

Flexible Learning: A New Tendency in Distance Learning

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Abstract: This study analyzes the future of distance learning (dLearning). To this aim, the educational process that started with classroom learning (cLearning) and continued with distance learning (dLearning), electronic learning (eLearning), mobile learning (mLearning) and blended learning (bLearning) which combines the strengths of these different applications and flexible learning (fLearning) which is lately the leading trend were examined. Finally, emerging technologies, pedagogies, characteristics of future learners were analyzed. In addition, nature of the future dLearning and role of fLearning in future education systems.

Key words: Classroom learning, distance learning, electronic learning, mobile learning, blended learning, flexible learning

INTRODUCTION

Learning is a process that continues formally or informally throughout our lives. This is the underlying belief that made the concept of lifelong learning so trendy. Paradigm shift has been experienced in the classroom learning (cLearning) realized in face-to-face relation between the instructor and the students in the traditional education classrooms since the early 1900s. In parallel to this process, rapidly growing technological innovations have affected learning and teaching methods in the classrooms, while they have brought different teaching platforms to the fore. In late 1800s, it was thought that use of a formal instruction method in which the instructor and the learner were not present at the same place and at the same time was possible and that thus the concept of “distance learning”, setting off from the idea that the communication could be provided through letters between the instructor and the learner. This process of distance learning which started with the use of letter continued with radio in 1930s and television in 1950s as a means of instruction, in parallel with the technological developments. Then in early days of 1990s’ interactive television was introduced as a means to send the information to the distance learner, right after the use of closed-circuit television, microwave transmission, video recording and satellite transmission. With the introduction of electronic revolution in 1980s, personal computers and CD-ROM, internet and www, educational content in mid 1990s allowed the transmission of knowledge to the student more flexibly and rapidly. Thus it became easier for the learners from different geographical regions to communicate with the other

learners and instructors asynchronously or synchronously and have quicker access for the knowledge. Furthermore, developments in broadband made it possible to present educational content not only in text format, but also in the form of graphics, photos, voice, animation and simulation, etc. and provide face to face communication between instructors and learners. Thanks to the wireless revolution brought about by the expansion of devices such as laptop, mobile phone, PDA (Personal Digital Assistants) in late 1990s made distance learning process independent from time and place (Castro *et al.*, 2001; Mehrotra *et al.*, 2001; Lever-Duffy *et al.*, 2003; Saba, 2003; Harper *et al.*, 2004).

DISTANCE LEARNING

While, the technologies used in distance learning (dLearning) changed more slowly at the outset, it started to change faster with the digital age and this speed gained momentum continuously. Gunawardena and McIsaac (2004) categorize these technologies as same time/same place, same time/different place, different time/different place and different time/same place.

Same time/same place technologies are the technologies that cover projector, electronic whiteboard and computers used in classrooms where distance learners come to the campus and interact with other learners or conduct laboratory experiments in the presence of instructors. In fact, these Information and Communication Technologies (ICT) are widely used in the current cLearning environments.

Same time/different place technologies are applications that allow audio, video, graphic and data

communication, through desktop video teleconference made available by the current developments in ISDN, ADSL and ATM, between instructors and learners from different geographical regions. In these technologies, instructors present the lecture through radio and TV broadcasting and learners are able to call instructor back.

The above-mentioned technologies are used as a means to increase social interaction which is effective in eliminating the loneliness of the learner at a distance location and improving the learning process. Different time/different place technologies are used for one-way information transmission. They include means such as e-mail, forum, bulletin board, books used for asynchronous communication, print materials like lecture notes, video or audio cassettes, multimedia CD-ROMs. These technologies enable the learners to have access for information and lecture notes at any time or place that is most appropriate for him. Finally, different time/same place technologies are used to communicate with instructors and mentors and access for information sources such as libraries, laboratory and computers. Some of the virtual and open universities establish local centers for this reason. Although, these technologies have the potential to improve the instruction and learning process when designed well, various factors, such as attitudes of learners towards technology, use of pedagogy and technology by instructors and level of readiness in terms of the content of the lecture affect the performance of the virtual classrooms (Harper *et al.*, 2004).

