distance education book

Editors
Dr. Aytekin İşman, Sakarya University & Eastern Mediterranean University
Dr. Murat Barkan, Eastern Mediterranean University
Dr. Uğur Demiray, Anadolu University

CONTENTS

DEFINING DISTANCE EDUCATION

by Uğur Demiray

I. Introduction

Human being in his socializition history and educational period, always have tried to establish a good contacts for to share or change their knowledge, an experiences with whom anyone established easily communicate. This is a kind of feeding way of his life. It is an obsulate necessity for mentally, physically and emitionally development of humanbeings.

As long as people have been able to write -or even draw pictures-they have tried to use those skills to send messages to other people. The invention of printing and, in 20th Century, broadcasting, have enabled humanbeing to develop new methods of communicating with people who are not face-to-face with eachother (Dodds, 1983, p. 1). In our contemporary world this necessity is already heavily eliminated by developing mass media technology. On those days all people are in contact one or two of mass media in their all day which they are very close to his way of life or his looking angle to the world or life. It is no doubt that mass media is very close and important thing in our daily life, for example, think the television or broadcasting via satellite, as if, they are one of the our family member

These developed techniques have also made it possible to communicate with very large numbers of people through a single act of writing or broadcasting -very many more people than a teacher, or lecturer, could teach in a lesson or a lecture. (Dodds, 1983, p. 2).

Communication technologies have a manipulative power and effect on the field of education in general. These technologies have been increasingly used in education and training for many years to meet different needs. This situation, increasingly use of technologies in education and training, have brought up some new disciplines, or study

fields, into education field. Distance education is one of the newest forms of education which basically depends on these communication and information technology. As a new and modern approach to deliver instruction, distance education has been increasingly used by many corporations and organizations for both formal and non-formal educational settings in the United States and all around the world.

It has been realized by the corporations, institutions, colleges and universities that, when properly and timely used, distance education is one of the most effective, economical, and productive ways of delivering instruction. This fact caused them to employ distance education to deliver training and education to their personnel, clients and students in a cost-effective way at a high quality. That is one of the reasons that distance education, has been receiving more attention recently, especially during the late 1980 and 1990. The reason for such a trend is clear: the challenge of delivering more training to more people on more subjects with higher impact and effectiveness, and in a much more effective way can be met efficiently through distance education methods and techniques. While a new century is approaching, it seems that distance education is going to be one of the most widely used mode of delivering instruction in almost all areas, but especially in corporate training and education.

A recent study reports that corporations and organizations which have successfully implemented distance learning systems list a range of benefits for their corporations. Among these benefits, the most frequently cited are the following (Akyürek oğlu, 1995, p. 81).

Attempts have been made since the 1920's to use print and broadcasting in an organised way to teach people at a distance. At first, these media were used separately for education. Recently, however, many projects have setout to combine print and broadcasting for educational purposes. And there has been growing that occasional meetings between students and tutors help to make it easier to learn from printed or

broadcast materials. Several different expressions are used to describe these various activities.

The purpose of this chapter is to give a place terminology and definitions of the distance education concept from point of scaning literature and various aspects of distance education view which argued by authors or distance educators, before giving our distance education/learning defination. The definition will develope here is used as an instrument to elimminate from the discussion forms of education which are different although they may have some similarities with each other The methodology used is here, based on of acknowledged experts in the field.

Distance education or open learning is one of the important requirements to meet the far reaching expactations of the developed/developing countries for education. In some socities, education has very big problems for the reason finance, quality teaching team, physical capacities and so on. Distance education tries to solve these problems by using mass media to meet educational demand for its society within its own education method since early 1800's. which its history is mentioned in the other chapter with as possible as detail.

II. Well-Known Classical Definitions

Distance education can be defined or called with many the other concepts such as wallness education, open learning, open teaching, non-traditional educa-tion, distance learning, distance teaching, correspondence education, independent study, home study, distance teaching at a distance, extention study, external study, external learning, flexible education, flexible learning, life long education, lifelong learning, contract learning, experiential learning, directed private study, drop-in learning, independent learning, individualized learning, resource-based learning, self-access learning, self-study, supported self-study or continuning education ect in the literature defined by different

authors. In this chapter distance education will named in the name any form of the concept which metioned up such as open learning or distance learning or distance education etc. What-ever it calls that in this chapter all of it will use in the meaning of distance education.

This concept is pleaced detaily in the Keegan's book is named as Foundations of Distance Education. Here will summarize his chapter dealing with concept and defination of the distance education as can we do. We will use distance education as being a generic term of the field of education, as he said. Whatever distance education calls, mentioned above and on discussions in the literature.

It may be describe thus: 'distance education' is a generic term that includes the range of teaching/learning strategies referred to as correspondence education or correspondence study at further education level in the United Kingdom; as home study further education and independent study at higher educational in the United States; as external studies in Australia; and as a distance teaching or te-aching at a distance in the United Kingdom by the Open University. In French it is referred to as Tele-enseignement; Fernstudium/Fernunterricht in German; educacion a distanica in Spanish and teleducacao in Portuguese. This description lists the major terms used by distance education institutions in the English-speaking world and gives parallel terms for the major European languages. Distance education subsumes a number of existing terms but not all are synonymous. (Keegan, 1990, p. 28-29).

These terms have a long history in the education of children and adult at a distance. They still have their supporters who cla im that nearly all distance education is still organized throught the post and that both the public and prospective students recognize the terms. 'Correspondence education' is defined in the UNESCO volume Terminology of Adult Education as:

Education conducted by postal services without face-to-face between teacher and learner. Teaching is done by written or tape-recorded materials through written or taped exercises to the teacher, who corrects them and returns them to the learner with criticisms and advice (Quoted from UNESCO, 1979; by Keegan, 1990, p. 29)

The main problem with the terms of correspondence education that it can not encompass the didactic potential of this form of education in 1980s and beyond: print, audio, video and computer based possibilities must be reflected by the terminology chosen. Another problem is that critics of the term tend to associate 'correspondence education and 'correspondence study' with the some of the less successful aspects of distance education in the past and to feel that these terms contribute to the still-questioned status of study at a distance in many countries.

Even when distance education is print-based the term 'correspondence education' is inadequate to describe courses by newspaper or systems with no postal component. A term is, how ever, need to designate the postal subgroup of the print-based forms of distance education in which student contact is not encourged. It seems suitable to reserve the term 'correspondence education' for this purposes. (Keegan, 1990, p. 30)

History of the distance education terminology based the terms which are can be listed as home study, independent study, external study and distance teachin at a distance etc. Ho me study concept is explained in Keegan's study as:

Communication theory experts tells us that word grow tired and if they do, then 'correspondence study' is a tired word. It is significant that as early as 1926 when the directors of the correspondence schools of the United states came together to form an association, the title chosen was the National Home Study Council and not the National Correspondence Study Council. 'Home Study', however, has little claim to being an overall term as it is used mainly in the United States and is there confined to furter

education (technical and vocationally oriented instituttions) and not higher education (universities and university-oriented colleges). In addition, the distance student may not, in fact, study at home or may study in part at home and in part at other centres (Keegan, 1990, p. 30).

A related concept is independent study. The fact that the student is separated from the teacher place great emphasis on the former's ability to study on his own initative. Independent study is defined as fallows: Independent study, consists of various forms of teaching or learning arragements in which teachers and learners carry out their essential task and responsibilities apart from one another, communicating in a variety of ways for the purpose of freeing internal learners from inappropriate class pacing or patterns, of providing external learners with opportunities to continue learning in their own environments, and of developing in all learners the capacity to carry on self-directed learning, by C. Wedemeyer in his study, named as independent Study, in 1971.

Wedemeyer's defination still involves an element of communication between teacher and learner at some point in the process. As such it is related to concept of distance education which stress the independent self-pacing nature of the student's learning. It is not enough to say that independent study is learning on one's own without establish the context within which a student exercises his or her independence. Total independence takes one into areas covered by, for example teach-yourself books and educational broadcasting in which the element of two-way communications essential in distance teaching is absent (Rumble and Harry, 1982, p. 13).

Let's turn to the Kegan's defination on external study concept in the same book. It is given a place of External Study concept as: External studies is the term most widely used in Australia. It describes well the ethos of distance education as found in Australian universities and colleges of advenced education; a form of education that is 'external to' but not 'separated from the faculty staff of the institution. The same staff has two group

students, one on-campus, on the other external, and they prepare both groups for the same examination and awards. However, 'external studies' can have little claim to general acceptance because of its limitation to Australia and because of possible confusion with programmes structured differently such as American external degree (Keegan, 1990, p. 30)

On the same page Keegan continues to describe of the distance teaching or teaching at a distance by quoting from Moore as follows:

These two terms have been used as a characteristic of this form of education for over a decade. All these teaching methods in which, because of physical separation of learners and teachers, the interactive (stimulation,, explanation, questioning, guidance) as well as the preactive phase of teaching (selecting, objectives, planning curriculum and instructional stratigies), is conducted through print, mechanical or electronic devices (Quoted from Moore 1973, p. 669 by Keegan, 1990p. 30).

Keegan points out that this term does not enough to tell or emphase of the term of distance education. He indicates his thinkings dealt with the Teaching at a Distance as follows: The term has grown greatly in popularity since the inception of the English Open University (EOU) which used it for its journal, Teaching at distance. It is, nevertlles, inadequate for the field of education we want to define. Just as 'distance learning' would be too student-based as an overall term and would tend to ignore the role of the institution, so 'distance teaching' is too teacher-oriented and places all the emphasis on the institution (Keegan, 1990, p. 30).

Distance educaton is very important development for our century by giving education to the people who are living different geography, in different age and different learning capacity. This people who have lost their educating chance for many reasons such as age, illness, war, some family retionships, economic and geographical problems and so on.

Distance education provides educational opportunity to its target by preparing some harmonical combining educational components such as printed course materials, creating face to face interaction medium for academic counselling and student guiding, using satellite, internet, video or teleconferences, broadcasting radio and television courses and the other student support services like library, online communication and computer assisted instruction so on.

As well as known, ideally, the learners and teachers of the distance education systems or institutions are separate from eachother. As being one of the member of the distance education institution, learners are desire to be in good contacts with their instution due to course. This basic necessity has a very important value for the learners and distance education institutions. And also, it is very important to establish beneficially communication channels for a good contacts with its learners for the institutions beside giving quality education to them. In this point, distance education institutions try to establish a good contact with its learners.

Nowadays our century's developments of on communication technology and developments in electrical world gives a chance to the distance education systems or institutions to establish better communication ways than before they did. 21st Century has bright future for the communication and electronic communication technology developments. Jetkins explains our age in the name of open or distance learning as placed belove:

The age of information technology has, paradoxically, seen renewed emphasis on face-to-face and interpersonal contact as a component of good open and distance learning -the recognition that while most people can do most their learning at a distance, learners generally do better with a rounded learning support system which includes some personal contact. Increasingly, distance learning systems are designed to accommodate this kind of interaction, both incorprated within courses and associated with learning

environment with guidance on course selection, through orientation to self-study and well-planned support, disadvantaged adults with a low level of basic education can study groups listening to the radio, with trained group leaders. The importance of interpersonal contact is manifest in the appearance in many contexts of open learning or distance education study centers -places where individuals can consults reference material and other resources.

Secondly, new information and communications technology applications in education have given an immense boost to open and distance learning all over the world. Their immediate attraction lies in their ability to make more learning avilable at the increasing interactivity in the absence of a teacher, through for example multimedia applications and electronic communication. But such learning is available only to minority of adults, those who have easy access to computers and know how to use them (Jenkins, 1997, p. 73).

When the literature scanned, it will be seen that distance education is defined with many different explanation in different sources by different authors. In those differentation, some aspects or dimensions of the distance education have taken first plan or primarly elected by the authors or definators. According to them that aspects or dimentions of distance education has to emphasize or it is so important for the system.

It is very clear that we could not bring a new things in definition studies. In the other words; the best thing is in the defination studies; bring them together and observe that why and how the term is defined and by whom or for what primaryly pointed out. As a briefly before giving our defination here, we will try to carry on to some important definations of the distance education from different and well known authors or sources. In this meaning, of course it should known well that some sources in the literature will be old or not so new. Apart from this situtation, that we have to benefit from some limited sources. It looks as an another problem in defination studies.

Distance education definations starting from the discussions of the concepts which are using the same meaning replace of each other For example; correspondence education is used replace of the distance education such a long time in the literature.

III. Definitions Related to the Correspondance Education

Correspondance education began a century ago in the US. After nearly half a century of practice a group of mostly American and Canadian correspondence educators, most but not all from university extension division, met in Vancouver, Canada, in 1938 to form an organization which they called International Council for Correspondence Education (ICCE) Conferences of these correspondence educators were held about every four years, and it was at the conference in Warrenton, Virginia, in 1972 that the use of the term 'distance education' in English, and the concept of distance as a dimension of teaching and learning, was introduced.

The use of the term was proposed after a search for a name that would describe not only correspondence instruction, but whole family of teaching-learning arrangements that had emerged in the 1960's.

These arrangements had a common charecteristic that the learner and teacher were normally separated, geographically and often in time, and the communication that normally in education occured by word of mouth in a classroom was carried by correspondence, and, increasingly, by electronic media.

These media came to include not only radio and television broadcasting, but audio and video recording, and teleconferencing through computer modems, telephone, satellite and microwave systems (Moore, 1990, p. xiv).

In 1967 Dohmen's definition from the Germany, director of the German Distance education Institute (DIFF) at Tübingen, is;

Distance education (Fernstudium) is systematically organised form of self-study in which student counselling, the presentation of learning material and the securing and supervising of student' success is carried out by a team of teachers, each of whom has responsibilities. It is made possible at a distance by means of media which can cover long distances. The opposite of distance education is 'direct education' or 'face-to-face' education' a type of education that takes a place with direct contact between lectures and studens. (Quoted from Dohmen, 1967, by Keegan, 1990, p. 36).

According to Keegan; from this early formulation these are hihglighted: The organization of self study by an institution, use of media and, differences from direct contact between lectures and students.

On the basis of the research undertaken to date, a numbers of authors -most notably Baath, Keegan, Peters, and Holmberg- have attempted to define what is meant by distance education, and thereby provide a context for furteher study. Their definitions havea built on variying practices and they reflect different backgrounds of the individual concerned (Tight, 1988, p. 56). Here it will discuss mostly quoted definitions by Holmberg, Peters and Keegan.

In 1973 again from Germany, Otto Peters' definition is placed in the literature as show belove:

Distance teaching/education is a method of imparting knowledge, skills and attitudes which is rationalised by the application of division of labor and organizational principles as well as by the extensive use of technical media, especially for the purpose of reproducing high quality teaching material which makes it possible to instruct the great numbers of students at the same time whereever they live. It is an industrialised form of teaching and leaning (Quoted from Peters 1973, by Keegan, 1990, p. 37).

According to Keegan; characteristics of Peters' position are: The use of technical media, the mass education of students at a distance; and the industralization of the

teaching process. In 1977 without motification Michael Moore's definition 1973, distance education defined is:

Distance teaching may be defined as the family of instructional methods in which the teaching behaviours are executed apart from the learning behaviours, including those that in a contiguous situation would be perfomed in the learner's presence, so that communication between the teacher and learner must be facilitated by print, electronic, mechanical or other devices (Quoted from Moore 1973, by Keegan, 1990, p. 37).

According to Keegan; central points of the Moore's definition is: The separation of teacher and learner; and the use of technical media. As well as known the term 'distance education is defined by Holmberg Borje in 1977, which is pleaced belove:

The term 'distance education' covers the various form of study at all level which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertless, benefit from the planning, guidance and tution of a tutorial organization (EDRS, 1990, p.1-2).

