E-Learning in Teacher Education

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Abstract : *E-learning plays an important role in the educational growth of a nation. In education, it develops higher order skills such as collaborating across time and place and solving complex real world problems. It allows the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time. E-learning can also plays a critical role in preparing a new generation of teachers, as well as upgrading the skills of the existing teaching force to use 21st century tools and pedagogies for learning. The present paper focuses on the concept of E-learning and Teacher education, Model of E-Learning, E-learning Categories for Teacher Development and Significance E-learning in Teacher Education.*

Keywords: *E-Learning, E-Education, Teacher Education, Pedagogy, Technology.*

Introduction

Science and Technology play an important role in our day-to-day lives. Without modern technology we can't step forward. Technology is the only problem solving instrument in various spheres of our lives. Now-a-days, anywhere anytime education is possible with the help of modern technologies, i.e., E-Education or E- Learning. E-learning is the changing trend in education. The modern technologies, particularly the internet, made education no longer limited to the four walls of the class room. E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems, whether networked or not, serve as specific media to implement the learning process. The term will still most likely be utilized to reference out-of classroom and in-classroom educational experiences via technology, even as advances continue in regard to devices and curriculum. E-learning may include the use of web-based teaching materials and hypermedia in general, multimedia CD-ROMs, websites, discussion boards, collaborative software, e-mail, blogs, wikis, test chat, computer aided assessment, educational animation, simulations, games, learning management software, electronic voting systems etc. with possibly a combination of different methods being used. E-learning is an approach to facilitate and enhance learning through and based on both computer and communication Technology. It is used to support distance learning through the use of WANS (Wide Area Net Workers) and may also be considered to be a form of flexible learning where learning is possible in no time. E-learning is also called 'online learning'. It is developed to apply information technology skills to education getting connected to the internet or any network. E-learning or Electronic learning is a general term used to refer to computer-enhanced or technology enhanced learning.

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Concept of E-Learning

E-learning is naturally suited to distance learning and flexible learning, but can also be used in conjunction with face to face teaching, in which case the term blended learning is commonly used. E-learning is a means of education that incorporates self-motivation, communication, efficiency, and technology. Because there is limited social interaction, students must keep themselves motivated. E-learning is a flexible term used to describing a means of teaching through technology. E-learning refers to the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance (Rosenberg, 2001; Wentling et al., 2000). In general, E-learning is the expression broadly used to describe "instructional content or learning experience delivered or enabled by electronic technologies" (Ong and Wang, 2004). Broadly, we can define it as "the use of the Internet, intranets / extranets, audio and videotape, satellite broadcast, interactive TV, and CD-ROM, not only for content delivery, but also for interaction among participants". Elliott Masie defines: "E-learning as the experience dimension of E-learning, which includes such factors as engagement, curiosity, simulation and practice". E-learning can be defined as the use of any of the new technologies or applications in the service of learning or learning support (Laurillard, 2006). E-learning means sharing knowledge using technology, computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include: web-based learning, computer-based learning, virtual classroom and digital collaboration. Content is delivered via internet, intranet/extranet, wireless telephonic, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. E-learning the use of the internet and related technologies for the development, distribution and enhancement of learning resources. E-learning is the acquisition and use of knowledge distributed and facilitated primarily by electronic means. This form of learning currently depends on networks and computers, but will likely to evolve into systems consisting of a variety of channels (e.g., wireless, satellite), and technologies (e.g., cellular phones, personal digital assistants) as they are developed and adopted. E-learning can take the form of courses as well as modules and smaller learning objects. E-learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time (Wentling, Waight, Fleur, Wang, and Kanfer, 2000).

Some popular definitions of E-Learning are as follows:

- E-Learning is instruction that is delivered electronically, in part or wholly, via a web browser, through the internet or an intranet, or through multimedia platforms such as CD-ROM or DVD (Hall, 1997).

- E-Learning is a structured, purposeful use of electronic system or computer in support of the learning process (Allen, 2003).

- E-Learning covers a wide set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes delivering content via the internet, intranet/extranet (LAN/WAN), audio and videotape, satellite broadcast, interactive TV, and CD-ROM (ASTD, 2001).

- E-learning is training delivered on a computer (including CD-ROM, internet, or intranet) that is designed to support individual learning or organizational performance goals (Clark and Mayer, 2003).

- Web-based training (an alternate term for e-learning) is the integration of instructional practices and internet capabilities to direct a learner toward a specified level of proficiency in a specified competency (Conrad, 2000).

