

E-LEARNING APPROACHES IN LIBRARY AND INFORMATION SCIENCE EDUCATION

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Abstract:

There has been an increasing interest in e-learning in LIS education during last decade. With the developing technology; the purpose, content, methods and skills of education have changed. E-learning is essentially the computer and network enabled transfer of skills and knowledge .E-learning applications and processes include web-based learning; Computer based learning, virtual education opportunity and digital collaboration. Content is delivered via the internet, intranet/ extranet, audio or video tapes, satellite, TV and CD-ROM. E-examination, e-drills, e-books, e-counseling, e-sound books are some of the common application form of e-learning which facilitate both the teacher and students to enhance their competencies .To create e-learning content, the pedagogical approaches like behaviorism, cognitivism, social constructivism, emotional and contextual perspectives, trans-modal learning need to be evaluated. Teacher and learner share responsibility for continuous improvement in their learning and teaching. Teacher of e-learning programs need to be trained in information technologies and internet in order to gather with their student in virtual classrooms. They should have the ability to administer all applications successfully and to follow the developments in pioneer countries in e-learning and distance learning. It is very important for the teachers to be able to provide academic counseling together with their competence and expertise in information services. Internet resources and websites play an important role in training teachers in utilizing information and communication technologies to enhance their teaching skills through ICT in education, integrating ICT into

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teaching Ideas, lessons, curriculum materials, educational software/ courseware, using Internet resources, electronic collaboration. They need to experience online learning as part of their ongoing professional development.

Keywords: E-learning, ICT, CBL, CBT, E-drills, CSCL, E-book, Cognitive Perspective

Introduction:

The world of computers 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 encourage self- directed learning. Internet has become the lifeline of young generation. It could be wonder for the ‘lecture session’ of teachers and educators and could be useful in the field of education in a magical way. It provides students and pupil-teachers a directional initiation to learn about the world of information already available. It is still utilized with reference to out of classroom and in-classroom educational experiences via technology even as advances continue in regard to devices and curriculum.

E-learning comprises all forms of electronically supported learning and teaching. The information and communication systems whether networked learning or not serve as specific media to implement the learning process. It is essentially the computer and network enabled transfer of skills and knowledge. E-learning application and processes include web based learning, computer based leaning, virtual education and opportunities and digital collaboration. Content is delivered via the internet/ extranet, 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. As internet is global, unlimited and open to public, the teaching applications planned for the internet environment has a potential of moderating the nature of distance learning. It seems that it will be the only distance learning of the near future. E-learning, as a new version of distance learning, is applied via the internet technologies and involves the educational activities, which do not require the presence of the teacher and learner at the same time and place.

E-learning is the delivery of content via all electronic media, including the internet, intranets/extranets; satellite broadcast, audio-video tape, interactive TV and CD-ROM (Urdan and Weggen, 2000:8). E-learning is a broader concept than online learning, encompassing a wide set of applications and process which use all available electronic media to deliver vocational educational education and training more flexibly (ANTA, 2003:1). E-learning is different from distance learning, which generally includes text-based materials as well as electronic media

From the Classroom Education to E-Learning

When compared to the classroom education, e-learning offers many advantages to students. During the e-learning process, students have the chance to decide how long they want to be educated. All the decisions on issues such as learning speed and the intensity of the topic demands on the student. Student has the right to get in contact in case of any problems. It does not require any expenses such as transportation or accommodation. Learning materials are organized according to the professional responsibilities and qualifications of the students. An effective e-learning system enables a student to determine and process his or her learning style, content, aim, current knowledge and individual skills. E-learning enables the individual to plan and direct his/ her own learning process, so each student takes the responsibility of his/ her own learning. The forums created within the e-learning system provide students with a discussion environment where problems are solved cooperatively in chat rooms. With the help of cooperation e-learning enables the user not the one way communication as in the classroom education but the duplex interaction.

Some Kind of E-learning Application

- **E-examination:** In this application, students are administered many proof exams in the internet environment before the formal exams, which enables them to determine their approximate levels. These proof exams, which enable the students to determine their approximate readiness levels, are the most facilitated e-learning services.
- **E-Drills:** With the internet-based drill software, it is aimed to create an effective and productive studying atmosphere for students. As students access these activities on the internet, they could study on the units through interactive multimedia software and reinforce their knowledge by examining numerous examples. Internet based drill software with animations and

intensive student-computer interaction could be in service within this program. Student enrolled in the distance learning system, could study on the software with or without sound effects. Therefore, students of the system could study more effectively and productively in the internet environment.