Holmberg's definition contains two elements which can be considered as: The separation of teacher and learner, and the planning of an educational organization. Its main charecteristic is that on non-contiguous, i.e. mediated communication. Distance study denotes the activity of the students, distance teaching that of the tutorial organization. There are evidently two chief partners in the teaching process, i.e. the student and the distance teaching organization with its tutors, counsellors and administrators. The organization means here can be school, a university, an assocation or an educational private company.

Perry and Rumble are giving their brief explanation on what is distance education? For education to occur, there must be someone who needs educating and someone to do educating. This implies that there is both a learner and a teacher, and some form of two way communication between them. The teacher must have something

he or she wishes to tell the learner, the learner must make some response to the teacher, and the teacher must then provide some feedback to the learner on what the latter he said or written. the learner, in order to be educated, must acquire three things: knowledge, skills and understanding. Learners must know something (knowledge), they must know how to use that knowledge (skill) and they must know why thel are using it and what its value is in the widest possible context (understanding).

Perry and Rumble are going on their explanations as:

> In this context of education, distance education means that the learner and the teacher are not face-to-face. Thus two way communication must take place
>
> despite the fact that they are not in the same room together. This two-way communication can be established using any medium that is available such as; postal or e-mailing, telephone, fax ,radio, television, computer, modems linkage TV or computers, interactive videodiscs etc. both of side of teaching or learning process. (Perry and Rumble, 1987, p.1)

Antonhy Kaye agrees with Keegan's 1986 definition on distance education concept which is: Distance education in contrast to traditional or campus-based education, is characterised by a clear separation in space and time of the majority of teaching and learning activities. Teaching is to a large degree mediated through various technologies (print, audio, video, broadcasting, computers, etc.), and learning generally takes a place on an indivi dual basis through supported independent study in the student's home, or work place. the quality of the teaching materials andthe level and wariety support for independent study depends on the nature and resourses of the institution or organisation responsible for a given programme, and the available communication infrastructure (Kaye, 1989, p. 6-7).

As shown above, there are many differet definition of distance education, but Kevin Smith think in his article which is titled as "Distance Education: Touching With

Technology", to be agreed distance education definition includes the separation of teacher and learner, the involvement of an educational organization, the use of media and the provision of two way communication between teacher and the learner.

Of all the characteristics, the emphasis on 'two way communication' is the most central for it is the interactive nature of the media on which his focusing. tnis definition of distance education can be fleshed out a little if we consider what is necessary fon an effective system (Smith, 1990, p. 4).

As distance education evolved, so have the roles of students, teacher and institution in the teaching system. As noted by Sir John Daniel from Keegan that as recently as till 1980s, distance education was defining in terms of the correspondence tradition. According to the increasing remote-classroom approach, Moore's earlier and simplier defination changed to the inclusive: distance education is the family of instructional methods in which the teaching behaviours are executed from the learning behaviours. (Daniel, 1996, p. 56) A book is published and titled as Open Learning in Transition, for the 25th Anniversary Founding of the National Extension College (NEC), in 1988. Additionally, it is dedicated to the memory of Michael Young and Brian Jackson whose their energy and commitment to second-chance education which is resulted founding of NEC twenty five years ago.

In that, book distance education is defined by J. Daniel as being educational openless should give a possibility of the study to people previously excluded and be called open learning. Learner can also have either without the other. Daniel focused on endeavours that are both open learning and distance education. Distance education means simply forms of instruction that rely heavily on ways of communicating other than meeting face-to-face. These forms of instruction can be called open learning if they make education accessible to more people (Daniel, 1988, p.127).

Sharifah Alwiah Alsagoff is agree of Daniel and his friends definition in his article which is named as; "Training Needs in the Use of Media For Distance Education in Malaysia". He defines that distance education is an educational approach in which the learner is separated from institution by time and/or space. Communication in distance education is non-contiguous but interactive. Courses involve various media rather than face-to-face teaching (Alsagoff, 1990, p. 155).

Anna Stahmer and friends' give their definition on their article which is titled as "Development in Telecommunication Technology For Distance Education with Reference to Developing Countries".

Distance education can be a part of open learning system which offers open access to courses, or it can be part of strict and formal degree programme. We are concered with the educational process in which a significiant porportion of learning and teaching happens while learners teachers are removed from eachother in space and time.

The learner can study at home, at the place of work, or at a 'host university' campus, in lerning centers or through a combination of such arragements (Stahmer et al. 1990, p. 96).

IV. Definitions Related to the Information Technologies

In whichever, media-based education, like print-based, computer-based or broadcasting-based etc. institution or education systems, the main elements of the separation teacher and learner are given a place all these well known definitions.

It should not forget that there is a relationship between structure of the learning materials and the linking of these learning materials for effectively using by studends depends on differentation of the educational organization and its media planning.

The most notable charecteristic of distance education is that communication between learners and teachers is through print, writing or by electronic media such as

broadcasts, recordings narrowcasts by cable, satellite, ITFS, and fiber tranmission, interactive telecommunication by computer, audio and video teleconfereces or, as is increasingly common, combinations of these educational components of the commuiucaional channels or media.

A second significiant charecteristic of distance education arises from the first. It consists of a new approach to instraction, with the process of teaching being broken into its consiquent parts. Some or all of these are prepared away from learner, and communicated to the learner through the communication technology, with the possibility of interaction between learner and an instructor also being through communication technology.

In distance education, courses are usually design for distribution to audience that are larger, and over geographic areas that are wider than conventional educaion.

Although course materials are produced more centrally, local instructors help learners make individual sense of, and develop critical responses to them (Moore, 1989, p. 1).

So that we can summarize and synthesise these definitions according to the role and effectivly influence of the educational organization, separating teacher and learners dealt with the using media or faced technological medium, way of established communication type; one way or two way ect, privatization and the industrialization of the education.

V. Definitions Structured on Global Scale

Distance education defines as a type of education that takes place when a teacher and student(s) are separated by physical distance and technology (i.e. voice, video, data and print). These type of programs can provide adults with a second change at a college education, reach those disadvantaged by limited time. Distance or physical disability, and

update knowledge base of workers at their places of employment (Fesibility Analysis.....Final Report, 1997, 2-3).

On a global scale, educators are heralding the advent of computer-based technology as the great equalizer that will provide instant education in developing countries. As scholar begin to see the impact that these new electronic media are having on the school, the family and the workplace, they are drawn to a more thorough exemination of the economic, political, and social effects that technologies are having on ways of thinking on cultural values (McIsaac, 1993, p. 219).

Globalism and obligation to the life style and scientifical integration of global changing mentioned in United Nations University's Second Medium-Term Perspective for 1990-95 Period with the global responsibilities especially from point of developing countries view. (Global Change....., 1989, p. 3. The powerful forces now operating at the global level can only be understood and managed through collabrative effort and incorporating perspectives of diverse cultures and religions. It is necessary torecognize that this implies the need for a much higher level awareness of the far-reaching effects of our actions. Individuals, communities and nations must increasly take into account the fact that their actions may have impacts far beyond their immediate sphere of concern or influence and must also take responsibility for the cosequence.

This in turn requires people to be fully involved in the decisions and strategies that are needed to deal with global changes resultings from these actions. Such participation is so important as Turkey, for the young, particularly in developing countries where a majority of the population is under 25 years old, and for women, whose role in providing for basic needs in the family and community is a significiant factor in the development process.

McIsaac gives a place to global culture concept depending Featherstone' opinion. In commenting upon the globalization of cultures, scholars such as Featherstone (1990),

-he indicates in his study which titled as "Global Culture"- agreed that the cultures no longer represent groups of individual nation-states, but rather subgroups of people worldwide who share common jobs, vocabulary, experiences, and traditions.

These people come from many economic, social and religions backgrounds and share, in the postmodernist tradition, a diversity, variety, and richness of customs and distinctive forms of social life. the belief, values, traditions, and symbols reflected in various segments of our postmodern, interdependent world cross national lines. Subcultures share common traditions, symbols, and languag, and may rely on telecommunication and computerized networks of information. the present postindustrial society emphasizes the instant availability of information through mass media, the disappearance of small competing national sectors, and a forging of common interests using telecommunication networks and computerized information resources for the perceived economic benefit of the community.

Educators working with distance-learning technologies such as computer and telecommunication networks are called on to design curricula, frequently for ethnically diverse populations. Distance education in which the instructor and learner are at a distance from each other, is particulary well suited for the use of computers and global information networks.

How can educators utilize these telecommunication systems and computerized networks to promote rather than stifle cultural diversity?

How can the technology of education be made to work for rather than against the preservation of multiple cultural identities? As an educational tool, the computer communicates such values as the significance of knowledge, the importance of the individual as problem solver, and the supremacy of the logic. The computer offers an excellent example of technology that assumes a very specific rationale for knowing.

Distance education can be defined as a teaching and learning assited by telecommunications (İşman, 1997). In this system, learning and teaching facilities are delivered from one place to one or more other places by telecommunication technologies and mail system. This definition of distance education takes us to global distance education. In other meaning this is new and this chapter's summary defination on distance education. Distance education systems can be have been succesflly implemented the nation level in several countries. Thus, it is possible that distance education can be delivered internationally using globally interconnected telecommunication technologies, such as satellite, fiber optics, telephone services (İşman, 1995, p. 2).

In our century, internet and teleconference systems are using very widespreadly as being one of student support services by distance education institutions and by its learner. Including written, visual and audio elements, internet is favourable me dium for the learners. And also, teleconference system is real ize to bring together teacher and learner who are in different place. It is possible to attend to the teleconference by internet by adding sound and visual card in to their computer at home

At the beginning establishing cost is quite expensive of the internet. But, when we think publishing and distributing cost of printed materials, preparing and broadcasting cost of television and radio course production materials and cost of face to face counselling organization, internet is geting a cheaper cost than the other materials produced for the course. It takes us to virtual classroom which almost every teaching course materials present to learners at internet medium as soon as, like end of by 2000 years.

HISTORY OF DISTANCE EDUCATION

by Uğur Demiray & Aytekin İşman

I. Introduction

At the beginning of this chapter we would like to give brief overview of distance education outline or milestones in its developing history,. Than we will give some details on historical developments period of distance education.

As discussed definition of the distance education in other chapter; it does not matter that whatever as is named, distance education not a new concept. It is widely used in all over the world today, in such countries as the The United States, Canada, Australia, Russia, India, most of African countries and like England, Germany, Turkey, Sweden, The Netherlands in Europe and Eastern European countries as Poland, Hungary and Romania etc., since nearly more than hundered years. Its mean isdistance education's roots virtually, goes back to nearly 150 years.

In this ontext, history of distance education can be dicuss generaly in five clear periods. This periods are can be listed as:

* A period of before correspondence education. Some educational activities which are try to aiding for lack of education process before constructing and establishing correspondence education systems.

* Heavily applied correspondence education systems period. Correspondence education systems widely used printed materials by using postal system for delivery such books, newspapers, guide books or other printed medium for realising their aim.

* Instructional radio and television which is called one-way communicational period by broadcasting. In this period broadcasting radio and television used

functionally beside of printed material for being audio and visualising of course materials.

* Than started two- way communicational audio and inteactive period. With two-way audio and video between teachers and students these emerging technologies, educators are able to include more interaction in educating at a distance.

* In delivery of distance education, the fifth period can be describe usin satelitte and future technologies which are integrating via computer and computer combining systems. Telecommunication technologies such as radio, television, video cassette, computer, satellite, and fiber-optics are aiding educators by development in communication and electronic industry.

Before Correspondence Education Period: The approaching to teaching used in early Christian church illustrate different educational and training methods and some key concept of modern distance education. Christ taught face-to-face in small and large groups. Teacher and taught had to be peresent at the same time, which is now called synchronous communication. St. Paul, however, who had the challenge of instructing a dispersed community, developed a method of distance education.

He wrote letters to individual church groups and asked local church elders to read them to their community when it assembled for worship. the analogy with the tutors and study group of modern distance education is clear. Since each copy had to be hand-written and many church members were illiterate, there was little oppornunity for individuals study Paul's letters at home. Paul directed his approach to groups. It was a forerunner of the remote-classroom approach to distance education. From Paul's standpoint communication was asynchronous because he was not present when his letters were studied. However, for the church groups communication was synchronous because they listened together to reading of the letters (Daniel,1995, p. 6).

According to Dean (1994), the earliest models of distance learning were only pre-printed correspondence courses based system. Using this approach, there was no face to face or voice to voice interaction between teachers and students because basic telecommunication technologies such as television and radio were not yet invented. In the correspondence education system, only the postal service was available for educators to deliver their instruction to students who lived in other places.

Teachers sent their correspondence study materials to their students by mail. The students returned their answers to the teacher and waited their grades to be delivered by mail. Now telecommunication based distance education including real time interaction is a part of distance teaching and training at all levels, from primary school to university, for formal as well as non-formal education around the world.

Of course, early distance education applications were running in correspondence education form. Infact, the first correspondence style is started by appearing in newspapers, aiming to educate people.

While the term 'distance Education' is more than hundered years old, recently the field is reborn parallel to the new developments and innovations at technology. Substantially, rapid progress in technology changed the nature of distance education. Historical milestones of the distance education can be summarised as fallows:

In 1833, an advertisement in a Swedish Newspaper opened to study "Composition Through The Medium of Post". In 1971 an advertisement was found in Boston Gazette of March 20, 1728, Quoting the offer self-instructructional materials in shorhand (and possible correspondence education).

In 1977 it was quoted the following advertisement of 1833 (in Lunds Weckebland, Lund Sweden), which expilicitly refers to postal teaching:

A card.

The undersigned respectfully inimates to those Ladies and gentlemens, in the adjanet Towns,who study Composition Through The Medium of Post that the address or the month of August, will be little Grey Friars Street, Lund. A. J. Mueller (From Holmberg, 1982, p. 47)

The main goal of correspondence education was to provide equal educational opportunities for everyone in the country. It helped colleges, universities, and state departments of education to solve problems of equal education. Distance education began from its origins in correspondence education. Correspondence education programs were developed in Canada, New Zealand, Australia, China, and USA in places where people lived far away from each other.

Other variants of distance education began in Britain, in 1836 when the University of London added external examination application in its system. Main aim was to offer a credible examination service to people studying in small colleges. However, the porportion of candidates preparing themselves for the exams by private study grew steadly.

By the end of century over 60% of those graduating in Arts through the external examination system had studied with the (private) Correspondence College (Daniel, 1995, p. 7). After seven years later of 1833; in 1840 Englands newly established penny post allowed Isaac Pitman to offer shorthand instruction via correspondence. According to Glatter and Wedell's study on, 'Study by Correspondence' is indicated that, correspondence education started about 1840, when the orginal instruction was send to students in shorthand by post-card (Glatter and Wedell, 1971, p. 4). In 1843 this type of instruction was formalised by the foundation of the "Phonographic Correspondence Society".

Distance education in the form of correspondence study was established by Charles Toussaint and Gustav Langenscheidt to teach language in 1856, Berlin, Germany. Later on this correspondence studies are verified for many field. Correspondence study crossed the Atlantic in 1873, with founding by Anna Tickner to encourge study at home. Between 1883-1891, academic degree were authorized by the State of New York, through the Chautauqua School of Liberal Arts to students who completed the curriculum of the required summer school and correspondence courses.

According to Glatter and Wedell (1971), Commercial Ventures such as University Correspondence College, Wolsey Hall, Chambers, Clough's Foulks Lynch and Skerry's were delivering instruction to their students during this period in England. Most of these colleges were located near postal offices to quickly deliver their instruction to students. Correspondence education at the university level was soon established. On the European continent, the offering of courses through the mail was an established practice by 1856 (MacKenzie, Christensen and Rigby, 1968, p. 24). In this instruction, a French teacher and a German writer opened a school for teaching language by correspondence. It was closed during World War II. According to MacKenzie, Christensen, and Rigby (1968), the Society to Encourage Studies at Home opened the first correspondence study program in 1873 in the USA. The Correspondence University was established in Ithaca, New York in 1883 (MacKenzie, Christensen, and Rigby, 1968, p. 26).

