

The role of ICT in distance education¹ Mohammad Abedi, ² Ali Badragheh^{1,2} Department of Environment, Damavand Branch, Islamic Azad University, Damavand, Iran*Corresponding author: abedi114@yahoo.com

Abstract: Challenges which faced the early users of distance education are still with us today. If distance education is to play a greater role in improving the quality of education, it will require expanded technology; more linkages between schools, higher education, and the private sector; and more teachers who use technology well. Teachers must be involved in planning the systems, trained to use the tools they provide, and given the flexibility to revise their teaching. Federal and state regulations will need revision to ensure a more flexible and effective use of technology. Connections have been established across geographic, instructional, and institutional boundaries which provide opportunities for collaboration and resource sharing among many groups. In the pooling of students and teachers, distance learning reconfigures the classroom which no longer is bounded by the physical space of the school, district, state or nation.

[Mohammad Abedi and Ali Badragheh. **The role of ICT in distance education.** Journal of American Science. 2011;7(4):315-320]. (ISSN: 1545-1003). <http://www.americanscience.org>.

Keywords: ICT, distance education

Introduction:

The background of distance education to mid-nineteenth century dates. Pioneers in America and Europe of the best distance learning technologies for training that day, took advantage. For example: mailing system for creating educational opportunities for those able to go to regular schools were not interested in science education, but had been used. Of course at that time most of those who took advantage of this type of Physically Handicapped facilities, women allowed to attend the classes along with men who did not have a. Location is N. There was a school; were. One of the pioneers in this field English personal name was Isaac Pitman. His short-term training through correspondence and the correspondence began in 1840 in England. Students were required to read the Bible a part of written questions and answers raised by Pittman to get a good score should return by mail.

But distance education in America and for the first time at the University of Illinois Veslin was implemented in 1874. In 1900, university education through correspondence, face became more public. National Association of Home Education in 1926 and led the establishment of distance education and related programs in universities and schools, and more important aspect to find drivers. Education in 1920 invented the radio and TV appearance in 1940 led to important new techniques in communications that the nature of the field of distance education also created dramatic changes.

Trainers using these new technologies were successful educational programs to millions seek learning opportunities and thereby reach out to the educational spaces, training centers to expand. With the development of long-distance telephone system in the early twentieth century method of capacity and

distance learning methods for students to access educational opportunities in the world increased Translation. But until the invention of mobile tele conference ever in the 80 and 90 and the main role in the concept of distance education did not play. Telemetry system, allowing for teachers conference provided that without the slightest delay at a time when your students can listen to them talk and sometimes they see.

Expansion of computer networks in the decade 1990 and connect millions of people through lines to the telephone networks made it possible to simply distance learning via computers and computer conferences around the world is possible (a) and Today with the development of control technology in science and technology around the world are.

WHAT IS DISTANCE EDUCATION?

Distance education is a method of education in which the learner is physically separated from the teacher and the institution sponsoring the instruction. It may be used on its own, or in conjunction with other forms of education, including face-to-face instruction. In any distance education process there must be a teacher, one or more students, and a course or curriculum that the teacher is capable of teaching and the student is trying to learn. The contract between teacher and learner, whether in a traditional classroom or distance education, requires that the student be taught, assessed, given guidance and, where appropriate, prepared for examinations that may or may not be conducted by the institution. This must be accomplished by two-way communication. Learning may be undertaken either individually or in

groups; in either case, it is accomplished in the physical absence of the teacher in distance education. Where distance teaching materials are provided to learners, they are structured in ways that facilitate learning at a distance.

Benefits of Distance Learning:

Benefits and opportunities that distance education provides, include:

- training a wide range of audiences.
- meet the needs of students and students who can not attend in place.
- Possible connection between students and students with cultures, beliefs and experiences are different.
- Benefiting from coaches and speakers who do not live in the country.

Remote educational tool:

distance learning tools and supplies various uses. These tools in four main courses are:

A - Audio Tools:

Audio tools include training such as two-way interactive telephone, video conference, shortwave radio and a strain of tools such as audio tape and radio.

B - Image tools:

including slides, films, video tapes and video conferences.

C - Data:

computers as electronic data are sent and received. Because the data word description for a wide range of educational tools is used.

Computer applications for distance education are varied and include the following:

- 1- Training to Computer Management.
- 2 - Computer Assisted Instruction.
- 3 - through PCs.
- 4 - e-mail, telegraph, computer conference and the World Wide Web simultaneously.