- **E-Book and E-Television:** In order to enable the students to access the books and TV programs on the internet, the content of the course book and TV programs could be presented on the internet as e-books and e-television. Therefore, a student of the system could easily access the course books, TV programs, study through the multimedia research software and asses he/she through the proof tests in an internet-café or at his/her own PC at the office.
- **E-Counseling:** The one-to one academic counseling provided to the students could also be provided in a similar format on the internet. Parallel to the research software, students are allowed to ask questions to their academic counselors related to their course contents.
- **E-Sound Book:** The E-sound Book application, which enables especially the visually retarded students to listen to the course book contents, could be provided on the internet. Therefore, visually retarded students and the students with screen reading difficulties could access their course books from their offices or from an internet-café. They could listen to the contents of the course book by downloading the sound files on their computers (Mutlu, Kip & Kaybas).

Approaches to E-learning Services

E-learning services have evolved since computers were first used in education. There is a trend to move towards blended learning services, where computer -based activities are integrated with practical or classroom based situation. Bats and Poole (2003) and the OECD (2005) suggest the following approaches of E-learning.

- **Computer based Learning (CBL):** Computer based learning refers to the use of computers as a key component of the educational environment. It broadly refers to a structured environment in which computers are used for teaching purpose.
- **Computer based Training (CBT):** Computer based training are self-paced learning activities accessible via a computer. CBTs typically present content in a liner fashion, much like reading on online books or manuals and are often used to teach static process. CBTs are typically

delivered via CD-ROM while web based trainings (WBIs) are delivered via the internet using a web browser.

- **Computer supported collaborative Learning (CSCL):** CSCL is one of the most promising innovations to improve teaching and learning with the help of modern information and communication technology. Most recent developments in CSCL have been called E-Learning 2.0 but the concept of collaborative or group learning whereby instructional methods are designed to encourage or require students to work together on learning tasks that existed much longer. Collaborative learning is widely distinguished from the traditional “Direct Transfer Model” in which the instructor is assumed to be the distributor of knowledge and skilled, that is often called E-learning 1.0, even though this direct transfer method most accurately reflects computer based learning systems (CBL).
- **Technology-enhanced Learning:** TEL has the goal to provide socio-technical innovations, improve efficiency and cost effectiveness for e-learning practices, regarding individual and organizations, independent of time, place and pace. The field of TEL therefore applies to the support of any learning activity through technology.
- **Communication Technology used in E-learning:** Communication technologies are generally categorized as asynchronous or synchronous. Asynchronous activities use technologies such as blogs, wikis and discussion boards. The idea here is that participants may engage in the exchange of ideas or information without the dependency of other participants’ involvement at the same time. Electronic mail is also asynchronous in that mail can be sent or received without having both the participants’ involvement at the same time. Asynchronous learning also gives students the ability to work at their own pace. This is particularly beneficial for students who have health problems. They have the opportunity to complete their work in a low stress environment. Synchronous activities involve the exchange of ideas and information with one or more participants during the same period of time. A face to face discussion is an example of synchronous communication. In an e-learning environment an example of synchronous communication would be skype conversation or a chat room where everyone is online and working collaboratively at the same time. Synchronous activities occur with all participants joining at once, as with an online chat session or a virtual classroom or meeting. Virtual classrooms and meeting can often use a mix of communication technologies.

Participants in a virtual classroom use icons called emotions to communicate feelings and responses to questions or statement. Students are able to ‘write on the board’ and even share their desktop, when given rights by the teacher. Other communication technologies available in a virtual classroom include text notes, microphone rights and breakout sessions. Breakout sessions allow the participants to work collaboratively in a small group setting to accomplish a task as well as allow the teacher to have private conversation with his or her students.