By 1880, there was a growing desire among thousands of adults for further pursuit studies at the college level but geography, age, or occupational factors frequently separated them from college communities (Mackenzie and Christensen, 1971 p. 39). For this reason, teachers and officers of the boards of education in England began to think about the founding of Correspondence University. Such programs were being more systematically organized by 1890. In 1891, the correspondence depart ment of The Colliery Engineer decided to offer some correspondence instruction in arithmetic, mine

ventilation, geology of coal, methods of mining, mining legislation, and mine surveying and mapping in England (see Mackenzie and Christensen, 1971). Baylor University in Texas opened a correspondence program in 1897 at about the same time as the state normal school at Willimantic, Connecticut, began a correspondence ope ration (MacKenzie, Christensen, and Rigby, 1968, p. 29).

Correspondence Education: In the late 1800's, at the University of Chicago, the first major correspondence program in the United States was established in which the teacher and learner were at different locations. The early efforts of educators like William Rainey Harper in 1890-92 to established alternatives were laughed at Columbia University Correspondence Department. And during 20 years many institutions feel to scanning to their system for to reconstructing. Correspondence study, which was designed to provide educational opportunities for those who were not among the elite and who looked down on as inferior education (McIsaac and Gunawardena, p. 5).

Correspondence studies became an integral to some colleges, universities and correspondence institutions(such as Wosley Hall, Chambers, Clough's Foulks Lynch and Skerry's College, University Correspondence College) and some universities (Illinois Wesleyan, University 1877, correspondence University 1883, University of Winsconsin, 1885, University of Columbia, 1890-92 and Extention Department of the University of Chicago, 1892).

Correspondence education in developed countries is more than hundered years old and had its origin in private concern like mentioned above. University Correspondence College in Cambridge, 1887, establihed by Dr. W. Briggs Wolsey Hall College in Oxford, 1894 and Metropolitan college in London, 1910 which are provided correspondence tuition to the enrolled students. In other countries like Germany, Scandinavia, France and USA correspondence courses started in industrialised cities to help private students.

In Sweden, Hans Hermod opened a small private school in Melmö where he taught languages and commercial subjects in 1890. Dahllöf (1988) indicate that the importance of the Hermods' movement in the name of secondary education in his article which is presented in Oslo as follows: Under such condition it is do wonder that such a pioneer institutions in Malmö expended heavily in 1940s and 1950s, when the social demand for post-compulsory education was rapidly growing but not yet met by the public school system.

During this period a limited number of private and/or state supported correspondence institutes played a very strategic role in the provision of secondary education both for youth and adults in sparsely populated areas and for adults in the work-force all over the country (Dahllöf, 1988, p. 16). The first printed Correspondence Lesson in Sweden tiled as "Book Keeping by Single and Double Entry" got printed in December 1898.

In Wisconsin, seven other universities founded correspondence programs between 1906 and 1910. The University of California at Berkely opened a correspondence education program in 1913. In Baltimore, the home Instruction Department was founded by the state government of Maryland in 1905.

By 1909, 115 children had enrolled in correspondence education (MacKenzie and Christensen, 1971, p. 37). As a further example, by 1910 International Correspondence Schools claimed a total of 184, 000 enrollments (Glatter and Wedell, 1971, p, 4). This number steadily increased up to 1950.

In France, Ecole Universelle Correspondence established in Paris,1907.And In 1939, France Centre National d'Enseignement par Correspondence started in Paris, for to educate people who are lost education opportunity for the reason World War I. Also, National Centre for Correspondence teaching to look after the education of children

who got displaced due to war. This institution is existing even now and looks after the education of handicapped children and children in hospital who cannot get to school

"Tietomies" is Finnish word. Its meaning is "Man of Knowledge" which is the first correspondence institution of Finland, established in 1947. Nowadays the institute functions as part of Rastor Institute. there are two quite clear distinguishable periods in the training activitity of Tietomies. Typical for the first, the so-called 'Period of free-form study' (1946-1956), was vagueness of tnaining goals and fragmentation of study programs. During the second, the so-called 'period of goal-directed study' (1956 to the present), clear goals were set for training and it was directed primarily at work supervisors and company officials (Tuomisto, 1987, p.18).

Beginning in 1914, Norway established its first correspondence education. In 1962, there were 142,801 students enrolled. In 1947 The Netherlands founded their correspondence education in some levels, in 1960, this program had 420,072 students and offered 1486 correspondence courses, In 1953 Malaysia, with, 14,000 students were enrolled in this program in 1968.

The correspondence system in Canada and Australia was started due to the "Tyranny of Distance". In 1914, Australia founded a correspondence education system because the country is huge and people live far from each other. Institutions in these countries catered to the educational needs of learners in sparsely populated rural and bush areas.

Correspondence institutions gradually realised that teaching by correspondence alone would be a poor substitute for formal education. Therefore, some contact sessions were made a part of correspondence education.

Distance education began to enrich the secondary school curriculum in the 1920's. In Europe, there was a steady expansion of distance without radical changes in structure, but with gradually more sophisticated methods and media employed (audio

recordings, laboratory kids). On those years in the United States, advances in electronic communications technology help to determine to dominant medium of distance education.

In the 1920's at least, 176 radio stations were constructed at the educational institutions although most were gone by the end of the decade. After a World War II, radio and television became an integral part of correspondence education especially in the developed countries. Dealing with this improvments, Malhotra (1985), emphasises that whatever be the compulsions for the emergence correspondence education in India or abroad, the fact remains that it has now come to stay and has become an important sub-system of the overall educational system in almost all countries. (Malhotra, 1985, p. 3)

In early 1930's experimental television teaching programs were produced at the University Iowa, Prude University, and Kansas State College. In France, correspondence education was adopted by Ministry of Education -as opposed to voluntary and commercial institution in the other parts of Europe-(Young and et. al, 1980, p. 15).

In 1950's college credit courses were offered via broadcast television. Satellite technology, developed in 1960's and made cost-effective in 1980's enable the rapid spread of institutional television.

After 1960, the correspondence education began to diffuse around the world. For example, The Ministry of Education of Denmark made decision on beginning to the correspondence education after 1960. During 1967-68, correspondence courses were available from various department of all ten provincial governments, from thirteen universities, from four institutions of technology, and a number of private schools and associations in Canada. The past 80 years in Turkey have witnessed dramatic changes. The country, since 1920, has changed its alphabet to the Roman one and established the importance of secularism (the complete separation of religion and politics) in the running

of the government. In the 1970's Turkey began to search for new ways to develop its own educational strategy in order to expand the opportunities for its citizens. It was believed, and enacted into law, that education should be the main responsibility of the government. Many feel that the concept of educational eqality become more meaningful in those years. Correspondence education was opened in 1970 in Turkey. The correspondence education was changed its name in 1982. It is called "The Open Education Faculty" established by Anadolu University in the name of Turkish Distance Education Program. Now it is according to J. Daniels study (see Daniel, 1995 and 1996); one of the sixth mega-universities in the world (Demiray, 1997, p. 14).

Between 1940-1980, a lot of countries such as China, Mongolia, in 1963 Japan, Malaysia, India, and others founded their correspondence education program in all levels in education. In 1964 Zambia and in 1978 Nigeria established their correspondence institutions. Between 1940-1980, a lot of countries such as China, Mongolia, Japan, Malaysia, India, and others founded their correspondence education program in all levels in education. There are some other examples around the world. First, In 1964, Zambian Government founded secondary correspondence education. Second, Nigeria established correspondence education in 1978. This program began to deliver its instruction by mail to students. Last example is that India established an Open school to deliver secondary distance education nationally; in 1989 this became the National Open School (sse for detail to the International Encyclopedia of Education, 1993). So, correspondence education are still emerged in some countries in where telecommunication technologies are not available for regular life and educational system

II. One-Way Communication Period

Broadcast Instructional Radio and Television

The industrial revolution occurred during 1800's and the revolution of telecommunication technology emerged after 1950 have been influenced correspondence education. Correspondence educators began to think about using telecommunication technologies beside printed materiels such as radio and television in their program to deliver their instruction from the main campus to students. During this process, the name of correspondence education was changed and then called distance education. All international countries began to develop their correspondenceprograms and to use telecommunication technologies in their distance education programs. Besides postal services, they first used radio in the distance education to deliver their instruction to students.

Radio in Distance Education Wireless radio was invented in 1895. After that the first patent for radio obtained by Marconi in 1896 and then the first translantic message was send to other place in December, 1901. Until 1910, radio broadcaster did not have any regulations or rules for their services in USA. For this reason, the Radio Act passed by Congress on August 13, 1912 was the first act regarding interstate communication by radio including issuance and registration of licenses (Buckland and Dye, 1991, p. 4). St. Joseph's College in Philadelphia in 1912 received the first the license. After the first license, other schools began to apply for radio license. The National University Extension Association was organized in 1916 at the University of Wisconsin (MacKenzie and Christensen, 1971, p. 53). This correspondence program delivered its instruction by radio in 1916. A lot of correspondence students received their class from radio and postal services. In the mid-1920, British department of education began to provide schools with radio based instruction to support education in Britain. 10,000 schools were using radio programs broadcast by the BBC to support classroom teachers (Kenworthy,

1991, p. 12). After 1925, the use of radio in distance education started to diffuse around the world but the diffusion of use of radio in education around the world took many years because the development of radio technology was very slow in its first years.

The reason for using radio in education was that the capacity of formal schools was not enough to accept all applications. People also separately lived in small villages and towns. Government did not have money to found formal school in the each village and town. The educators thought that radio could be used in education to teach.

As early as the mid-1920s radio was used to support distance education in schools in Britain (McGreal, 1991, p. 12). By the late thirties, 10, 000 schools were using radio programs broadcast by the BBC to support classroom teachers. In 1929, China began to use radio in their education system to support education. In 1930, radio was used in school classroom in USA. There was no voice to voice communication between students and teachers. It was a one-way broadcasting system. Students only were listening some instructions from the radio. Turkey, Canada, Mongolia, India, Africa, Columbia and others followed this technological development in their education system. For example, Canada started using radio in the correspondence education in 1930. During the 1930, Australia also began to use radio in their distance education programs (see Kenworth, 1991).

In the 1947, Columbian government started to use radio in their education. In the 1949, Indian government decided to use radio to support education and deliver their instruction to students who could not go to school. In Japan, the Nippon Hoso Kyokai (NHK) started broadcasting radio programs specifically for high school correspondence education students on a local basis in 1951 (MacKenzie and Christensen, 1971, p. 327). Turkish Government began to use radio in the distance education program in 1973. Turkish Correspondence program transferred their instruction to students by radio. Therefore, Radio had been used in distance education for a long time (Demiray, 1990).

It, combined with correspondence instruction, provided students with teachers' voice in some cases in which teachers were not readily available and the students needed to hear to learn something. Besides radio, television also used, are still using and will use in the distance education.

The first experiment with television began in 1874 when Paul Nipkow invented a mechanical system for transmitting views by direct wire (Buckland and Dye, 1991, p. 11). Viladamir Zworykin got first patent for television. At the same year, President Warren Harding was on the television screen. People stayed in Philadelphia saw the president's picture who was in Washington in USA. Federal government in USA helped to develop television broadcasting. Furthermore, American Congress made decision on a regulate television broadcasting. During the depression, all educational television closed and reduced their budgets (see Buckland and Dye, 1991).

After the depression, educational televisions were in production in USA. For example, between 1932 and 1934, the State University of Iowa, and Kansas State College produced some educational programs. In 1938, the National Broadcasting Company did a presentation on using television in college classroom. On the other hand, some distance educators believed that television was not ready for distance education because the cost effective, quality and technical limitations. After 1940's, educators and television engineers did a lot of research on television and education. It was getting better everyday. During the World War II, the development of television was continued in the world.On June 1, 1944, John W. Studebaker requested two channels for education from FCC. In 1945, FCC gave a permission to establish educational television. After that, colleges and universities were involved in educational televisions. For example, University of Michigan started educational broadcasting services in 1950 in USA.

New York University and CBS produced some educational programs in 1957. A lot of distance education programs in the world began to use television to support their

distance education programs. In today's USA, commercial and public television stations produced educational programs for distance education. 29 million students are able to receive these programs at their home or schools. Some programs are transmitted by cable system to schools and homes. The learning channel is available to 20,000 schools and 17 million households throughout the United States and offers courses in many school subjects.

In 1961, television first was used in university level for correspondence students in Japan. Many correspondence education programs produced a lot of distance programs. In USSR, many broadcasts on television are organized for students in correspondence education. The Russian Universities produced their programs which cover all instruction of correspondence education.In Czechoslovakia, television is used in distance education system. In Hungary, educators also began to deliver their instruction by television in 1952. In 1966, French ministry of education made decision about delivering the instruction by television to students. First French experiment on television occurred during the five weeks of the 1966' summer vacation. 39,000 were enrolled this program and received instruction by mail system. During 1968, American and British colleges and universities cooperated with open-circuit television stations-both commercial and educational to produce instructional programs (MacKenzie, Christensen and Rigby, 1968). Frequently students in USA and UK were offered textbooks and sometimes a full course of instruction by correspondence to accompany the television sessions. Some universities had offered college credit to students participating at home in such programs. However, an important potential for televised instruction lied in closed-circuit television during the 1968.

After 1970 or 1975, the use of television in distance education was diffused around the world. For example, Turkish distance education department began to use television in order to deliver their instruction to students in 1982.

Second example is Canada. Canada began to use television to support their distance education in 1980. Distance education students are still receiving the instruction from television. In 1985, about 200 television programs were made and more than 27 hours of television were broadcast each week in USA (Moore, 1986, p. 5). Universities delivered their instruction by television. A lot of distance education students watched their courses on television. Spain, Israel, Germany, Canada, Pakistan, Venezuela, Costa Rica, and Thailand, Netherlands, and Sri Lanka also used television in their distance education programs to support distance education. Open University in Australia, the Radio Television University in China and The Open University Britain also used and are still using television because using television can enhance the quality of the distance education program (see Holmberg, 1990). In China a nationwide educational program via satellite was established in 1986 (see The International Encyclopedia of Education, 1993, p. 1565). The satellite TV Education Network has more than 400 relay stations, and 30,000 receiving stations. One channel broadcasts 17 hours a day, with 11 hours given to teacher training. So, television has been used in distance education to increase the quality of its instruction around the world for many years.

It can be said that established at that time radio and television were already widespread and set up as national institutes in a number of countries, the open universities were an influential factor in the development of distance education programs (see The International Encyclopedia of Education, 1991, p. 1558).

Today, distance education is widely provided with the radio and television instruction to support distance education. On the other hand, new telecommunication technologies such as computer satellite, fiber-optics, and other begin to enter into the distance education programs. Now, television and computer are used together to deliver the distance education's instruction. There are some software available such as cu-se-me. Thus, the structure of distance education is changing each day. After having experiences

on one way radio and television broadcasting in distance education, instructional designers began to look at new instructional model which can offer two-way interaction between teacher and students.

III. Two-Way Audio and Video Interactive System

When evaluated developments between 1960 and 1990 of the distance education accelerated as a result of both technological and political developments. Two innovations were of note, the use of telecommunications to link remote classroom and enrichment of correspondence education by the integration of other media.

Developments in this period (1960-1990) can be summarize in distance education, first, telecommunication with remote classroom. The arrival of effective audio teleconferencing technology allowed an instructrator to offer a course at numerous sites simultaneously. The University of Winconsin implemented such a system in the 1970s. Soon afterwords satellites could transmit video signals to remote classroom network. Since then this form of distance educationhas developed steadly, especially in the United States. A good axample is the National Technological University, a consortium of engineering schools which offers graduate-level courses by satellite across the USA and internationally.