Concept of Teacher Education

The National Council for Teacher Education (NCTE) defines teacher education as – A programme of education, research and training of persons to teach from pre-primary to higher education level. Teacher education is a programme that is related to the development of teacher proficiency and competence that would enable and empower the teacher to meet the requirements of the profession and face the challenges therein. According to Goods Dictionary of Education, Teacher education means, "all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively". Teacher education encompasses teaching skills, sound pedagogical theory and professional skills. Teacher Education = Teaching Skills + Pedagogical theory + Professional skills.

Teaching skills would include providing training and practice in the different techniques, approaches and strategies that would help the teachers to plan and impart instruction, provide appropriate reinforcement and conduct effective assessment. It includes effective classroom management skills, preparation and use of instructional materials and communication skills.

Pedagogical theory includes the philosophical, sociological and psychological considerations that would enable the teachers to have a sound basis for practicing the teaching skills in the classroom. The theory is stage specific and is based on the needs and requirements that are characteristic of that stage.

Professional skills include the techniques, strategies and approaches that would help teachers to grow in the profession and also work towards the growth of the profession. It includes soft skills, counseling skills, interpersonal skills, computer skills, information retrieving and management skills and above all life- long learning skills.

Four-Strand Model of E-Learning for Teacher Development

E-learning is defined as the use of the web or electronic networks capable of instant updating, storage/ retrieval, and distribution to:

- share instructional and information resources and expertise to enrich the learning environment;
- provide courses, learning applications, and solutions that go beyond the traditional paradigm of teaching and learning;
- combine with traditional or other teaching methods and styles in what is referred to as blended or hybrid learning; and
- provide informal learning opportunities and support for communities of practice.

Significance of E-Learning in Teacher Education

E-learning can be used as informative, situating, constructive and communicative tool in the process of education. E-learning also allows the creation of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time. E-learning in education develops higher order skills such as collaborating across time and place and solving complex real world problems. For improving the quality in teacher education e-learning plays an important role in the teaching- learning process.
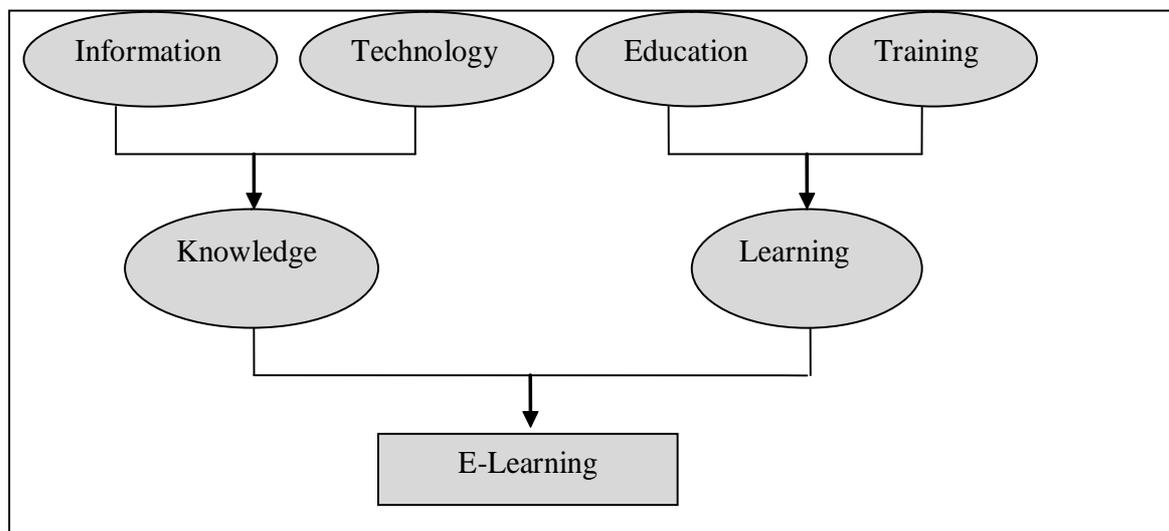
Figure 1 : E-learning Model - 1

Individualized Learning

Flexible study and personalized learning support. It can accommodate own learning style, cognitive style and learning approach. Individualized learning is safe, free from peer pressure, good for introverts and shy learners, develops self-discipline and builds self- confidence. It provides Intrinsic motivation: Challenged by competing with oneself (doing better next time), Curiosity (can explore new interesting facts without justifying into the group), Control (use own time and sequence, do not need to report to others), Fantasy (allowing oneself to daydream on certain aspects of the work).

Online Communities

E-Learning can bring teacher trainees, educators, specialist communities, experts, practitioners and interest groups together to share ideas and good practice, contributing to new knowledge and learning.

Collaborative Learning

E-learning offers a wide range of online environments to develop the cognitive and social skills of communicating and collaborating. It promote learner interaction through message boards, where students can post questions and answers; text chat or forums, where l earners can communicate outside the main classroom; and threaded discussions, where facilitators and students can discuss a given topic and review each other's responses.

