country E-education is taking roots for Indian students as

well. But first, it is important to understand exactly what we mean by e-education and quite simply it is education and training delivered and accessed via the internet. One of the major advantages of e-education is that one can access the best education in the world direct from the persons who wrote the courses for online study. In the 21<sup>st</sup> century, students may stay at home and taken distance education (synchronous and asynchronous) in their homes across the world. Geographic comparative advantage will shrink and shrink and shrink. More important, excellent students who could not be accepted as onsite students in pristine universities (due to lack of financing and considerations as to how many can fit into onsite classrooms) face new opportunities to get a prestige degree in their own homes. Education and society are effectively being re-engineered and are in turmoil because of economic and social forces. Both heavily influenced by technology. On line education is here to stay and the success of it is critical since it will decide how another communication revolution in the form of satellite providers will impact education.

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.

- We have to choose specific area for concentration on e-education 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 e-education 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 e-education should be inculcated.

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