Second is the diversification of media fo correspondence tution. policies of widening access to tertiary education, combined with the ability of public television and radio broadcasting network for this development was the Uk open University. helped by strong political support, the UKOU's founders created an instution that quickly earned a high reputation for quality and effectiveness (Daniel, 1995, p. 7).

Since beginning 1990's developments in new desktop computers has allowed its users to combine text, graphic, video, audio

and virtual reality to easily communicate in the name of teaching/learning an educating themself.

At the same time wider bandwith and integrated Service Digital Networks (ISDN) has provided for networking of computers, and using them for live video confenrencing, collaborative computing, and holding forums, and chat (which is given a place in the other chapter) session. (See Feasibility, 1997, p. 1-3).

Especially after invention of the radio and broadcasting technologies and recorddings narrowcasts by cable, satellite, ITFS, fiber tranmission, interactive telecommunication by computer, audio, video or teleconfereces changed correspondence education systems' structure dealing with the parallel to the developments of tcommunication and electronic technology in the name of distance education in education field. The institutions are reached their target learners in a shorter time, chaper and to the larger groups who are distrubuted in all over country, even, peoples who are living out of country borders.

On those years institutions are desined their instruction materials with radio and televison programs as being audio and visual supporting components in their running. These media came to include not only radio and television broadcasting, but audio and video recordings, and teleconferencing through computer recordings, narrowcasts by cable or wire, from satellite, ITFS, fiber tranmission, interactive telecommunication by computer, audio and video or teleconfereces, modems, telephone, and microwave systems (Moore, 1990, p. xiv).Instructional television (ITV) was a much-touted distance learning model 1960s; although ITV fell far short of early expectations, today' telecourses and educational programs reach many learners in diverse settings (U.S. Congress, 1989, p. 25).

In 1962 decision that the University of South Africa would become a distance teaching university brought about a fundamental change in the way distance education was practiced in much of the world.

The Open University in the United Kindom at 1971 being a distance education/teaching university, it was offering full degree programs, sophisticated corses, and the innovative use of media. After this radical changing in educatidon, many countries started to the distance education method; like China, Costa Rica, Iran, Japan, Malaysia, Nigeria, Poland, Spain, Sri Lanka, Taiwan, Thailand and the others.

This period of distance education is based on two-way audio and video conference system between students and teachers. It may be called "audio-conferencing" and "videoconferencing".

In these both systems, satellite and fiber-optics are used to deliver the instruction among distance students groups to create two-way communication system. In the audioconferencing, teachers and students can contact voice to voice and ask some questions each other. Also the application of voice-based teleconferencing technology has gained increasing prominence in modern distance education, especially as a compliment to traditional print and postal-based methods (Perrin and Perrin, 1991, p. J-1). Audioconference systems, which consist of loud-speaker telephones interconnected by a conference bridge, enable multiple locations to be in simulations communication with each other, creating a virtual classroom. During 1980s, it was popular in the distance education. Many examples about using the audioconferencing can be found around the world.

Interactive videoconferencing for distance classroom instruction allows students to be perceived as persons rather than a student ID number, as the instructor can call on them by name and make eye contact (Dean, 1994, p. 3).

With the development of telecommunication technologies such as satellite, television, fiber-optics, and other, video conferencing began to became a major vehicle for distance education programs in 1990 around the world. Teacher can give immediate feedback on the students' questions. There is a two-way face to face interaction in this model like traditional face to face model in the videoconferencing system. The quality of video conferencing is getting better everyday in the international distance education programs.

There are many examples about using two-way communication system in the distance education around the world. The movement from the use of postal services to the use of audio and video conference system in the distance education programs can be seen around the world between 1980-1995. With the invention of satellite and fiber optics around the 1957, the teleconference system began to diffuse fast in the distance education programs around the world.

During the 1980's, the University of Wisconsin, which has a state-wide audio-teleconferencing network, enabling professors at one side to deliver lectures to multiple classroom sites around the state, and facilitating two-way communication between professor and students. Empire State College in NY in USA, North East London Polytechnic, and Murdoc University in Western Australia occurred teleconference courses each other during 1985 (see Holmberg, 1990). During the same year, Oklahoma State University and 10 public schools designed and implemented one-way video and two-way audio class to their students. 100 students took

German course from this system. At the same year, Utah Board of Education audio conference system to offer Spanish courses to 500 students. In this system, students always contacted with the instructor through a tool free phone number. TI-IN, the largest private venture delivering k-12 instruction via satellite began broadcasting in September 1985 (Batey, 1986, p. 1986). The region 29 Educational Service Center in San

Antonio Texas provided the broadcast facility (and up link), selected the certified high school teachers, and developed the lesson plans. All courses delivered in two-way audio instruction system. This project is also a distance education example. In September 1986, eight school districts in Eastern Washington began receiving Spanish, Precalculus, Advanced English, or Japanese beamed from a broadcasting studio an the Eastern Washington University campus (Batey, 1986, p. 10). 200 students took these courses in one-way video and two-way audio instruction system.

Other example is The National Technological University in USA. This university offered master's courses in engineering, computer science, and business management to 300 master students across the USA in 1990-1991 (see The International Encyclopedia of Education, 1991). These students and teachers were teleconferencing each other by satellite and fiber-optic system with the remote teacher. The students learned information in two-way interactive system. In October, 1991, the first fiber optic cable for the Iowa Communications Network (ICN) was placed in Iowa soil (Ivanovic, 1995, p. 6). The ICN is a statewide fiber optic network system which can transfer video, audio, and data signals. All schools in Iowa in USA have been connected each other. Students from different high schools enroll in one class. Same teacher teach students who are in the different schools at the same time. It may be said that it is one of the best telecommunication-based distance education system around the world.

During 1992, The University Brunei Darussalam in Brunie installed videoconference system in cooperation with Mitsubishi. This university sometimes delivers its distance education instruction to students by videoconference system. Another example is Indra Gandhi National Open University in India. This university established the audioconference system in 1993. The five state open universities and the 16 regional centers have been connected each other. This university sometimes delivers their instruction by audioconference system. During the same year, The University of

Kebangsaan in Malaysia installed their own audioconference system. This system is also connected with New Zealand and Canada. This University also transfers its instruction to its students live accross the Malaysia by audioconference system.

The Commonwealth Of Learning had established the first overseas videoconferencing link from North America to the institutions involved. Among the many videoconferencing sessions conducted at COL'S headquarters facilities were a series of events organized with the University of British Columbia faculty of music linking UBC and Vancouver-area professional experts with their counterparts in Australia (Perrins, 1991, p, J-4). Canada and Australia also established teleconference system together for distance education program. According to Dean (1994), approximately 15 students participated in a Spring 1993 hotel purchasing course using interactive video between the University of Nevada-Reno and the University of Nevada, Las Vegas. This course was thought by Dr. Leslie and Dr. Marsha.

During the class, the students positively answered all teachers's questions because they had a face-to-face interactions with their teachers. In Kenya, University of Nairobi installed a audio conference system for their distance education programs in 1994. Both the main and Kikuyu campuses as well as six extra-mural study center have been connected. This system improved the efficiency of distance education program which had been using a combination of correspondence and visiting lecturers. Therefore, some other examples can be found in the other distance education programs. The use of audioconference and videoconference in distance education to deliver its instruction to the students have been diffusing very fast around the international distance education programs for ten years. The other telecommunication technology such as computer began to influence distance education program.

Future Technologies: Integrating Satelitte via Computer and to Its Combining Systems Computer Combination system After 1990s, computers were gradually

beginning to play a greater role in distance education programs in developed countries' (USA, UK, Canada, Australia, and others) distance education programs. Today, computer-aided instruction is common in distance education. Students without access to computers at home can often make use of those provided in the study centers. It may be said that computer networks offer many opportunities for distance education.

Computers have already been used in conjunction with programmed instruction in distance education. It can be used as a tutor or personal instructor because the capacity of computer to store information is too high. It has a big potential to be used in the distance education programs around the world to deliver its instruction to the students. The computer can also be used for learning games. Distance education programs design some computer programs and then send to the students to get experiences about the topic.

In August 1981, IBM introduced its first Personal Computer (PC) (see Buckland and Dye, 1991). After that year, other companies started to produce their PC computers in the market. It is getting cheaper every each day. Distance education programs are affected by the computers and started to use it in their programs because it offers new opportunities for students involvement and participation in instruction. There are some examples around the world.

Computer conferencing was recently used by second graders in Illinois to "talk" with a children's book author in 1988 (Moore, 1989). USA and Japan implemented a computer based distance education programs during the 1980's. In this programs, students in Hawaii had combined audio and computer-based massaging to bring in guest speakers and communicate with other students in Massachusetts, Japan, and other locations (Moore, 1989, p. 4).

The other example is Open University in UK. This university has been used computer networking as part of a course which also uses printed texts, television

broadcasts, and audio cassette. The network linked 1,500 remote students each year with their local tutors and their central academic staff, and computer conferencing was used for discussion of course topics, and to generate assignments and practical work for the course (The International Encyclopedia of Education, 1991 p. 576). The university of Phoenix, in Arizona, in USA uses computer networking for the delivery of postgraduate business courses, requiring students to work in small groups, but remote from the central site.

Between 1989 and April 1990, the Technical Education Research Centers in Cambridge, Massachusetts in cooperation with the National Geographic Society implemented computer-based distance education among 600 schools from Canada and USA (see McConagy, 1991, p. 801-802).

According to Perrins (1994), at the end of September 1993, COL staff installed a ground station in British Columbia, to serve both COL headquarters and the University of Northers British Columbia (Prince George, Canada). In 1994, COL began testing such a system in locations in the Caribbean, using COL as an Internet "hub" site to provide the educational community in countries such as St. Lucia with access to inexpensive e-mail. Other telecomputer project was done in Las Vegas in USA. This pilot study was performed in the Spring of 1994 at the University of Nevada.

The students took their courses in the telecomputer based classroom. Another model of using computer in distance education is computer mediated communication system (CMC). Computer mediated communication and telecomputer communication are similar, except for real time, audio/visual conferencing (see Dean, 1994 p. j-4). CMC increases the interactive communication between students and teacher because the student can mail their questions electronically to the instructor at any time. And then the instructor can send their answer to the students by internet system. It occures in a few second.

After 1982, Computer-Mediated Communication System (CMCS) was implemented around the world. COSY (COnferencing SYstem) at the University of Guelp, Ontario, where a course an 'Adult education: principles and practice' was first offered in 1984 to a group of graduate students in the School of Extension Education; EIES (Electronic Information and Exchange System) developed at the New Jersey Institute of Technology, which is used by, for example, the New School for Social Research in Manhattan to provide on-line courses for credit through its 'Connected Education' project; and PARTICIPATE at the New York Institute of Technology, where a range of distance education versions of on-campus courses in the Independent Study Program are now being offered to students (Rumble, 1986, p. 197).

Other example is Turkish experience in computer-mediated communication system. In 1992, a computer-mediated distance education was implemented between Turkish Open University and American universities the University of New Mexico, the University of Oklahoma, Florida State University, Arizona State University, and the University of Wyoming in Turkey (see McIsaac, 1993). American and Turkish students took some courses from this system. The achievement of students was too high as expected by educators. Hence, there are some computer based distance education examples in the world. The use of computer combination system in distance education have been disseminate in the national and international distance education programs. In addition, the hardware and software such as se-yu-se-me and others for computer-based distance education have been developed very fast because there is a huge market for this system around the world.

The Future Technology in Distance education Telecommunication technologies such as satellite, computer, television, fiber-optics, and others have been developing very fast and incredibly and will offer big opportunities such as face to face for distace education programs for distance educators. In a widely-circulated report on instructional

technology, the Carnegie Commission on Higher Education predicted that by the year 2000 at least 80 percent of off-campus instruction conducted by colleges and universities would be delivered by emerging information technologies (Buckland and Dye, 1991, p. 63). These technologies are used a tool to reach teachers and help students to improve their learning.

Many distance educators agree with that two-way communication system is a necessary element of long-distance education. This system will must be widely used in the distance education programs in the future. the telecommunication technology such as satellite will be ready to help them to design this system in the distance education system because they have a capability to do that for educators. Satellite technology is the fastest growing for distance education around the world. With this technology, educators will may create direct point-to-point (school-to-school) communication. For example, "Direct Broadcast Satellites" (DBS) will be more helpful in the future. DBS is a system that allows people to receive programming through a satellite dish (Grant, 1994, p, 78). No, not the 10-foot diameter satellite dishes people have seen littering the countryside, but 18-inch dish that mounts unobtrusively to the outside of their home, apartment, or in their backyard. This receiving dish is then converted by cable to a converter box near the TV. With this technology, students will be able to teleconference with their teachers and their partners at their home or their offices.

Another example is "Personal Communication Services" (PCS). PCS will be a network of wireless services similar to current cellular telephone systems (Grant, 1994, p. 362). Like cellular, PCS will utilize microcells to cover each service area. However, the microcells that make up the PCS system will be much smaller than those of cellular system. PCS is also more flexible than cellular phones, providing for data transmission between computers and pagers. People with this system will be able to see each other on the telephone. The PCS will aid distance educators to design face to face class facilities.

The distance education students will be able to take their courses at their home, office or coffee-house because they can communicate anywhere with the PCS.

Third example is "Satellite-Based Distance Education". One advantage of satellite-based distance education is the fact that it can cover wide geographical areas. Schools that cannot afford to provide facilities or produce programming for other distance learning systems can join statewide or multi-state satellite networks for delivery of effective programming (Grant, 1994, p. 294). The future of satellite-based distance education is promising. With digital compression leading the way to a new revolution in satellite use, the outlook for programming network is promising. With this telecommunication technology, distance education programs will be able to deliver their instruction from their main centers to other countries. It is called "Global Distance Education". Distance educators will design more effective and efficient global distance education programs in the future.

Other example is Computer technology in distance education. In the future, Computer conferencing system will be more useful in the distance education programs. The hardware and software of computer technology will be very complex which can help distance educators to design some teleconferencing facilities in the program. The personal computers will be provided with a more complex camera, speaker and telephone line. This combination can create a computer conference in the classroom, homes, and offices. Students who are in the different schools located in the other countries or states will be taking course form the same teacher. The teacher will be able to watch ten or more students group on the computer screen. They will also talk to face-to face each other in the classroom. These kinds of applications can be found around the world because it has already existed in a few distance education programs.

The last example is "Virtual Learning Environments". Distance learning is changing educational boundaries, traditionally defined by location and by institution

(Buckland and Dye, 1991, p. 70). In the pooling of students and teachers, distance learning efforts reconfigure the "classroom." In the future of distance education there will no the physical space, classrooms, physical classmates, and physical teachers.

It is called "virtual reality". It promises to revolutionize disciplines as diverse as the fine arts, medicine, computer imaging, architectural design, education, and robotics. With this system, people will take a trip in some museums or other places.

IV. Conclusion

Between 1975 and 1995, the distance education programs have been diffusing fast around the world to offer an equal education for every one and increase the education level in international countries such as Turkey, India, Spain, Israel, Pakistan, Germany, China, Thailand, and others. In the future, the level of education will be very important for being a developed nation in the world. Today, more than ten million students are in distance education programs and more than two million students received their high school diploma, B.A., M.A. or M.S. degrees form the open universities and open high schools around the world. This author believes that during 2000, the number of students and schools will continue to increasing in the world.

In the today and future, it is easy to use many telecommunication technologies for distance education delivery system. Especially in the future, there will be an unlimited technological potential to use for distance educators. These authors suggests that in today and future's distance education programs, distance educators should not never forget "humanity" in their programs because if they do not pay attention it, their distance education programs will be fail.