The shifts in paradigm, technological developments, the experience obtained through the use of technology in the classroom and the distance teaching clarified the relation between the technology and learning. In other words, as stated by Jonassen and Reeves (1996), the concept of learning from technology was replaced with the concept of learning with technology. The paradigm shift from instructing to learning has also affected the concept of distance learning and focused on the learner. Keegan (2002) defines this shift as shift from dLearning to eLearning (electronic learning) and from there to mLearning (mobile learning). In addition, applications depending on bLearning (blended learning), which is a combination of eLearning and face-to-face mode are frequently observed.

ELECTRONIC LEARNING

Elearning is widely used around the world, by national and international universities, companies, colleges, etc. for pre-service or in-service trainings (Naidu, 2001; Keegan, 2002). ELearning, covering online learning which allows learners to have access for

educational content and have one way or two way communication with other learners and instructors, through computer networks, intranet, internet and www, provides quick, easy and flexible access for all kinds of content through digital devices, just like the CD-ROMs, DVDs, computers and mobile phones.

Elearning became a global market where there are different applications of pedagogical, technological and social interaction, with the introduction of Learning Management Systems (LMS) that aim at managing the process of learning-teaching. Elearning also includes reusable learning objects which were developed to prepare the educational materials more efficiently and effectively and standards such as SCORM (Sharable Content Object Reference Model). The slogan of this global market is "Learners can have access for education content at any time at anywhere". In fact, learner needs a PC or laptop to reach the educational content of instructor or other means. If the content is on a server, instead of a CD or PC, there is need for wire or wireless internet access. This limits learner in terms of time and place, as internet access without any interruption is not present everywhere in the world. Mobile devices offer new advantages in provision of anytime and anywhere (Brown, 2003; Meisenberger and Nischelwitzer, 2004). Singh (2003) defines this as shift from "anywhere, anytime" to "everywhere, every time".

Mobile learning: MLearning is generally defined as eLearning realized at anywhere and anytime through mobile devices (Quinn, 2000; Dye *et al.*, 2003; Trifonova and Ronchetti, 2003; Georgiev *et al.*, 2004). MLearning started to become an education sector with the rapid increase in the numbers of mobile telephones (Keegan, 2002). The wireless handheld devices such as PDA, mobile phone, wireless laptop and tablet PC; which are always on and always with the learner, location aware and individualized, allows learner-learner and learner-instructor interaction just in time (Homan and Wood, 2003; Lever-Duffy *et al.*, 2003).

It is seen that mLearning is being realized in various countries, through various projects using handheld devices. MLearning has been used in the transmission of alerts concerning the courses in order to improve the performances of learners, personalized calendars or other campus services, group activities and discussions to which learners can attend by using SMS or MMS, study on e-book or educational content, in classroom and distance learning settings for K-12 and adult learners in the fields of foreign language training (exercises and quizzes) and accounting, mathematics, teacher training and medical education (Sharples *et al.*,

2002; Seppala and Alamaki, 2002; Berger *et al.*, 2003; Brown, 2003; Bull *et al.*, 2003; Liu *et al.*, 2003; Roberts *et al.*, 2003; Tatar *et al.*, 2003; Smordal and Gregory, 2003; Trifonova *et al.*, 2004; Homan and Wood, 2003; Motiwalla, 2007).

Although, mLearning has been begun to use in various settings, there are still some problems. The primary problems experienced in mLearning are as follows: limited storage and memory capacity in wireless handheld devices, too small screens, insufficiencies in the usability of user-interface, SMS and MMS capacity, problem of battery power duration, security, insufficiencies in cross-platform solutions in connection to LMS, high prices of WAP access and devices (Quinn, 2000; Berger *et al.*, 2003; McLean, 2003; Roberts *et al.*, 2003; Homan and Wood, 2003; Luna, 2005; Motiwalla, 2007).