D - Print:

The main element of distance education programs, particularly in the exchange and delivery system information tools are considered.

Key factors in the process of distance education:

the process of remote training, the following factors contribute:

- Students:
Regardless of educational content, role and main element in the learning process students are responsible.
- Coaches and Teachers:

Success depends on a lot of educational activities the ability, skills and knowledge are the coaches and professors.

- Facilitators of communication:

Facilitator bases, as the bridge between students and mentors are. Must base expectations of teachers and educational needs of students and service coordination and communication to create.

- Support staff:

One of the important pillars of any development of distance education programs, by development group finds. Operational support staff such as student registration, copy and distribute their resources, order textbooks, security and copyright, and are responsible for the report.

- Management:

The group decision makers, builders and judges are considered to be educational and should be considered among the factors above, establish the correct relationship formation.

Types of Distance Education Programs:

There are two types of programs offered by distance education schools: synchronous learning programs and asynchronous learning programs. With synchronous learning, distance education students must log on to the school's website at a set time. Often, they interact with their peers and professors via group chats, web seminars, video conferencing, and phone call-ins. With asynchronous learning, distance education students complete all coursework on their own time. They often learn via assignment sheets, message boards, email, pre-recorded video lectures, mp3s, and traditional mail correspondence.

Distance education began for the delivery of courses to students who live in remote areas. Over the years, though, this form of education has become the preferred method for learning outside of the classroom.

Distance Education is now undertaken by people with busy schedules, hectic lifestyles, special needs, and also those living in isolated areas. What's more, with such flexible learning options you can choose to study at any time and from any location you like.

There are a number of different **forms of distance education** and it's important to know which method you prefer:

- **Correspondence learning:** your course materials are printed and sent out to you by mail/courier. The advantages are that you have a printed set of reference materials, you can study anywhere and you are not reliant on a computer, you can learn for long periods of time.
- **eLearning:** your course materials are provided to you in multimedia format; that is, on CD/DVD. In this way you can choose to take your study materials within you and learn anywhere in the world with just a laptop.
- **Online learning:** no materials are sent to you and you do all your learning online. The limitation is that you need to be logged onto a computer (though you may be able to download and print some of your materials yourself, though this can cost you more in ink), there is a limit to how much you can absorb and do online, and most people's attention span on-screen is limited to 20 minutes (your eyes get tired after that).
- **Broadcast learning:** where you tune into a series of television, radio or Internet broadcasts (e.g. podcast, YouTube, etc.).
- **Teleconferencing:** where your lessons are conducted in real time through an Internet connection. Limitations are that streaming can be slow, connections can cause problems (students and teachers generally need to be computer literate) and there can be delays in talk-time, depending on software, hardware and connection capabilities.

Conclusion:

Distance education delivers classes (live or pre-taped) to students in their home, office, or classroom. It is used by K-12, higher education, continuing education and business. As the cost of delivering quality education increases, institutions find that limited resources prevent them from building facilities, hiring faculty, or expanding curricula. They are using distance education to maximize resources and are combining their assets with others to produce programming. Distance education is offered internationally, nationally, regionally, and locally over all forms of conferencing technology.

Distance learning is expanding and examples of it are increasing dramatically. Fewer than 10 states were using distance learning in 1987; today, virtually all states have an interest or effort in distance education. Distance learning systems connect the teacher with the students when physical face-to-face interaction is not possible. Telecommunications systems carry instruction, moving information instead of people. The technology at distant locations are important and affect how interaction takes place, what information resources are used, and how effective the system is likely to be.

Technology transports information, not people. Distances between teachers and students are bridged with an array of familiar technology as well as new information age equipment. What sets today's distance education efforts apart from previous efforts is the possibility of an interactive capacity that provides learner and teacher with needed feedback, including the opportunity to dialogue, clarify, or assess. Advances in digital compression technology may greatly expand the number of channels that can be sent over any transmission medium, doubling or even tripling channel capacity. Technologies for learning at a distance are also enlarging our definition of how students learn, where they learn, and who teaches them. No one technology is best for all situations and applications. Different technologies have different capabilities and limitations, and effective implementation will depend on matching technological capabilities to education needs.

Distance education places students and their instructors in separate locations using some form of technology to communicate and interact. The student may be located in the classroom, home, office or learning center. The instructor may be located in a media classroom, studio, office or home.