DISTANCE EDUCATION AS A CHALLENGING CONCEPT IN SOCIOLOGY

by Adnan Boyacı

I. Introduction

In this chapter, it is critically aimed to examine sociological meaning of distance education as a challenging advantageous of new information and educational technology within the framework of societal implications of three main traditions- Postmodern, Marxian, Functionalist.

The contemporary period is often characterised by unpredictable changes realised in all dimensions of sphere of human social life. Besides individuals, also societies with its all-institutional structures are compelled to change in order to survive within the process of globalisation and post-modern trends. Thus globalisation and post-modernism as the key terms that underlie the dynamics of societal change and technology another of the accelerative force of change agent have defined the process of change as a whole. Education as also societal institution has been in this process of change. Strategies which aim to cope with accelerative change have became much important not only important for individuals but also institutions. Common demands of both institutions and individuals to meet the needs of change necessitate the search of new educational environment that solves the problem in access, equity, excellence and funding. And distance education with the means of new information and communicative educational technology has emerged as a leading strategy for meeting needs of change drived by concept of globalisation and postmodernism.

II. Distance Education Within The Concept of Globalization in Postmodern Approach

The current period in which distance education exist have difficult question of interpretation. And in order to understand postmodern implications of distance

education in the globalized conjecture, it's inevitable to outline some of the key socio-economic and cultural changes which are held to constitute the condition of postmodernity in the present period. According to Giddens, the economic technological and cultural changes that constitute a condition of late modernity represent already existing trends. For others (e.g., Harvey, 1991; Lyotard; 1984) these trends signify the inability to fulfil its aspiration promise, and represent what has come to be termed a condition of postmodernity. In effect, the only things that appear certain are the lack of certainty about how to characterise the increasing complexity of contemporary times and unprecedented uncertainty faced by all sectors of education. (Edwards and Usher, 1997, p. 1)

Today's world conjuncture has been characterised mostly in economic terms as a period of revitalised capital accumulation based on globalisation- the integration of economies of nation states through market mechanisms, accompanied by the transnational flexibility of capital and labour markets and, much more importantly, the new forms of information technology- all of which have helped bring about new forms of production, distribution and consumption. With the globalisation economic competitiveness necessitate a flexibility that has resulted in a shift toward post-fordist form of organisations in fragmented and volatile markets for goods and services (Murray, 1989) The greater integration of the global market, therefore, produces homoge-neity and heterogeneity simultaneously. Globalisation has meant to spread of the market economy, Western institutions and culture. (Giddens, 1990) Within the globalized economy, the paradox, which is between process of homogeneity and heterogeneity, is a manifest between regions for investments and the jobs with each emphasising its uniqueness and differences as a place that will offer the most advantageous condition for free-floating capital. Coca-Cola for example, now refers to itself as "multi-local" rather

than multi-national. (Featherstone, 1985) And so indigenous values are articulated with global identities within the dynamics of market mechanisms.

It's also argued that same paradox between process of homogeneity and heterogeneity is emerging from globalisation in cultural sphere. At one level, urban and suburban landscape became more identical with familiar icons such as golden arches of McDonald's and with certain media images instantly recogni-sable in every corner of globe. We are witnessing a process of global culture con-vergence, the production of universal cultural products and global market consumers. (Kenway, Bigum, and Fitzclarence, 1993, p. 118) An apparent common defiation and marketisation of culture come to the scene. The indigenous values of local have begun to gain "universal " values by stimulating globalisation either in market or cultural sphere of human life. However, after this process ends, emerging value is neither indigenous local value or nor a global value.

Changes in economical structures go changes in cultural forms. Firs, in the realms of culture narrowly defined (film, music entertainment, fashion, architecture and art) modernist seriousness and the search for deep, often hidden meaning is contested by postmodern "playfulness", depthlessness, eclecticism, and self-referentiality as the possibility of providing secure and deep meaning is overwhelmed by the profleration of signs of images. Second, we find it, in the significance of culture to economy social formations as a whole, where tight boundary between the realm of culture and realm of socio-economic.(Edwards and Usher, 1997, p. 4)

With the increased significance of culture, such as entertainment, the media and increasingly education itself became more significant in contemporary social formations and development of consumer society. (Field, 1994)

The influence of fashion image taste pervades increasingly all-embracing consumer culture. Choices about the cloth we wear, the food we eat, how to decorate

our homes the places we travel to, became the realisation of taste and taste is educated through media and advertising as well as through conventional modes of education and training. Learning through life and lifelong learning became neither simply aspect of economic instrumentalisim nor an assertion of enlightened humanism but a means to constitute a meaningful life through consumption. (Edwards and Usher, 1997, p. 4)

In fact in this perspective people consumes not for needs alone but to under-lie their differences in their identity. And Consuming became a instrumental tool for constituting an identity or emphasising socio-cultural distinction they have. And thus either cultural identity of people or of even society is integrated into economical changes within the postmodern trends.

The uncertainty, decentralisation, fragmentation and complexity as the key terms that underlie the postmodern understanding have been became central to people life style. Personal identities are permanently reconstructed with those terms that are mentioned above. And differences became criteria in expressing the self-identity that accelerated the boundlessness, openness and pluralism.

It has been argued that educational discourse, form and practices play signifi-cant and powerful role in maintenance and legitimisation of modernity. They have been in many senses remain the means of transmitting, through certain kind of curricula modernity's message of "progress", of mastering the world in the cause of betterment through objective knowledge and scientific rationality. One of the consequences of this is a suppression and exclusion of the "other", the radically different and implicit acceptance of a western white male middle class norm as a as a universal foundation. (Edwards and Usher, 1997, p. 9) Therefore educational crises through "others "come to the scene as a critical issue. In that point, the distance education emerges as a strategic challenge that enable those who are excluded because of their radical identities or of incompetence to white Angola-Saxon middle class standards such as colour people, homosexuals or

marginals to utilise from opportunity of education much more effectively. And thus, distance education has emerged as one of the new instrumental way that aims to reconceptualise the concept of education. In this reconceptualisation process, boundlessness and its plural socio-cultural contextuality signify its meaning. And so, openness, equity in access disregarding of ethnic, racial, religious and socio-cultural differences makes distance education a challenge to already existing traditional educational environments.

Of course these features can only live in a postmodern world in which multi cultural and articulated identities of local and global are accepted without taking care of their origins. By so, distance education on the one hand has become a critical instrument to provide effective opportu-nity of education with its challenging nature, on the other hand as a part of process of globalisation forms multi-cultural and multinational mass of people who are free from imposition of modernity

III. Marxian Point of View

On the other hand, from the point of Marxists, a new perspective emerges that capitalist system has a dynamic system needs to be continuously renewed and reproduced itself. Internalisation of conflict and struggles is the main concept that underlies the dynamics of reproduction process of capitalism. Every barrier and each conflict that hamper, retard or constitute a threat against either existence or mechanisims of system are made them unaffected by internalisation process re-alised within the system. Conflict or struggle became apart of system. Their threating aspects of discourse disappear in the discourse of system. And, thus, system is reproduced through ideology of internalisation. Today, opportunity of education as one of the central problems of developed industrial countries constitutes a serious conflicting issue for harmonious whole of system. Distance education, from the perspective Marxist ideology, is defined as a leading

strategy that aims to internalise the conflict in the opportunity of education. In fact, educational system is already thought as an integral element in the reproduction of class structure of society (Bowles and Gints, 1976, p. 57) It does this in two ways; it justifies legitimates the class structure and inequality by fostering the belief that economic success depend on the possession of ability and appropriate skills or education.

Secondly it prepares young people for their place in the world of class-dominated and alienated work by creating those capacities qualifications, ideas, beliefs which appropriate to a capitalist economy. In other words the function of education is reproduction and this takes place by means of legitimisation and socialisation. Within this framework, distance education is criticised by Marxists as a strategic counter discourse of system for providing spread of education to masses. For them, by distance education, on the one hand, effective training education of people, belonging to different strata of society, is realised in order to increase efficiency of production process on the other hand, the conflict in opportunity of education is eliminated by facility of distance education-equity in access Another argument, also claimed by Marxist, is that distance education, in fact, as a new form of lifelong adult education emerged as ideological tool for dominators of the system. According to this view, distance education as a new invention of dynamic of capitalism provides necessary identities to manipulate the changing faces of consumer culture. An apparent intervention of dominators of the system to the "preference" of people of capitalist society can not be legitimised in society: Lifelong learning that's one of the logic behind the concept of distance education is defined, according to Marxist paradigm, as a value-loaded political apparatus to direct the choice of free-will of people by using main facilities distance education such as pervasivenes, low cost accessibility.

IV. Functionalist Point of View

Education is the influence exercised by adult generations on those not yet ready for social life. For functionalist, in order to understand the major function of education, what people must do is look at society and see how education fits into it. When we do this we'll see that education is social nature and this social nature is defined by society not by individual. And the prime function of education is not to develop the individual abilities and potentialities for their own sake. Rather it's to develop those abilities and capacities that society needs. In fact, in this point of view, the major concern is the harmonious integration of society as a whole. And all of the thoughts originated from the fact that society is something different from just collection of individuals. It's an organic, organised whole, which has harmonious integrated parts. And the maintenance of this organic whole depends on the existence of solidarity among various parts of society. And the major function of education, in this sense, is to contribute the creation of this solidarity in the society.

The two main questions underlie educational approach of functionalist perspective. First, what sort of society do we want

to create or maintain? Second what's the role of education in creating or maintaining such a society?

The basic answer to the first question asserts that a society in which there is a great concern for, and feeling of 'community' and 'social solidarity' is wanted to create. In fact, for them, societies are classified into two evolving stages-mecha-nical societies through organic societies.

Organic societies as a high socially integ-rated harmonious wholes were the societies in which ambiguous division of la-bour, primary social relations, and highly valued community norms were essential.

On the other hand, mechanical societies as today's complexly specialised and relatively less integrated wholes are the societies in which high division of labour, secondary social relations, and openness to anomie are essential as a necessitates of advanced industrialisation. The answer of the second question basically is given by referring the main features of organic societies that education is the only institution in which collective socialisation experiences can be created to prevent anomie and to form harmonious integrated whole.

Within this perspective, distance education with its one of the challenging strategies which aims to provide mass education can be seen as contributing tool for creating and enforcing a harmonious society. School, as a central element of this process, is a limited physical area.

On the other hand, distance education enables masses to experience intensive opportunity for collective socialisation. Thus, ultimate aim of education- transmission of societal values to the genera-tions for creating socialised society can be realised much effectively in the educa-tional environment characterised by distance education.

When functionalists explain the changes in current condition of education, they emphasise negative aspects of complex fragmentation of division of labour and high differentiation in society. People belonging to different fragment have to be continuously socialised within the process of education to preserve harmony in society. And education as an institution, with its classical form, is not capable of providing continuos and various educational options to masses, restricted by time and space impositions. That kind of education can only be realised in the concept of distance education.

V. Conclusion

In conclusion, distance education emerges as leading educational environ-ment for the society's needs of change. In today's world, unpredictable changes di-rect our life

completely. And everything is compelled to change in order to survive. Education as one of the engine of this process of change is a very critical institution of society. Whatever tradition people belongs to, all of them accept the fact that distance education is the outstanding way to manage the change in education and in society. Opportunity of education, existence differentiated identities, the dilemma caused by globalisation and indigenisation of culture and maintenance of harmony in society through socialisation realised in education are the some of the issues that are challenged by solutions of distance education.

A CONCEPTUAL ANALYSIS OF DISTANCE EDUCATIONAL FUNCTIONS AND PERSPECTIVES IN SOCIOLOGY

by M. Cüneyt Birkök

I. Introduction

The distance education is analyzed as a problematic conception in social reality. Because of the educational facts, it has been realized many radical changes in modern era that could be rated as revaluation. New technologies develop continuously distance education models, so it must be expected new revolutions become reality. However, rapid change in social reality causes to lose structural balances and to prevent benefits of distance education.

Since social facts are the subject of sociology, and distance education with its new technologies is being observed in social reality as a very important factor that affects social structure and social change, there shall be a sociological analysis for distance education. In this essay, the phrases of "distance" and "education" are going to be inspected by applying the concepts of social structure and social change as named sociology. At this point, a basic question arises: How does distance education function and change in a given society, if it is taken as a social phenomenon? To make an analysis for the question in this limited work, I am going to use the content analysis and observation methods to examine the terms of distance and education effected by technology with the aspects of social structure and social change. For this aim and as a part of methodology, a point of view must be constructed in order to discuss the distance education with some sociological perspectives and concepts.

In the following parts of this study, some literature is reviewing on the sociology of education. Sociological perspectives are discussed, and then some hypotheses are assumed that taken for granted in this paper. Those analyses have been developed and dealt with them as a sociological problem in distance education such as group structure,

social control in society and technological effects on social change. In conclusion, the distance education is examined as a factor that determines social structure. It has primary contribution to social structure. Thanks to distance education methods, necessary knowledge is to diffuse to the person at the forest rank of social structure, and to draw them rapidly to higher ranks. These conclusions are considering that distance education based on technology modifies social reality. However, during this rapid evaluation, the balances in social structure are being loosed, and therefore many social problems arise. Then, new developments of distance education bring up solutions for those problems. Sociological researches in the field of distance education will give some light for the reconstruction of social balances in this circle.

II. Sociology and Education

Sociology

Social structure and social change are two proper concepts in the field of sociology to begin any sociological analysis as starting points for sociologists. Therefore, we shall handle distance education with those concepts. Society, as a whole construction, has two aspects that composed of different constituent to function separately and to work together. The concept of "social structure" explains one aspect of society; the components of society and the relationships between each other to construct society together. The "social change" is another aspect of society; at the same time, mean that the society is enrolled in a changing process for a time. We do not encounter any unchanging or fixed society in the history. All institutions, values or social functions are changing at various speeds and ways; they are getting new meanings that are examined by the concept of social change. Every certain form of a social construction or a change in society has influential reasons that are created by them such as social events or scientific

discoveries of new educational ways. Therefore, distance education shall be analyzed in the frame of social structural and social change concepts.

Generally, sociology is to examine people's social behavior. Its main idea relating to our subject (the distance education) is that the behaviors are formed by interactions among individuals. In another word, a person's thoughts or acts are effected by his groups. These interactions may go beyond time and space boundaries. The people who live in different time or place are interacting with each other via technology and educational systems. Cultural components spread out distant places and time. The cultural components are transferred by technology to new generations or distant place. A new component may be seen in more than one society at the same time. Similar social facts may be seen in different social groups that are no direct relationships established. The transformation of social values to new generation is also one of them. Different societies have found same set of solutions to organize their needs and to rule their order. Main institutions (such as education, religion, and family) that are created through time can be seen everywhere. Historical observations lead us to the findings that interactions among people have common results. Shortly, continuity of society has been obtained with this interaction, and distance education is one of the tools of society.

Sociology of Education

Some educational researches already have being done by the sociology of education. Essentially, the educational sociology, a sociological field considering distance education in general, and as a branch of applied sociology in particular, has examined educational facts, since at the beginning of this century. Its guiding assumption has been that education is another name for socialization in the broadest sense and should yield rational educational aims and methods and a body of techniques for society. Sociology of education is the application of sociological theories, perspectives and research methods to analyze educational processes and practices (Jary, 1991, p. 472-3). The process of

education, on the other hand, has been understood as a contribution to the promotion and maintenance of the social order. Especially, Durkheim and Mannheim's works have been done with the view of functionalism and to regard education as a means of solving problems and removing social antagonisms.

Early studies of this field explain their aim cited from J. Floud (Floud, 1967, p. 228) that "educational sociology is interested in the impact of the total cultural milieu in which and through which experience is acquired and organized. Educational sociology is particularly interested in finding out how to manipulate the educational process (social control) to achieve better personality development" (Brown, 1947, p. 36).