As it has seen, these problems are mostly technical problems. Strengths and weaknesses of each theory, technology and interaction type should be taken into consideration in order to design effective, attractive and efficient learning environments. Each learning activity and experience may not be appropriate for mLearning (Gay *et al.*, 2002; Motiwalla, 2007). In order to eliminate these obstacles, it may be useful to use different technologies, tools and methods, where appropriate and needed.

Blended learning: BLearning can be considered as the combination of eLearning and cLearning which is applied on face to face mode which eliminates the absence of human dimensions in eLearning. BLearning is also used for the purpose of combining learning tools and technologies, combining different learning theories, using e-tutoring and e-mentoring in workplace learning and support instruction in classrooms with online ICT (Mantyla, 2001; Troha, 2002; Singh and Reed, 2001; Driscoll, 2002; Wonacott, 2002; Garrison and Kanuka, 2004; Barroso and Cabranes, 2006).

Determination of what strengths of cLearning and eLearning that need to be combined in order to improve the bLearning and how to do it remains a primary question to be investigated. Naturally, each institution will find solutions peculiar to them. Many distance education institutions prefer to integrate bLearning to its system, if bLearning is likely to improve the insufficiencies and problems in its structure. As for the institutions which will establish eLearning and dLearning for the first time, they integrate online or mobile devices, tests, exercises, quizzes, e-mail, forum or discussion boards to cLearning, in this integration period. This integration period is significant as it helps the institutions determine the weaknesses in the implementation and it allows

instructors, educational technologists, technical staff, learners and concerned stakeholders get used to the process (Driscoll, 2002; Graham, 2004).

Barroso and Cabranes (2006) reported that learners who do not find dLearning method appropriate for themselves prefer bLearning. In fully online education systems, this stage is a difficult stage for a digital migrant learner, despite the guidance services provided to adapt learners to the online system. Wonacott (2002) points out that learning methods, technologies and experiences, etc. should be chosen according to the needs of the learner and the content in determining the instructional design. At this point, various questions arise: How will the needs of learners be determined? How can one decide which of the adaptive learning environments are appropriate for particular learners? Will learners be given the chance to choose the dimensions on learning process? Attempts to answer these questions focus on fLearning.

FLEXIBLE LEARNING

Flearning which is referred to as distance learning in USA, open learning in UK and flexible learning in Australia has been referred to under various concepts such as dLearning, open learning, distributed learning, technology-enhanced learning and eLearning in the literature. This is because all these applications have flexibilities at different dimensions. In this study, fLearning means the flexibility enjoyed by learners in deciding what to learn, where and how to learn. These decisions include which courses will be taken, the way the materials will be distributed (on-paper, CD, online, etc.), place of study, instructors and mentor, frequency and available times to contact the instructor and other learners, teaching and learning methods and the date and the technique of assessment to be applied, etc. (Archee and Saunders, 2001; Chen, 2003; The Open and Distance Learning Quality Council (ODLQC), 2004). In distance education, such decisions are generally given by the institution. The primary motivation under determining the learner as the party to make such choices is that fLearning attempts to be learner-focused. As it is in constructivist learning, emphasis is made on the interaction of learners with other learners and field specialists, context oriented learning experiences, higher order skills and guiding function of the instructor (Chen, 2003).

However, it is obvious that these decisions can be given in a more healthy way for self-directed distance learners. This development, as stated in the transactional distance theory of Moore (1983), can be used in order to solve the problem of decreasing learning outcomes as a

result of the distance between learners and instructors in terms of education and psychology, more than geography. However, Anderson (2003) reported that there is no one best way to provide interaction. Each institution and culture produces and tests its own solutions depending on their own experiences.