The virtual classroom also provides the opportunity for students to receive direct instruction from a qualified teacher in an interactive environment. Students have direct and immediate access to their instructor for instant feedback and direction. The virtual classroom also provides a structured schedule of classes, which can be helpful for students who may find the freedom of asynchronous learning to be overwhelming. The virtual classroom also provides a social learning environment that closely replicates the traditional “brick and mortar” classroom. Most virtual classroom applications provide a recording feature. Each class is recorded and stored on a server, which allows for instant playback of any class over the course of the school year. This can be extremely useful for students to review material and concepts for an upcoming exam. This also provides students with the opportunity to watch any class that they have missed, so that they never have to fall behind. It also gives parents the ability to monitor any classroom to insure that they are satisfied with the education their child is receiving.

In asynchronous online courses, students precede their own pace. If they need to listen to a lecture a second time or think about a question for a while, they may do so without fearing that they will hold back the rest of the class. Through online courses, students can earn their diplomas more quickly or repeat failed courses without the embracement of being in a class with younger students. Students also have access to an incredible variety of enrichment courses in online learning and can participate in college courses, internships sports or work and still graduate with their class.

In many models the writing community and the communication channels relate with the E-learning and the M-learning communities. Both the communities provide a general overview of the basic learning models and the activities required for the participants to join the learning

sessions across the virtual classroom or even across standard classrooms enabled by technology. Many activities essential for the learners in these environments require frequent chat sessions in the form of virtual classrooms and /or blog meeting.

Pedagogical Approaches of E-learning

Pedagogy means the art or science of teaching. It is also sometimes referred to as the current use of teaching strategies. When beginning to create e-learning content, the pedagogical approaches of e-learning are:-

Behavioral Perspectives:- Behavioural perspective focuses on the skills and behavioural outcomes of the learning process. It seeks to establish the mind as a 'blank box' that makes it possible to observe stimulus and response qualitatively. The pioneers of behaviourism were Aristotle, Watson, Pavlov and Skinner. Computer Assisted Learning, Instructional system Design(ISD), IDDIE(Analysis, Design, Development, Implementation and Evaluation) were the new approaches to e-learning and viewed e-learning as a universe comprising 3 basic elements i.e content, services and technology. As in the case of conventional learning, content forms the backbone of e-learning, technology forms the rider on which the content flows and the services is the support system that lends human touch to the process of learning via the internet.

Cognitive perspectives: - It is focus on the cognitive processes involved in learning as well as how the brain works. The cognitive psychologists like Lewin, Tolman, Piaget, Burner, Wortheimerir emphasized upon the concept learning, problem solving and how knowledge is represented in mind. Teaching is a process of developing understanding or insight in the learner and discovery learning results in meaningful understanding. Learners use mnemonic strategies to make more sense out of meaning with less input. Computers and Internet provide immense possibilities for the learners to establish meaningful links between meaningless information and experience or knowledge, to transform significant understanding rather than simple acquisitions to rehearse the mental process to perceive, develop concept and solve problems.

Constructive perspective: Constructivism is a set of cognitive perspective based on a belief that knowledge is constructed by learners and develop through experience. Constructivistic psychologist like Dewey, Bruner, Piaget, Vygotsky highlights the interaction of persons and situations in the acquisition and refinement of skills and knowledge. Knowledge is socially constructed by learners who convey their meaning making to others.

Relevance of E-learning in LIS Education

Knowing about global gateways or portals to online resources can help key decision makers with responsibility for development of teacher education programme. It is useful to consider the changing emphasis in the national goals of education in countries around the world. In all UNESCO members states, there is a realization of the role education plays in making the transition to an information economy in order to contribute and prosper in the globalized context of which all countries are now part. It is the school system that provides a foundation for future intellectual, social, moral, spiritual and aesthetic contributions in an increasing complex and integrated world order. Competence in information technology is a key in this development (White; 2003: 2). When students leave schools they should be confident, creative and productive users of new technologies, particularly information and communication technologies and understand the impact of those technologies on society (MCEETYA-1999). The e-learning approaches further aims to have a quality work force which is knowledgeable with highly tuned thinking skills, able to use technology and new resources optimally to combine creativity and innovation effectively and has a diversity of skills and knowledge in the use of ICT. It also produces students who are knowledgeable and ICT literate and able to use technology for the betterment of themselves, their communities and their nation (Downes et. at; 2003:3). To realize the national goals for education, proper development in teacher education programmes are required to prepare teachers with e-learning skills to equip students with the kind of critical skills necessary for the future development of the country. All teacher need to be familiar with e-learning and competent in the use of ICT to assist in this development and in order to be comfortable in these roles teacher need to experience online learning as part of their ongoing professional development. Teachers use data and information as basic building blocks to assist learners to develop contextual knowledge. As a result engaging with technology can enable teacher to store, view, manipulate and present information in many new ways.