It has also been remarked of that "educational sociology included anything in the field of sociology which could be related to the learning or socializing process and anything in education that was subject to sociological analysis" (Brookover, 1949, p. 407). Since then "the sociology of education is concerned with any instruction or training of individuals for which social provision is made, whether or not it is concentrated in the early years of life, undertaken through the agency of specialized institutions, directed generally to the promotion of consensus and integration through the inculcation of attitudes and values or the formation of personality, or specifically to vocational training. In short, its subject-matter is the assimilation of the individuals into a cultural tradition" (Floud, 1967, p. 228).

In early studies of distance education is not taken as an important subject in the field of sociology of education. It is observed that the importance of the subject has been increased by using technological tools. Today, it is defined as the most industrialized form of teaching and learning and as such also as a typical product of industrial society. Therefore, it seems an educational way of the future.

There are two main perspectives in sociology to examine social facts. Those are macro-structural and micro-interpretive perspectives. Other perspectives may be included into one of those. Macro perspective assumes that the reasons of variables lie under social structure of social system. Micro perspective stresses more likely social psychological explanations. Both of their dependent variables are the same (Goldenberg, 1987, p. 6-15). Distance education should be examined separately according to those perspectives. To make a sociological analysis we have to clarify and narrow down our perspectives, and suppose assumptions used in this chaper.

More specifically, social researches in sociology should attempt to explain how social groups are formed and shape individuals in the case of distance education. How this process goes on and how is effected by distance education must be questioned in order to begin the explanations. The clearest answer for this question is social mobility. People may exceed time and space, and may not only go easily into any group via educational technology but also create them. Thus, social mobility increases speedily. Depending on this, social reality is changing rapidly, too.

Distance education and technology are contributing to this general fact. Interactions between people and society make education institutionalized and develop technology. The most important factor in new knowledge society is to use new technologies in education. It speeds up the process of social mobility, and condenses socialization. In conclusion, researches in the field of distance education should cover all social units in which socialization is in question.

Distance education is based on technology, so the two main concepts that must be examined are education and technology. Therefore, the first perspective is the relationship between education and technology. In this frame, new problems arise that depend on them. They must be evaluated while we practice them, and the analysis to be done concerning distance education in this paper must be critical. The second

perspective is an interaction between individual and society. Furthermore, separated discussions must be done from the angle of individual and society. It must be questioned how distance education is effected from these factors, and what the reasons are for them, and what the direction of change is. Looking for answer for those questions is to frame a perspective.

In this paper, some variables are assumed. The distance education had been granted as explanatory (independent) variable and evaluated its effects on education (therefore social structure) "negativistic" and "skeptically". It means to be the best critic we can be and not accept a particular conclusion until we have examined every possible alternative and been able to discount or discredit them all as much as possible.

However, it cannot be expected to examine deeply every aspect of the distance education in this limited spaces, but we do not phrase our claim in such a way as to make it non falsifiable.

In this frame, our first assumption is that a direct relationship has been constructed with technology and distance education; the changes in social reality are speeded up due to distance education technologies. The effect of "speeding up gradually" is the main premise we shall take into consideration. Therefore, we should not limit the analysis of given methods of distance education. The meanings of distance educational concept will change as technology develops.

Another assumption is that distance education occurs in the remote places through technology. Furthermore, diffusion of knowledge has been gotten under control by using same technological tools. Although, technology makes easy to attain the knowledge, it provides to control the knowledge.

III. Sociology and Education

I. Group Structure, Control and Technological Effects in Distance Education

In particular, some matters of distance education should be evaluated with stressing interaction between individual, society, and technology. Those subjects could be classified the group as a unit of social analysis, the control of society as a function of education, and the technology as a determinant both of them.

The first matter in this analysis we evaluate is that the participants of distance education constitute a social group. They are gathering round certain aims. Being together is enough condition for talking about group concept in sociology. However, it should be discussed what kind of groups and groups' effects we are talking about. Distance education is usually defined as not a face-to-face educational way; but this is quite old definition. New technologies give opportunity to people to see their faces even they are not in the same room. Not all members of the group share same actual residence. Students and teachers are not in same place. Their group is imaginary, therefore it has different construction. Direct communication is not supplied. The communication has been established by way of technological tools. Then, many components never have been produced or transferred since the limitation of technology. Some behaviors of people's in-groups are limited. In reality, participants are alone in this kind of group. Whereas, some researches in social psychology show those together actions are more advantageous than single action. The members of face to face group actions encourage each other just because of being same place (Stang, 1981, p. 302-306). The performance of individual is increased if any person watches him. However, it is possible for individual to be discouraged by being under group pressure. The free will and capabilities of individual can not be reflected to his behavior because of group effects. Any natural surroundings created by himself should be the best place to act freely.

The second matter is that educational control has not been constructed formally yet. The problem of not being together in the same residence makes very hard to control the people. Therefore, separated behaviors and attitudes may be developed. For example, there would be no formal clothes to signalize political thoughts (it is very important matter in Turkey nowadays).

On the other hand, it largely would not be possible to classify people according to their attitudes and to transform them some information. Emphasizing an institutional ideology is disappeared in this case. It is possible to think the contrary of this case. Such as the national education of European Turkish population could be achieved by using distance education models.

The disappearing of distance gives some opportunities to people in order to choose any cultural norms according to their will. This very important factor provides democracy to spread out. "In distance education it has always been necessary that learners take over responsibilities for their own learning a function which in other circumstances rests with the teacher or the teaching. The learner, therefore, is given the opportunity to develop self-determination, self-direction and self-control to a high degree. They determine where, when, and how long they want to engage themselves in the learning process. If distance education also comprises contract learning the student is also able to determine or to determine what he or she wishes to learn and how to control and evaluate the results of his learning" (Peters, 1993, p. 237).

In conclusion, it is possible to realize socialization based on larger cultural foundation. The third matter is that the distance education is based on technology. Technological changes determine directly the educational effects on social structure. It not only affects social institutions, but also regulates, and reorganizes their functions. For example, spreading out information networks increases the educated population in the whole world and cumulative amounts of knowledge in varieties. In other words, the

crowd of people and the knowledge has increased. The interaction circle between people and knowledge speeds up technological developments, and draws new dimensions in education. For this reason, educational system explanations in social reality vary in bodily structure or function.

IV. Social Change and Distance Education

Above, we had talked about diffusion of social factors through time and space. Social reality is composed by these accumulated components as a meaningful unit. Due to distance educational technology, social reality is changing rapidly. This speed causes many problems, especially in developing countries. New classes or ranks emerge, and society has been faced with new problems like urbanization or industrialization.

How distance education changes social reality is clearly shown by Gouldner's works. He points out the big change in which transformation of knowledge delivers to distance people, in written forms. Structural changes in education create a new class. The distance educational system becomes a major cosmopolitanizing influence on its participants, with a corresponding distancing from localistic interest and values. This development (Gouldner named it as 'situation-freeness') is heightened by the 'communications revolution' in general, and by the development of printing technology, in particular (Gouldner, 1979, p. 3). "With the spread of printed materials, definitions of social reality available to intellectuals may now derive increasingly from distant persons, from groups geographically, culturally, and historically distant and even from dead persons, and may therefore diverge greatly from any local environment in which they are received. Definitions of social reality made by local élites may now be invidiously contrasted (by intellectuals) with definitions made in other places and times," (Gouldner, 1979, p. 3-4). Thus, social reality will develop without the lack of negative effects of given structure. Gouldner sees the factor of distance as one of the basic changes in social

structure. Currently, the concept of distance in this meaning has been changed greatly. Well then, anybody reaches immediately any kind of knowledge or sends it anywhere in the world. Time and space boundaries to reach knowledge disappear because of the technology. On the other hand, distance education removes the negative effects of remoteness, too. Losing time, negative controls on the behavior and attitude, expenses, and some handicaps of education are becoming decreased. In conclusion, if we take the knowledge as a component of social reality, we may conclude that the production and diffusion of knowledge (independent variable) effect directly social structure (dependent variable).

At this point, the question of "what kind of knowledge is spreading out?" becomes important, because social structure is changing according to cultures transformed from anywhere. Some people, who catch the information sources by themselves, determine the sort of knowledge to transfer. We are facing more clearly with the problem, which is going to be dealt ahead. An educational system, which is constructed according to the knowledge resources, provides to continue or develop given structure. Therefore some negative components also continue or new problems arise in social reality. Nevertheless, human factor is most efficient components; it should be to take into accounts to solve problems.

V. Some Functions of Education

The function of education, in general, obtains social mobility as independently from social origins. Educational fact is a kind of relationship between individual and his aim. The goals of individual or society are realizing via education. This relationship is examined by using three explanation systems. Those are determinist, demystifying, and voluntarist explanations (Pateman, 1993, p. 189-190). If distance educational models are

accepted as models that transfer and transform society, then it must be evaluated with those explanatory systems.

Determinist explanations have two assumptions or two separate determinants, which effect individuals. First, determinist explanation assumes that people are differed from each other intelligently; therefore, the aims are differentiated too. In this case, the distance educational system should be organized according to private peculiarities (Pateman, 1993, p. 188). Distance educational technology provides us a big rank of possibilities choosing best tools and fitting for any kind of personal peculiarities. All abilities can be classified more easily and knowledge transfer can be delivered in the way that is more suitable. The second determinant is the society itself. People's social classes or statues determine the goals. The successfulness or unsuccessfulness depends completely on personal peculiarities. In this case, the social groups (or class, which individuals belong to it) are more powerful than educational institutions. Some kind of social conditions such as educational tools are social determinants. Therefore, achievements of people depend on given social conditions. The distance education as a developed model may break those negatively determined conditions of society.

Demystifying explanations assumes that the educational institutes are not independent places, and social determinants affect them (Pateman, 1993, p. 189). In this case, all peculiarities of group are absorbed by distance educational institutions. Therefore, the institutional qualifications reflect people's professions. In other words, some class characters can be observed in people's professions. An individual who reaches to the end of education is shaped according to his groups' differences. "In general, says demystifying sociologist, schools are not 'neutral' social locations, helpless in the face of 'external' social determinations. Their own institutionally embedded practices shape outcomes differentiated by class, gender and other irrelevant discriminators, such as ethnicity" (Pateman, 1993, p. 189). Let us remember distance educational opportunities.

Moreover, we can say that it will be very productive for our society if new educational models could remove social determinants.

Voluntary explanations differ from the other systems. This system assumes that a person builds up and prefers his future actively and individually, while others emphasize people's passivity (Pateman, 1993, p. 190). People are influenced by their social rank, but their perceptions in occupational preferences are more effectual. He may accept or reject the set of values offered in educational institutions. These attitudes depend on his free will and his social orientation. The distance education may increase his alternatives. It can be offered to him some sets of value system including his own. It depends on his private selections. His social origins are not so much important any more. On the other hand, it would be easier to realize them if he prefers a value system suitable to his origin.

VI. Conclusion

In conclusion, the distance education seems very important factor to affect social reality. It is an educational model of the future created by social reality. Social reality is also effected by fast changing technology. Every society has its unique social structure, and therefore effects of distance education depend on those structural components. Building up new structures determines new educational models to transfer given culture to all social ranks and new generations. Consequently, sociological researches about distance education based on cultural (or structural) differences should be done, because it may be seen reflections of social reality.

Distance education could attract people who wish to improve their vocational or professional status as well as their income, sacrificing their leisure time for gratification often delayed for many years.

On the other hands, the traditional models of distance teaching will no longer satisfy the new needs of new types of person with their particular expectations and values

which are in many cases even the opposites them. In near future, it is going to be designed new models of distance education. "They will probably be combinations of intensified and sustained group work highly sophisticated ways of acquiring the necessary information for self-study and increased telecommunication between the participants. They will have different sets of goals and objectives. And they will have to rely on self-directing and self-controlling that is, on becoming autonomous students" (Peters, 1993, p. 237). This is an optimistic point of view. But we should see another site of reality. The problem we are going to face is that social balances are going to be loosed because of very fast social change caused by distance education. Needed structural and institutional conditions are not provided due to speed of technology.

DISTANCE EDUCATION: APPLICATIONS AROUND THE WORLD

by Aytekin İşman

I. Introduction

Today, telecommunication technologies such as satellite, fi ber-optic, radio, television, computer, and others are used to deliver the instruction of distance education. The main reason of using these technologies is to increase interaction between teachers and students. The interaction is playing a key role to effectively and efficiently plan the instructional activities of distance education. Today, teachers and administrators must be trained to use telecommunications technologies so that they can increase between students and learners.

An alternative way to think about teaching and learning is called distance education. Today, distance education has become one of the most useful educational system for all kinds of students. Distance education is growing very fast because the development of telecommunications technologies have enabled its applicability. Telecommunications capabilities make it possible for students and teachers to share information -personal messages, reports, data, graphics, and so on- across cities, states or continents, thus ending the isolation of the classroom (Knapp and Glenn, 1996, p. 30). Throughout the United States, professors are engaging in electronic instruction, and business people are using electronic conferencing to conduct international meetings across the Atlantic via satellite transmission (Sharp, 1996, p. 277). Teachers at some institutions have developed learning experiences that involve combinations of print, fax, or live and prerecorded video delivered by telecommunications or videotape to home or other sites and interactivity via audio-confe rencing, computer-conferencing, or face-to-face class sessions on university campus (Wagner, 1996, p. 11).

Pugh and Siantz (1995) stated that electronically delivered distance education is one of the most significant changes to occur recently in higher education. According to Barnard (1992), ditance education has always used new ways to enhance the dialogue between learner and educator. That is why numerous universities around the world are involved in distance education and use different methods to achieve their goals. One leading concern for educators today is how to increase interactivity despite the barrier of distance. Their concern has been justified by research results indicating that higher levels of interaction in distance classroom lead to more positive attitudes toward greater satisfaction with learning (Zhang and Fulford, 1994, p. 58).

Distance education is now offered at all educational levels, affecting primary school pupils through university students, and includes general education as well as skills-training and retraining programs.

On the other hand, distance teaching and learning are different from traditional teaching and learning procedures. Distance education provides people access to specific instruction that they would never otherwise received. Distance learning activities encourage autonomy and independence as well as cooperation, support, self-regulated learning, and helping to make the instruction personally relevant (Crotty, 1995, p. J-16).

The new telecommunication capabilities provide many ways to meet educational demands, these include extending professional education to distant learners with the promise of instant access to educational opportunities regardless of temporal or geographic distance (Haynes and Dillon, 1992, p. 35). The number and scope of institutions dedicated to distance education are increasing, and more and more conventional institutions are using techniques "borrowed" from distance education to make their own teaching more effective, efficient, or flexible. In 1994, Portway and Lane observed that:

In higher education, we are experiencing dramatic shifts to notably a move toward lifelong learning as a result of the need to retrain individuals whose skills are no longer marketable. Adult students now constitute over 83%, or 10 million of the nation's 12 million college students (U.S. Department of Education, 1987). The stereo typical 18-22 year-old, full-time, residential college student is greatly in the minority at 17 percent (2 million) of this population. In 1970, older students constituted only 28 percent. United States institutions primarily use distance education to reach the same adult audience that is returning to the campus to complete course work. The adult population indicates a continued growth in the demand for distance higher education as it better meets the needs of adults (Portway and Lane, 1994, p. 196). Educators must deal with distance education because distance education offers an opportunity for educators to offer an equal education system in their countries. Today, there are two categories of distance education delivery system, correspondence and telecommunications technologies based. First one is based on correspondence system. The other one is based on the exploitation of six major technologies; telephone, radio, television (via satellite or fiber optic), video, computer connected to internet, virtual university.

1-Correspondence Education Model

Educators have been interested in offering equal education to all for more than 100 years. The first known instance of distance education, in the form of correspondence education, was implemented in 1728.