Flexibility

Students may have the option to select learning materials that meets their level of knowledge and interest. Self-paced learning modules allow students to work at their own pace. Active Learning: Encouragement of independent and active learning, and self responsibility for learning. E-Learning is also "just-in-time" learning in which learners can choose what to learn when they need to learn it. Students are generally more 'on task' and express more positive feelings when they use computers than when they are given other tasks to do.

Tools for Educators and Teacher Trainees to Innovate

E-Learning offers a wide range of design tools to enable educators and teacher trainees to be innovative, creating and sharing ideas, or customizing learning resources for their own use.

Application Sharing

Application sharing is an open and conceptually simple service with a potential for dramatic increase in communication quality. Application sharing is considered an integrated part of an infrastructure for virtual teaming. It allows instructors and learners to work collaboratively on the same learning materials, either simultaneously or in sequence.

Virtual Learning Worlds

Teacher trainees can take part in active and creative learning with others through simulations, role-play, real world tools and devices, online master classes, or collaboration with other institutions or organizations. Simulations or virtual laboratories permit learners to work in teams to construct projects and complete them at their preferred pace.

Quality at Scale

E-Learning achieves economy of scale through wide access to digital resources and information systems, combined with quality through shared tools and resources, and common standards of design and innovation. Content can be delivered to a small or large number of learners with little effort.

Video and Audio Streaming

Streaming video and audio can offer exciting opportunities for online teaching and learning. As learning online becomes more of a common practice in education, streaming video and audio will play a bigger role in delivering course materials to online learners. Streaming files can be used to disseminate information to learners, and can also enable learners to see and speak with the facilitator via the Internet rather than b y telephone. Streaming media is also highly effective in motivating, training, and instructing.

Reusability of Learning Objectives in E-Learning

Much effort has been put into the technical reuse of electronically-based teaching materials and in particular creating ore-using Learning Objects.

Future of E-learning in Education

The use of e-learning has the potential to distribute opportunities for learning more widely and equitably across the teaching force. In future, e-learning will enrich education by providing borderless, space less, timeless and paperless education. It will narrow the gap between various facilities. It will enhance the flexibility and innovativeness of education. It will bring substantial change in the method of spreading knowledge to improve quality in education and hence will make teachers of global standards.

[Figure 2: E-learning Model - 2]

21
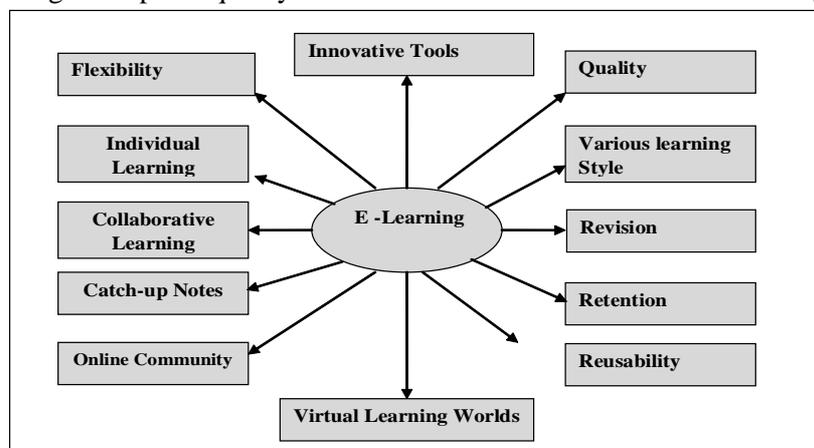
A new generation of learners is growing up with technology and will increasingly expect it to be deployed in undertaking training. E-Learning is becoming increasingly significant in education. More universities are gradually employing e-Learning into their educational programs- to increased organizational efficiency i. e. More time spent teaching, less time spent managing; to enhanced learning and teaching i .e. Stronger Professor and Student relationships via out of classroom communication (blogs, podcasts, discussion forums, IM) and online, searchable and shared learning materials including assignments, lectures and media-rich content that is accessible anytime anywhere; reduced running costs i.e. Reduction of costly and power-hungry computer labs with laptop student purchase programs and Wi-Fi infrastructure.

Conclusion

E-learning encourages both teachers and students to take personal responsibility for their own learning. When teachers succeed, it builds self-knowledge and self confidence in them. The recent trend in e-learning sector is screen casting. E-Learning will bring a substantial change in the method of spreading knowledge to improve the quality in teacher education and hence will make teachers of global standard. Thus, e-learning is beneficial to education, corporations and to all types of teachers / learners. It is the effective learning process created by combining digitally delivered content with learning support and service. Therefore, we can conclude that teachers need to acquire technological skills in order to succeed in e-learning.

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