Therefore e-learning for development of teacher education programmes must play a key role, if national education goals for education are to be achieved, thereby changing schools as we have known them in the past form predominantly teaching institutions to learning institutions. Many educators describe these changes as nothing less than a transformation of education (UNESCO, 2004)

Suggestion for E-learning Applications

When e-learning programs are administered as a support or alternative for the traditional learning methods, the learning process becomes more consistent as well as the learnt knowledge. Although the infrastructure expenses for e-learning are high, the long term education and service quality are more satisfactory. The equipment for this program should be well designed. The design team should first determine the target audience accurately and consider many aspects such as the type of the education and media. The correct choice in the equipment and communication type to be utilized would contribute to the more effective and productive use of time as well as reducing the expenses for communication and investment on the other hand, the approach of the government towards e-learning, the awareness created in the society and socio-economic status are among the factors that speed up the e-learning process, such contributions to education could also reflect on the development in technology assists in the development of educational system as well as leading to more educational models to emerge. Establishment of virtual labs provides the chance to follow the developments in education in the world, especially for the institutions, which are financially unavailable to purchase lab equipment. Therefore, a competitive environment is created in education, which leads to sustainable development with e-learning environments; students could continue the teacher-learner relationship from different place at different times. E-learning terminates the limitation of time and place while providing learning environments with lower expenses. In learning process the relationship between teacher, learner and peers has great importance. Individual learning is also important, however, the efficiency of learning together could not be avoided. Achievement depends on support and individuals need assistance in learning topics. Therefore, teachers of e-learning programs need to have a serious in-service training; because many e-learning programs require mutual interaction via technological tools. The word “electronic” as a prefix for e-learning, does not only mean that learning occurs with technological tools but also requires the awareness in developing technologies. So, teachers of e-learning programs need to trained in information technologies and internet in order together with their students in virtual classrooms. Additionally they have to have the ability to administer all applications successfully and to follow the developments in pioneer countries in e-learning and distance learning. It is also very important for teachers to be able to provide academic counseling together with their competence and expertise in information

services. It should be well understood that e-learning applications could succeed be preferred and developed only with the participations of the teachers with above mentioned characteristics.

References:

- Australian National Training Authority (2003). *Developing e-learning content (Australasian Flexible Learning Framework Quick Guide Series)*.
- Available on <http://www.educationalintegrator.com/pdf/content.pdf>
- Bates,A (2005). *Technology e-learning and Distance Education*. London: Rutledge.
- Bates,A and Polle,G. (2003) *Effective teaching with technology in higher education*. San Francisco: Jossey-Bass/ John Wiley.
- Downes, T., Khun,T., Scott,D., Leonard, R. and Warhurst,J.(2003). *Pre Service Teacher Training and Teacher Professional Development in the use of ICTs in the Training of Mathematics and Science in Participating SEAMEO countries (a SEAMEO- Australia Project)*. Canberra: Department of science Education and Training. Available on http://www.transport.nsw.gov.au/sites/default/files/b2b/projects/Flemington_Station_Easy_Access_upgrade_Visual_Impact_Assessment.pdf
- Ministerial Council on Education, Employment, Training and Youth Affairs (1999). *National Goals for schooling I the 21st century*. Available on http://www.curriculum.edu.au/verve/_resources/Values_Conf_020505_forum_address_Lovat.pdf .
- OECD (2005). *E-learning in Tertiary Education: where do we stand?* Paris: OECD
- UNESCO (2004). *ICT in schools: A Handbook for teachers or how ICT can create new open learning environment.*(by A. Semenov and edited by J. Anderson and E. khvilon) Paris: UNESCO.
- Urdan, T.A. and Weggen, CC(2000). *Corporate E-learning: Exploring a new frontier* (Report for W.R. Hambrecht & Co. Available on http://www.e-learning.nl/publicaties/marktonderzoek/new_Frontier.pdf.
- White,G.(2003). *E-learning key Australian Initiatives (An opportunity for all learners)* Available on http://www.educationau.edu.au/papers/elearning_poland03pdf.