Until 1900, the correspondence model was the only model used in distance educational systems because there were no telecommunication capabilities available for educational use. During this time, distance education was generally nothing more than the dissemination of letters and eventually printed materials (Plomp and Ely, 1996, p. 372).

This model is still widely used today because some countries such as Turkey, China, USA, England and others want to enhance their distance education system.

2.-Telecommunications Technologies Based Delivery System

Telecommunications technologies such as radio, television, computers and others are used to deliver distance education instruction by distance education institutes. There are two cate gories of telecommunication technologies based distance educa tion, synchronous and asynchronous. Synchronous system requires the simultaneous participation of all students and instruction. The advantage of this system is that students and teachers can interact in real time. In this system, interactive TV radio, and computer conferencing system are being used.

Asynchronous system does not require two way interaction between students and teachers. Students do not need to be gathered together in the same location at the same time. In this system, videotape, e-mail, internet, television, radio can be used to deliver the instruction to students.

A. Asynchronous System

In this system, students can hear or see their teachers on radio, television or computer screen. Students and teachers can not ask question during the class session because there is no real classroom. This system should be supported by other technologies such as fax machines, e-mail, personal visits, phone calls and videotapes. With these technologies, the interaction between teachers-students or students-students can be increased to learn more.

i. Radio based delivery system: Radio is commonly used to deliver instruction in the developing world because this technology is available almost everywhere. Typically, students can listen but not interact with their courses from their

homes, offices, or classrooms. Instructional programs are presented at specific times. The students can't ask questions of their teachers but follow their textbooks and complete their correspondence study materials. Completed materials are sent to the distance education centers where their work are evaluated.

The medium of radio offered correspondence educators new possibilities for distance education. Radio is an audio-based medium with which most of the people are familiar (Nemby, Stepich, Lehman and Russell, 1996, p.187). Radio was used by The National University Extension Association to deliver instruction to students. Schools across the United States began receiving instructional radio programs as early as 1923 (Hackbarth, 1996, p. 132). After 1925, the use of radio in distance education started to diffuse around the world. According to Worthington (1980), radio has been used as an educational tool in the broadcast mode since at least 1937 and continues to be used. In 1989 Evans and Nation mentioned that The University of New England, located in Armidale in northern New South Wales, had over 6000 external students and was a major provider of distance education in Australia. This university developed a radio broadcasting project in 1986. It now assists teachers at the university to deliver their instruction to external students through local FM radio stations in Sydney (550 kilometers away), Newcastle (400 kilometers away), and in Armidale. Today, radio is still used in distance education by educators in many countries such as Turkey, China, USA, and England. Broadcast radio is an extremely valuable form of publicity for distance teaching institutions and one of the few methods of distribution guaranteed to be available to all students anywhere in a single country (Harry, John and Keegan, 1993, p. 180).

ii. Television based delivery system: Distance Education Centers may use television to deliver their instructional programs. Unlike one-way radio, students can see and hear their teachers on the television screen in their classrooms, offices, or homes. In

the future, these centers will produce instructional television programs for students around the world. Teachers can't communicate personally and receive questions from their students, but students can send a message with correspondence study materials used for evaluation.

Television under the titles of instructional television (ITV) and educational television (ETV) has had a more rapid penetration into the educational market than radio (Worthington, 1980, p. 8). Educational television was developing as early as 1934 (Moore and Kearsley, 1996, p.27). On that year, Iowa State University used television to deliver instruction. Educators started to systematically use this innovation for instructional purposes during the 1950's. By the 1960's, education systems were finally aware of the potential educational value of audio-visual and telecommunications capabilities (Worthington, 1980, p. 12). Television is now used around the world in distance education systems. With recent improvements in broadcasting, instructional television (ITV) is becoming a viable option for improving educational opportunities, particularly for distant learners (Silvernail and Johnson, 1992, p. 47). The principal advantage of the TV is that students can see and hear the instructor.

Today, more than 200 college level television courses are produced by American colleges and universities, by public broadcast stations, among which one of the leaders is Maryland Public Television, and by members of the International University Consortium, a consortium of universities and colleges established for these specific purposes (Moore and Kearsley, 1996, p. 41). Distance educators use television in both one-way and two-way communication confirmations.

iii. Asymmetric computer based delivery system: Computers can also be used to deliver distance education instruction. In the one-way asynchronous computer system, an individual can communicate with the distance education center using a personal computer and a telephone line. Course instruction is stored in a central computer library.

Each student, whether domestic or international, has his/her own account number. Whenever they wish, wherever they are, these students can enter into the main computer library to receive instruction. Instructional packages may include picture, text, audio, and graphics. The students can also receive self-paced tutorial programs from the computer. They do not need to send the hard copy papers of correspondence study because they can forward them by Internet. The distance education centers also can return their evaluations to students by computer mail.

B. Synchronous System

In this system, students and teachers can hear and see each other. Students can ask any question to their teacher and these teachers can answer the question instantly. This system should be supported by e-mail, fax machine, phone calls, and videotapes to increase the interaction between students and teachers. There are two sites in this system:

(1) origination site and

(2) remote site.

Achievement for remote site and origination site students is different from each other because many studies indicate that the origination site students have a high dissatisfaction with this system. To solve this problem, teachers in the distance education classroom should try to develop more interaction between both sites because the successful expansion of distance education is dependent upon the improvement of instructional design to approximate the richness of the interaction that occurs face to face. To increase the interaction, distance educators need to find the best technologies available in their country. In this system, there are several different models used to deliver instruction.

i. Audio conference: Audio teleconference is a live, two way conversation among two or more persons at different locations connected by telephone lines, cable, or satellites requiring special microphone amplifier devices for voice communications (Heinich, Molenda, and Russell, 1993). Distance educators can deliver their instruction to two or more locations almost anywhere in the world. Students can ask questions to their teachers and interact with fellow participants in real time.

Today, some distance education institutions in U.S.A, India, Europe, Japan, China, Africa, and Turkey have been using this system to deliver some of their instruction to their students. With this way, students and teachers can talk with each other but can not see their face each other.

ii. Television conference: Each classroom is equipped with a camera, a microphone, and a television screen. Classrooms are connected by telephone line, cable, or wireless means such as microwave, cellular, or satellite. Distance educators can use this systems to deliver their instruction to two or more international locations. Unlike two-way audio conferences, participants can see and hear each other. Students can talk face to face and ask questions of their partners. These students can receive answers to their questions during the class.

One common delivery method for regional video distribution is the microwave system. In the United States microwave and instructional television fixed services (ITFS) systems are used by universities and school districts to distribute instructional programming to remote sites. These systems operate as interconnected low-powered television stations, sending signals to receiver sites equipped with special antennas. The range of these systems is limited to a radius of 30 to 50 miles, unless retransmitted.

iii. Computer conference: To establish two-way live computer conferences, global distance educators must provide students with a personal computer, a software package such as "CU see me" and a wire or wireless channel to convey their interactions

internationally. In this approach, two or more participant groups with compatible software, microphone, and can see and hear each other on the computer screen. Students can talk face to face during their class. They can also ask questions of their teachers or international partners and receive the answers to their question. During the 1990s, computers assumed a greater role in distance education programs world-wide.Computers can be used to enhance both one-way and two-way video teleconferencing (Nemby, Stepich, Lehman and Russell, 1996, p. 187). The observation of Jones, Kirkup and Kirkwood (1993) is that educators have been using computers as a tool of computer-assisted instruction, and as a communication device in education since the 1960s, although the types of use have expanded and the number of students using them has grown. Increasingly, computers are being used in distance education (Gast, Ounsworth, Lewis, Davey, and Jaeger, 1992, p. 145). Today, computer-aided instruction is common, but another model, using com puters in distance education, is an emerging application. Computer mediated communication can be in real time, as with audio/visual conferencing, or asymmetric, as with e-mail on the Internet. Computers have been linked into networks. Learning networks in universities and colleges, distance education institutions, and professional development and training agencies have been used to deliver formal educational applications, such as credit and noncredit courses and degrees, informal learning, and research activities (Harasim, Hiltz, Teles, and Turoff, 1996, p. 77).

Increasing recognition of the potential of computer-mediated communications computer-supported collaborative work, computer learning environments, and computer-based cognitive tools have encouraged innovative approaches to the design of distance education (Jonassen, Davidson, Collins, Campbell, and Haag, 1995, p. 7).

Today, the integration of computer technology with the telephone network has generated a seemingly endless array of possible communications links, to such an extent that geographical isolation is now a comparatively minor concern for the delivery of

education at a distance (Ely and Minor, 1993, p. 107). Thus, computers can not only restructure the ways of teaching and learning, but also affect the way of communicate with each other. From correspondence, to radio and television, to the computer, the proliferation of communications avenues has helped to make distance education available to more students.

II. Some Examples Around The World

Many examples can be found around the world because some countries have their own distance education system. These dis tance education system are correspondence based model, telecommunication technology based or both system based.

The majority of the world's universities carry out most of their teaching activities from their campus to serve other people who can not go to school because of their money or family problems.

These big universities called "The Mega-Universities" are located in the different part of the world. The definition of a mega-university combines three criteria: distance teaching, higher education, and size (Daniel, 1996, p. 29). All of these mega-universities have their own distance education system. They use different kind of telecommunications technologies to deliver their instruction to it's students.

First one is Anadolu University located in Turkey. Turkish government founded "Open Education Faculty in 1982. This faculty has almost 600,000 students. In addition, Ministry of Education founded "Open High School" in 1992. Second example is computer-mediated distance education project was implemented between the Turkish Open Education Faculty of Anadolu University and selected American universities in 1992.These educational institutions communicated computer to computer using telecommunication interconnected computer systems.

This model is used by distance educators in Turkey and also by those in the USA to deliver instruction to students. After these successful distance education applications, some universities in Turkey has started to establish her own distance education system. One of them is Sakarya University. One distance education example was done between Sakarya University in Turkey and Ohio University in U.S.A. via internet.

During Spring 1998, computer based distance education was implemented at Sakarya University in Turkey. In this project, a graduate course (Educational Technology) was taught via internet by its instructor. This instructor created a graduate class home page on the interest. Then, this instructor had put graduate course's materials on the class' homepage and send an e-mail to graduate students every week.These graduate students responded the questions every week by e-mail. Also, this instructor created a discussion group in the internet. In this discussion group, all of graduate students taken educational technology class had discussed some educational topics via internet during spring quarter-1998.

In China, there is a big distance education university called "The China TV University System". It is only one of three large distance education system in China, the others being the correspondence university system and the self-study/university examination sys tem (Daniel, 1996, p. 166). Today, around 800,000 students enrolled to this university. This university delivers its instruction to students via broadcasting system.

There are some distance education applications in Europe. First, a big distance education university is located in France called "The Centre National d'Ensegnement a Distance". It is the largest distance teaching institution in Europe and a veteran amongst the mega-universities. It uses high technologies such as satellite, visiophone, fax, computer, TV, videotext, radio, fiber-optic and others to teach it's students. This university offers 500 programmes ranging from primary school to postgraduate courses

(Daniel, 1996, p. 169). Second, other country which is Spain also has a distance education university called "Universidad Nacional de Educacion a Distancia". It is an independent university. This university uses broadcasting TV and radio, videoconferencing, videotext, internet, e-mail to deliver the instruction. Third example can be seen in England. There is a big distance education university called "The Open University". This university offers graduate and undergraduate degree or non-degree courses for students. It is an independent university. It has almost 200,000 students in England. In addition, the total enrolment of student out-site from UK is around 20,000 (Daniel, 1996). This university uses high technologies such as television, radio, internet, e-mail, phone, teleconference, computer conferencing, audio and video cassette to deliver it's instruction. This open university impacts other open universities around the world. Some open universities such as Indonesia, South Africa, and others are adopted from this university.

According to Ljutic (1996), the Commonwealth of Learning has been able to offer degree courses in distance learning to future edu cators in South Africa by obtaining the learning packages from the Indira Gandhi National Open University of India. The main goal of this is to increase the level of education of people in South Africa.

Distance education has been applied for more than ten years in Australia. In the past, correspondence system had been used to deliver the instruction. Today, two forms of distance education, audiographics and live interactive television are being used by the educators because of technological developments (Oliver and Reeves 1996). With audiographics, there are two different kind of link between teacher and students. One link connects computers and another provides audio conferencing through telephone communications. Another delivery model is live interactive television. With this system, students and teacher can see each other and ask question at the same time. There is a

face-to-face conversation in this system. Today, distance education is very important to offer education to rural areas in this country.

Another open university is founded by Indian Government called The Indira Gandhi National Open University. This university has almost 300,000 students. Most of these students are planing to have a bachelor degree from this open university. Indian Government is planing to increase the higher educational level of Indian people. This university mostly deliver its instruction to students with broadcasting TV system. Sometimes satellite based conference system is used to teach by this university. According to Daniel (1996), Indonesia has a distance education university called "Universitas Terbuka". Almost 350,000 students enroll to this university. The main goal of this university is to offer higher education because the capacity of formal universities can not support higher education to all high school graduate students. With the use of this university, the level of education of people increases. This university has been using high technology such as telephone conferences, tele-teaching via satellite, e- mail, fiber-optics, and others.

Iran has a big distance education university called "Payame Noor University" because of it's population. The formal universities in Iran can not provide people graduated from high school with higher education because of economical problem. This university has almost 120,000 students. It is run under the rule of Ministry of Culture and Education in Iran (Daniel, 1996). It delivers courses via broadcasting TV and radio. The government is planing to establish a educational TV station supported by satellite and cable.

Other big distance education university called "The Korea National Open University is located in Korea. It was founded in 1972 by government. It is an independent university. The main goal of this university is to provide people with higher education. Today, around 200,000 students enroll to this university to get a

undergraduate degree. This open university uses broadcasting TV and radio stations, videoconferencing, multimedia, internet, satellite and others to deliver it's instruction to students. Today, more than 200 college level television courses are produced by community colleges and universities; public broadcasting stations, among which one of the leaders is Maryland Public Television; and by members of International University Consortium, a consortium of universities and colleges established for this specific purpose (Moore and Kearsley, 1996). They try to use modern technology to deliver their instruction. According to Schrum and Berenfeld (1997), virtual universities established on the internet.

The Western Governors in the United States are forming a consortia to create a Virtual University. Their plan will serve students throughout the western states, confer degrees, share resources and revenues, and many of the policy problems that traditional distance learning encounters have already been addressed. Another Virtual University, named the Vitual Online University, offers, degrees, and resources. They also offer a K-12 school over the Internet, through the use of a Multiple-Object Oriented (MOO) environment. All of these resources can be found by using the search term "Virtual University." In fact, within a few moments of searching it is pos sible to find other virtual universities that list as their primary locations Spain, Amsterdam, England, Ohio, Western Florida, and Africa, to name a few (Schrum and Berenfeld, 1997, p. 157).

Other big distance education project in USA is called "STAR SCHOOLS". It is supported by federal government. The purpose of the Star Schools Program is to encourage improved instruction in mathematics, science, and foreign languages as well as other subjects, such as literacy skills and vocational education, and to serve under served populations, including the disadvantaged, illiterate, limited-English proficient, and individuals with disabilities through the use of telecommunications.Today, many students are taking degree courses via this system.

The other example about internet, The Global Telecommunications University (GTU), a project of the International Telecommunication Union (ITU), and Ohio University's Global Education Project for Masters and Ph.D students all make use of the Internet. These and other technologically based global projects provide educators with the means to reach distant students electronically.

Another example is TEAMS project. According to Lane (1997), TEAMS is a set of math and science courses for grades 2-6 offered via satellite by the Los Angeles County Office of Education. Students join an interactive telecast lesson once a week hosted by a master teacher. Through the lesson, students learn about conducting science experiments and about scientific methods. This project is founded by the US Department of Education's Star Schools Project. TEAMS now reaches 50,000 students nationwide in this project.