In addition, Ling *et al.* (2001) recommends use of flexibilities providing alternative entry and exit points appropriate to the learner and removing entry requirements in fLearning. The courses in these education programs may be structured according to different learning styles and collaboration. Flexible delivery modes may be offered.

Different instructional designs are needed to perform fLearning, considering extra staff, cost, time, technical resource, infrastructure, decrease in the student number, in-service training for the staff, appropriate planning, administrative support, determination of learners' needs and necessity of meeting their needs. In specific educational case where it is very difficult to realize fLearning completely, using specific application strategies (flexible delivery mode or flexible collaboration etc.) in cases where it would create educational value would be more effective (Chen, 2003; Kirkpatrick *et al.*, 1997).

DISCUSSION

Distance learning has become a growing market as it allows the learners who cannot go to university, obtain diploma or continue their graduate and post-graduate education to improve their professional carrier (Harper *et al.*, 2004; Khan, 2005). In parallel to this development, the number of distance education centers in universities is increasing. These centers serve both for the students of these universities and the learners who are not students in these universities. These centers offer different learning experiences for the learners, through emerging interactive media such as wireless mobile devices and shared virtual environments, focusing on learning, learners and interaction.

This adventure through dLearning, eLearning, mLearning, bLearning and fLearning actually indicates that one dimension of the distance learning comes to the forth, as different technologies become trendy at different times. In order to estimate nature and the role of the future distance learning systems today, it is necessary to treat the existing technological and pedagogical trends together. Determination of characteristics of the future learners is needed, considering that this technology and pedagogy will be re-designed in the future.

It is expected that learners in digitalized and knowledge-based society will be autonomous, self-

directed and motivated individuals with lifelong learning skills in 21st century (Bork, 2000; Knapper, 2006). What can be the learning media and technologies that can allow learners to develop, use and improve such skills? Attempts have been made to answer these questions in different platforms.

Mobile devices, use of SMS and MMS are very popular and common among the young people. Transmission of voice, video and animation through mobile devices is becoming more popular as well. When we consider that the flexible learners of the future are today's pre-adolescents, it is a fact that ICT will be heavily used in the distance learning systems of the future.

According to report namely The Future of ICT and Learning in the Knowledge Society (2005), which comments on the education system in 2020, future learning environment cannot be envisaged without ICT (Punie and Cabrera, 2005). The significance and usage of ICT in every area has increased gradually. Broadband internet access, 3G networks and 3G mobile are becoming widespread (Vision, 2007). ICT, especially wireless devices, provide access to learning everywhere, everytime and everyway.

These common devices should of course be considered as an educational medium. Keegan (2002) says that mLearning is the future of learning and the combination of distance learning with mobile telephony to produce mLearning will provide the future of learning. There is no doubt that mLearning will be used widely in education institutions which are indispensable parts of the globalized world which will be even more digitalized and networked. However, using of mLearning in cases where it would create a value in terms of learning, instead of using it in all learning cases, would be useful.

In the same report, it is also mentioned that Weblogs or blogs and open source contents (RSS) such as Wikipedia are becoming more and more popular among users. This makes it easier for flexible learners to have quicker access for information. This is also, an opportunity for them to use this information, interpret the meanings, integrate it with their knowledge, share it and discuss on it on internet, without feeling a need for high ICT literacy. The reliability of this open source content is of course an important problem. This is why flexible learners need information literacy consisting various skills, such as searching for the information, finding different perspectives of information, finding different methods to search for information and thus verifying the validity and correctness of information.

The report also, states open source software have been diversified and expanded and that intelligent

learning objects and Learning Content Management Systems (LMCS) are being developed. This will bring a decrease in the costs of structuring the educational institutions and improve the interactive nature of the learning media of intelligent learning objects. As for LMCS, it will offer an easier, faster and joint platform for the management of distance learning.