The student may receive information via satellite, microwave, or fiber optic cable, television (broadcast, cable or Instructional Television Fixed Services (ITFS), video cassette or disk, telephone - audio conferencing bridge or direct phone line, audio cassette, printed materials - text, study guide, or handout, computer - modem or floppy disk, and compressed video. Recent rapid development of technology has resulted in systems that are powerful, flexible, and increasingly affordable. The base of available information technology resources is increasing with dramatic speed. Much has been learned about connecting various forms of technology into systems, so that the ability to link systems is growing. Most distance learning systems

are hybrids, combining several technologies, such as satellite, ITFS, microwave, cable, fiber optic, and computer connections.

Interactivity is accomplished via telephone (one-way video and two-way audio), two-way video or graphics interactivity, two-way computer hookups, two-way audio. Interactivity may be delayed but interaction provided by teacher telephone office hours when students can call or through time with on-site facilitators. Classes with large numbers of students have a limited amount of interactivity. Much of the activity on computer networks is on a delayed basis as well. Possibilities for audio and visual interaction are increasingly wide.

In the earlier days of distance learning, it was most common to see distance learning used for rural students who were at a distance from an educational institution. The student might watch a telecourse on a television stations, read texts, mail in assignments and then travel to the local college to take an exam. This model is still in use, but as the technology has become more sophisticated and the cost of distance learning dropped as equipment prices dropped, the use of distance education has increased.

High front-end costs prevented an early widespread adoption of electronically mediated learning. Distance learning has been aggressively adopted in many areas because it can meet specific educational needs. As the concept of accountability became accepted and laws required certain courses in high school in order for students to be admitted to state colleges, telecommunications was examined as a way to provide student access to the required courses. Many rural school districts could not afford the special teachers to conduct required courses. Distance education met this need by providing courses in schools where teachers were not available or were too costly to provide for a few students. It also fulfilled a need for teacher training and staff development in locations where experts and resources were difficult to obtain. These systems link learner communities with each other and bring a wide array of experts and information to the classroom.

Challenges which faced the early users of distance education are still with us today. If distance education is to play a greater role in improving the quality of education, it will require expanded technology; more linkages between schools, higher education, and the private sector; and more teachers who use technology well. Teachers must be involved in planning the systems, trained to use the tools they provide, and

given the flexibility to revise their teaching. Federal and state regulations will need revision to ensure a more flexible and effective use of technology. Connections have been established across geographic, instructional, and institutional boundaries which provide opportunities for collaboration and resource sharing among many groups. In the pooling of students and teachers, distance learning reconfigures the classroom which no longer is bounded by the physical space of the school, district, state or nation.

The key to success in distance learning is the teacher. If the teacher is good, the technology can become almost transparent. No technology can overcome poor teaching which is actually exacerbated in distance education applications. When skilled teachers are involved, enthusiasm, expertise, and creative use of the media can enrich students beyond the four walls of their classroom.

Teachers need training in the system's technical aspects and in the educational applications of the technology. Areas for assistance include the amount of time needed to prepare and teach courses, how to establish and maintain effective communication with students, strategies for adding visual components to audio courses, ways to increase interaction between students and faculty, planning and management of organizational details, and strategies for group cohesion and student motivation.

The interchange of ideas requires different communication methods than in conventional classrooms: information technologies are predominantly visual media, rather than the textual and auditory environment of the conventional classroom, the affective content of mediated messages is muted compared to face-to-face interaction, and complex cognitive content can be conveyed more readily in electronic form because multiple representations of material (e.g., animations, text, verbal descriptions, and visual images) can be presented to give learners many ways of understanding the fundamental concept.

***Corresponding Author:**

Mohammad Abedi

Department of Environment, Damavand Branch,
Islamic Azad University, Damavand, Iran

E-mail: abedi114@yahoo.com

References:

1. Alharthi, Mohammad A (2003). a High quality portal frame work for asynchronous learning networks: intellectual capital aggregation and organization, doctorate thesis, Vanderbilt university.
2. Allison. chlin.& others (2002). an integrated framework for distributed learning environments.
3. Almogbel. Ali N (2002). distance education in Saudi Arabia: attitudes and perceived contributions of faculty, students, and administrators in technical college, doctorate thesis, university of Pittsburgh.
4. Al-saleh, Mary Margaret (2002). a description and comparision of RN_ BSN Nursing student, perception of student _ teacher relationships in traditional and internet distance education nursing courses. DNSC, widener university school of nursing .
5. Ananyous (2001). history of distance education and training council (75 years). Distance education and training council washington.
6. Armstrong, Amy Jo (2002). an investigation of personal – social contextual factors of the online adult learner: perceived ability to complete and succeed in a program of study. Doctorate Thesis, Virginia commonwealth university.
7. Barron, D (1996). Distance education in north American library and information science education: Application technology and commitment. journal of the Ameraican society for information science. Vol.47 ,No.11.
8. Bates,T (1995) .Technology, open learning and distance education London:Routledge.
9. Beetham. H., & Sharpe, R. (eds.) (2007). *Rethinking pedagogy for a digital age: Designing and delivering e-learning*. London: Routledge.
10. Boltone , sharon Bauer (2002). Developing an instrument to Analze the application of adult learning principles to world wide web distance education courses using the Delphi technique. EdD.university of lousville.
11. Bonk, C., & Graham, C. (eds.). (2006). *Handbook of blended learning: Global perspectives, local designs (pp. xvii - xxiii)*. San Francisco: Pfeiffer.
12. Carter , A (2001). Interactive distance education: implication for adult learner, Interational Media, 28(3), PP: 249-261.
13. Chizari, M, Mohammad ,H and linder ,J.R (2002). Distance education competencies of Faculty members in Iran
14. Crossfield, N. L. (2001, May/June). Digital reference: the next new frontier. *Latitudes*, 10(3). Retrieved July 16, 2005, from <http://nmlm.gov/psr/lat/v10n3/digitalref.html>
15. Dodds, T., Perraton, H., & Young, M. (1972). *One year's work: The International Extension College 1971-1971*. Cambridge, UK: International Extension College.
16. Faulhaber, C. B. (1996). Distance learning and digital libraries: Two side of a single coin. *Journal of the American Society for Information Science* 47(11), 854-856.
17. Gandhi, S. (2003). Academic librarians and distance education challenges and opportunities. *Reference & User Services Quarterly*, 43(2), 138-154.
18. Garrels, M. (1997). Dynamic relationships: Five critical elements for teaching at a distance. Faculty Development Papers. Available online at: Indiana Higher Education Telecommunication System (http://www.ihets.org/distance_ed/fdpapers/1997/garrels.htm l).
19. Garrison, D. R.; H. Kanuka (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education* 7 (2), 95-105.
20. Garrison, R., & Vaughan, N. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. San Francisco: Jossey-Bass.
21. Garrison, J. A., Schardt, C., & Kochi, J. K. (2000). web – based distance countinuing education: a new way of thinking for students and instructors. *Bulletin of the Medical Library Association*, 88(3), 211-217.
22. Grimes, G. (1992). Happy 100th anniversary to distance education. Retrieved August 25, 2005, from [http://www.macul.org/newsletter/1992/nov,dec 92/going.html](http://www.macul.org/newsletter/1992/nov,dec%20going.html)
23. Husler, R. P. (1996). Digital library: content preservation in digital world. *DESIDOC-Bulletin of Information Technology*, 16(1), 31-39.
24. Jeffres, M. Research in distance education. Retrieved August 20, 2005, from <http://www.ihets.org/distance-/ipse/fdhandbook/research.html>
25. Katsirikou, A., & Sefertzi, E. (2000). Inovation in the every day life of library. *Technovation*, 20(12), 705-709.

26. Lebowitz, G. (1997). Library service equity issue. *The Journal of Academic Librarianship*, 23(4), 303-308.
 27. Lipow, A. G. (1999, January 20). Serving the remote user: reference service in the digital environment. In *Proceedings of the ninth Australasian information online & on disc conference and exhibition*.
 28. Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning*. London: Routledge.
 29. McLean, D. D. (1996). Use of computer-based technology in health, physical education, recreation, and dance. ERIC Digest 94-7. Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education. ED 390 874.
 30. Moore, M. (ed.). (2007). *Handbook of distance education*. New Jersey: Lawrence Erlbaum Associates.
 31. Oliver, M., & Trigwell, K. (2005). Can blended learning be redeemed? *Elearning*, 2 (1), 17-26.
 32. Parrott, S. (1995). Future learning: Distance education in community colleges. ERIC Digest 95-2. Los Angeles, CA: ERIC Clearinghouse on Community Colleges. ED 385 311
 33. Rintala, J. (1998). Computer technology in higher education: An experiment, not a solution. *Quest*, 50(4), 366-378. EJ 576 392
- Romiszowski, A. (1993). Telecommunications and distance education. ERIC Digest 93-2. Syracuse, NY: ERIC Clearinghouse on Information Resources. ED 358 841

3/28/2011