Computer simulations, virtual, artificial and mixed reality, intelligent tutors, microworlds, voice recognition and nano-electronic applications are some examples of emerging technologies (Dede, 2000; Lever-Duffy *et al.*, 2003; Gunewardena and McIsaac, 2004). Naturally, these emerging technologies will be useful to the extent they are combined with a pedagogical approach. Jonassen *et al.* (2003) argue that when technology is taken as a partner, instead of an instructor in learning process, in other words, when technology supports information structuring and acts as a tool to search for information, as an intellectual partner to support learning by reflecting, a context for learning by doing, as well as a medium supporting learning conversing, it can be useful.

Flexible learners would not want to learn in an environment where they acquire information by different technologies in a passive way. Instead, they would like to act as a stakeholder who has a say in all processes such as design, application and assessment of the learning process. They would prefer to learn in user-friendly designed and collaborative environments where their personal learning styles and learning strategies are taken into consideration and they are able to determine time and place of studying, along with the participation level.

In order to meet such demands of learners, learning theories in which learner is active and highly interactive, information is structured as context dependent and real life cases, situations or problems are used in order to transfer the information to different situations will be needed in designing adaptive, authentic, interactive and collaborative learning environments. A learning environment which is found attractive for the learners should be provided so that learners can acquire knowledge while, a certain objective is being achieved or a problem is being solved.

The learners, who will be educated with distance education systems in the future, in other words, mobile and gaming generation, give most of their time to video, computer, mobile and multiplayer online games. This is why instructors started to make use of games in order to create a more effective, productive and attractive learning environments. There is evidence supporting the vision that educational games, particularly multiplayer games, improve the social and communication skills, motivation,

attention, concentration of learners; support enjoyable, collaborative and social learning; provide problem-based and goal-based learning environments and contribute to the creation of immersive environments that include cognitive and emotional factors (Prensky, 2001; Mitchell and Savill-Smith, 2004; Schwabe and Goth, 2005; Ellis *et al.*, 2006).

In this sense, one of the primary advantages of game-based learning is to integrate appropriate instructional design, technology and mediums to dLearning of future. Another advantage is that it helps learners acquire lifelong learning skills. This requires the improvement of infrastructural opportunities of both institution and learners. However, will learner wait until the institution establishes the required technical infrastructure? Given the globalized nature of education today, it would be useful if formal and informal education institutions develop a system to accredit each other and thus learners would receive different courses from different institutions. This would also allow institutions to exchange experience.

Today, many distance technologies are widely used in our traditional classrooms (Dillon and Grene, 2003). As reported by Hurst (2001), we need to support learning process of learners within and outside the campus, by mixing various tools and methods. The important point here is that we need to provide learners with different learning styles with the academic support create different learning situations and experiences and achieve social interaction through the methods determined by learner. Many distance learning systems provide lecture notes and materials in one style and try to achieve social interaction with media which is developed within its limits, such as chat, forum, voice and video conference. As many of the worker learners today are digital migrants, they are not used to such systems and thus they do not want to use them. Furthermore, cultural differences decrease the usability of these systems. In addition, technological and pedagogical innovations are not sufficient to enable classical distance education delivery systems to provide education for new generation.

What distinguishes fLearning from dLearning is the central position of the concept of 'flexibility' which is ignored in dLearning. When we consider fLearning as a distance learning system where learner is allowed to decide in respect to what, where and how will he/she learn, it is obvious that future learners will desire to see such flexibilities in the learning process and that it is necessary to develop, improve and expand the technologies and pedagogical approaches needed to create the concerned flexibilities. Moreover, we need to increase our knowledge on these technologies and

approaches. It is believed that fLearning systems which will be designed on the basis of the vision that consider individual differences of learners, the added value of each technology and learning-teaching theory will be the education systems of the future.

CONCLUSION

It should be clear from the review of this study, that fLearning is the new tendency for distance learning and this subject needs empirical researches on various fLearning designs.

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