According to Chou (1996), there is a distance education application in Taiwan called the Cooperative Remotely Accessible (CORAL) system. It is a network-based computer-assisted learning system that supports cooperative constructive distance learning (Chou, 1996, p. 72). This system is being used at National Chiao Tung University in Northern Taiwan, with 10 faculty and more than 30 graduate students. Students are taking their courses via computer based telecommunication system.

Thailand located in Asia has a open university called "Sukhothai Thammathirat Open University". The total enrollment in degree programs is over 200,000 with an annual intake of 100,000 (Daniel, 1996, p.188). This university uses broadcasting TV and radio system to teach. The main goal of this university is to provide people with higher education.

Athabasca and McGill Universities in Canada have their own distance education system. They are very successful on distance education. These universities offer graduate courses and degrees via distance education system. They use

telecommunication technologies such as television, computer, Internet and other to deliver the instruction to their students.

III. Conclusion

Today, many degrees such as B.A., M.A., M.B.A., P.h.D., et. are available on distance education system. For example, Ohio University offers some degrees in Business. People who live in the out side of U.S.A. can get Masters Degrees in Business School at Ohio University. Another example, some professional development courses are available on line. The International Society for Technology in Education (ISTE) has offered an online professional development course for educators around the world since 1990 (Schrum and Berenfeld, 1997, p. 155). All of these information indicate that the magic of distance education changes the system of our schools from primary through university level and restructure the role of teacher and students.

This book has suggested that distance education has a big potential to change the fundamental nature of normal education to keep developing in the next century. Today, more than 500 universities around the world are offering distance education services. Some universities are currently offering instruction to a total of 150,000 students in USA while Anadolu University in Turkey records the number of students at almost 500,000 students. Other countries like NKS of Norway, the EOU UK and Thailand's STOU are enhancing to 70,000, 120,000, and 212,000. Telecommunications technologies such as radio, television, satellite, videoconferencing, and others are available for distance educators to establish the system of 21st. century's education system. For this reason, educators should begin to show an interest in distance education.

TELECOMMUNICATIONS TECHNOLOGIES IN DISTANCE LEARNING

by Don Flournoy

I. Introduction

Arthur Clarke, the father of space communications, asserts that the problems of communication today are not technological. They are economic and political. "It seems to me," he said in a satellite-based interview at CNN, "we can already do almost anything we want technologically. What is holding us back (in terms of a more equitable information society) is money and political will."(Arthur Clarke, 1995)

Clarke is right. Given financial resources and political will, great strides can be made in applying technologies to the solution of societal problems, including problems in education. Even with little or no money and only modest cooperation or support from governments, many things can still be done to impro ve access to education and enhance the quality of the educational experience. But it helps us to understand what technologies are out there, whether we can afford them or not, for the mere existence of a tool shapes how we think about the possible.

In the toolbox of distance educators today there are many options.These include tools for transmitting educational programming to al most any point on the globe or for distributing information only within a school district or building.

Educators now have the capability to transmit from a single site to many receivers, or only from point to point, as in one desktop to another. Such transmissions can be one-way or they can be interactive. They can be synchronous, that is, they can be live, direct and in real time or asynchronous, to be responded to later.

They can be symmet rical, with an equal volume of voice, video or data information going both ways, or asymmetrical, in which a greater volume of information travels in one direction and a smaller volume travels in the other.

Teaching at a distance can be instructor-controlled or learner controlled, or a combination of the two. Educational materials can be pre-produced, packaged for high-impact with carefully considered educational/entertainment value, or generated on-the-spot, as with Web searches and creative problem solving. Thus, the cost of preparing educational materials and the lease or purchase of the channels by which they will be distributed can be quite expensive, or quite modest. How does today's educator know which technologies should be included in the distance teaching toolbox? How does one know which are the right tools for the particular educational need? What follows is a brief examination of a wide range of telecommunications technolo gies with special attention given to those most likely to impact educational access.

II. Media For Communications

Which technologies of telecommunication are best suited to distance teaching? What do these technologies have to offer? The tech nologies we first think of are those we have traditionally used for this purpose: radio and television broadcasting, satellites, cable television, computer communications and the Internet. We also think about the portable media such as tape and disc. But, what we now realize is that all these technologies are rapidly evolving. Not only are their capabi lities undergoing radical transformation, everything in the toolbox is becoming increasingly interconnected, interoperable and interdepen dent, the result of digitization. Technologies of telecommunication today are becoming more po werful partners for distance teaching not just because education demands it but because these same technologies are demanded by the consumer market in general, which will insure that they are afford able. The future promises that these technologies will be more acces sible to all persons, whether at home, school, work or on the road, and they will be more robust, more interactive, more userñfriendly, more responsive to individual interest and need.

Broadcasting Technologies

Radio/Television: Open broadcast technologies have long been used to deliver instructional programming to schools and colleges located within reach of radio and television stations. These same over-the-air technologies have also been used to reach learners in homes and businesses.

For many years, AM/FM/shortwave radio and VHF/UHF TV stations have successfully addressed the educational needs of home schooled pupils as well as those in public and private schools. Community development programming has also been directed at the general public to teach them about their heritage, building pride in local history and culture, encouraging them to greater tolerance, as in appreciation of the needs of the handicapped, or to give practical information such as how to purify water.

Public broadcast stations such as the BBC in the United Kingdom, the NHK in Japan and the CBC in Canada, have broadly defined educational and cultural missions, often to include the mission of providing formal instruction directed at the schools. This is a common function of broadcasting the world over whe re stations have helped local organizations reach their audiences with public service messages, helped high schools to expand their curricula and helped universities to target underserved segments of the community.

Although the oneñway transmission of information from station to individual receiver provides no easy way for the listening and view ing audience to talk back, this lack of a feedback channel is not a li mitation for many educational applications. The broadcast media, whether radio or television, are uniquely suited to capture attention so that information can be provided. Gifted teachers and content experts with specialized knowledge can be made available to a mass audience. Classroom teachers, community leaders and parents don't have to be knowledgeable and expert in all areas.

DAB/DARS: A new form of radio, known as digital audio broadcasting or digital audio radio service, will be available in many parts of the world by 1999.

Whereas conventional AM, FM and shortwave radio signals have been delivered from terrestrial transmitters using analog waves, nextøİ □□ İgeneration radio will be digital and much of it will be picked up from the satellite. In Europe, terrestial DAB stations are already transmitting highñquality digitally-encoded audio signals to both fixed and mobile radio receivers. The potential of digitally transmitted radio will be quickly seen by educators.

With digitization, radio provides a very high quality audio signal at low cost to both sender and receiver. And one of the unique capa bilities of the satellite is that it can reach widely dispersed popula tions, as with indigenous language programming for cultural groups located outside their home country.

Beginning in 1998, WorldSpace Inc., a Washington D.C.-based satellite radio company, initiated an internationally-oriented DAB service which will soon be capable of reaching as many as 80 percent of the people on Earth, focusing principally on developing nations. Three WorldSpace satellites will transmit 100 or more channels of music, news, entertainment and educational programming from multiple providers. (Castel, 1997, p. 14)

The company estimates that 180 million people will buy the specially designed digital handñheld radios at $100 apiece within the first 10 years of service. (Saunders, 1996, p. 26) Radio receivers will operate in the L-band (1467-1492 MHz), but will also be equipped for tuning standard AM, FM and shortwave radio reception. Digital fax, e-mail and messaging services will also be available through these receivers.

DTV/DVB: As in audio, major changes are about to occur in television broadcasting. The European version of digital television is called DVB which shares the same objective as the North American DTV: to provide better sound with higher-

resolution pictures on a wider screen. But DTV/DVB promises much more. As a data distribution system in which audio and video signals are treated as bitstreams, the new digital television opens the door to entirely new approaches to management of content, whether entertainment, information or education. Since the world of computing and personal computers are bridged to broadcasting and TV sets, TV transmitters can be used to relay multiple streams of information at varying data rates, setting the stage for a new age of transactional Internet and on-demand video, audio and data services. (Spring, 1998, p. D1)

There are several ways in which this can be done in a broadcast format. One is the upgrading of an old technology, teletext, in a digital format. WavePhore Inc. has been awarded a patent on a data broad casting technology which inserts and transmits high-speed digital data over an analog television signal using the vertical blanking interval. The VBI service takes advantage of the electronic space between the visible pictures to send data to home computers equipped with TV tuners. In the United States, the FCC permits broadcasters to utilize the VBI technology to transmit ancillary data to home or businessñbased personal computers or to provide enhanced services along with their broadcast signals (TV Technology, 1997, p. 6). In the United States, the Public Broadcast Service has inaugurated a National Datacast Service, called The WaveTop Channel, to use the transmitters of 265 PBS affiliated stations to reach more than 99 percent of TV households (TR Wireless News, 1997, p.4). One advan tage of this approach is that the data doesn't travel over the Internet, therefore providing a more secure environment for children (Taylor, 1997, p. 27) .

IVDS: The Interactive Video and Data Service is a new return path for broadcast TV programming, approved for FCC spectrum auction in 1994. IVDS receiver/transmitters go into homes, schools and businesses in the form of setñtop boxes. Each box hosts a wireless radioñfrequency modem and remote control through

which customers can interact with the transmitting station. Cell-tower receivers located throughout the broadcast area gather signals from interactive video users and relay them directly to the station or via satellite to a central collection point.

The IVDS technology is seen as a way to give added value to the TV broadcasts of local stations. With the prospect of a viable con sumer-to station return path in the local market, IVDS will be an option under consideration as the newly installed DTV/DVB television stations look for new ways to increase interactivity and exchanges among their digitally-equipped audiences.

III. Geo/Leo Satellite

Satellites are already well-established distance education tech nologies Communications satellites located in geosynchronous orbits 36, 000 km above ther equator are serving as wide coverage receivers and retransmitters for a variety of educational applications.

No technology can match the wide geographic coverage of the satellite footprint. Satellite signals can be anywhere or everywhere: local, regional, or global. They can be point-to-point, as with delivery of sales training from corporate headquarters to distant offices, or point-to-multipoint, as with the broadcast of lessons fom a teacher to multiple home-schooled pupils. With modern satellite technologies, it matters not whether those addressable locations are in homes or hos pitals, in urban areas or rural, on one continent or several. With today's satellite systems users can quickly be brought on-line.

Direct-to-home (DTH) systems can now be installed in a single day and they can be quickly disconnected and moved from one location to another. While truly interactive systems via satellite are not yet a common home product, rapid connection to broadband media services is already a selling point for educational applications in schools and businesses. Education/Training Networks: Several countries including China, Indonesia,

Japan and Turkey have established open high-school and university systems which employ satellite. The Open High School ini tiated in 1993 by the Turkish Ministries of Education and Radio/ Tele vision offers both degree and non-degree programs throughout Western Europe. Although satellite technologies have been used, other distance education delivery systems such as broadcast TV, videocassette and printed materials have been the primary media used. (Demiray et al., 1997, p. 5; İşman, 1997)

Japan's University of the Air was begun in 1985 to develop an effective collegeñlevel learning system which could be made available to the greatest number of people in Japan. In the beginning, the UOA used local UHF-TV and FMñradio for distribution of course materials, but in 1995 the Ministry of Posts and Telecommunications recom mended that the Open University program move to a new high-powered satellite shared by Japan's public broadcast station, NHK. This move would interconnect about 50 universities in Japan. (Demiray, 1997, p. 12-15) The Star Schools program in the USA was funded at $100 millionø from 1988-1992 to ensure more equitable access to education. This federal project, administered by individual states and regions, offered a variety of educational opportunities including course instruction in the sciences, advanced mathematics, foreign languages and economics for schools too remote or too poor to provide these subjects. (Krebs, 1997, p. 56-63;)

NewsRoom is a free educational service provided by the inter national news provider, CNN, making use of the Turner network of satellites to broadcast specially edited and anchored news segments to American public and private schools. The daily news feeds, which are made available without commercial advertisements, are transmitted to schoolñbased antennas in the early morning hours, taped on site and made available for social studies and other classes during the day.

The National Technological University (NTU), based in Fort Collins, Colorado, is a private, accredited, non-profit institution of higher education which offers instruction

exclusively via satellite. NTU hosts 13 Master of Science degree programs as well as non-credit short courses, to meet the advanced educational needs of busy, highly mobile engineers, scientists and technical managers.These telecourses are transmitted to onñsite locations of such high-profile companies as General Electric, Intel, Motorola, Hewlett-Packard and Texas Instruments (Manasco, 1996, p. 30) . The NTU network uses MPEG2 compressed-video transmission and addressable receiving equipment which converts analog video to a digitally coded data stream and modulates it for satellite delivery. In 1997, NTU began transmissions aimed at subscribers in Pacific Rim countries. Some 1, 350 working professionals and technical managers were registered in the degree programs; its non-credit short courses exceeded 100,000 students. (Wegener, 1997, p. 102)

Ford Motor Company has set up a private satellite network, FORDSTAR, for communicating with its manufacturing facilities and automobile dealerships. Training of employees is a major function of the network. One-way broadcasts of digitally compressed video information are sent to multiple sites with a return data feed from the students using the One Touch response keyboard, by which both audio and data are relayed back to the instructor in real time. The One Touch technology allows students to register a call asking questions of the instructor and provides the means by which the instructor can collect answers to true/false or multiple choice questions. (Careless,1996, p.26-7) VSAT/TSAT: Lack of interactivity has been a historic limitation for satellite-delivered education and training. Numerous spectaculars have been staged in which two-way point-to-point or point-to-multipoint satellite events, conferences and meetings have been held involving more than one distant site. Except for those special occasions when the high costs can be justified, such opportunities have been too expensive and too technically complicated for on-going operations. With the rapid adoption of the very

small aperture terminals (VSATs) in the data distribution business, some solutions to the interactivity constraints of satellite have begun to appear.

VSATs are small (2 meter or less), inexpensive satellite dishes with electronics and software for providing voice, facsimile, and data exchanges among distant points via satellites operating from geosyn chronous orbit. VSATs are principally used by retail chains for credit card verification, pointñofñsale information, and inventory mana gement, such as just-in-time restocking. But they are also used by banks, travel agencies and government bureaus to replace dedicated terrestrial telephone lines with faster, more flexible and more econo mical means of communication. VSAT transactions, such as checking for airline availability, can occur almost instantaneously, exchanging digital data in real time or downloading data to onñsite computers for later use (Bandy, 1996, p. 276) .A typical VSAT communications channel handles 64 Kbps of digital information, which is enough for transmitting text with some graphics capabilities. Higherñspeed VSATs that support the T1 data rate of 1.544 Mbps, sufficient for videoconferencing, are called TSATS. These channels can be leased from VSAT pro viders when the higher data rates are needed (Katz,1997, p. 115). Because of their ability to provide voice, data and now video communication of multiple types, VSATS are being used to im prove the economic situation of rural areas. Not only do VSAT terminals allowø businesses to operate in areas where terrestriat communications are underdeveloped or non-existent, there are instances when government and non-government organizations, such as remote hospitals and schools, can take good advantage of the presence of the satellite overhead. One of those applications is telephony; another is inter connection to the Internet.

Internet via Satellite: From the perspective of the home, satellite services have consisted largely of one-way broadcasts of entertainment and informational programming received on big TVRO receive-only backyard dishes to be viewed on home TV sets. This model is about to undergo some changes. Already, it is possible for home,

school and small business users in most of the developed nations of the world to subscribe to high-capacity Internet delivered via satellite, with upstream communications travelling by means of telephone modems through local Internet Service Providers. By the beginning of the Millennium, more than one geosynchronous (GEO) and low Earth (LEO) orbiting satellite service provider will be marketing Internet services to residential, school and business users which byñpass the local terrestrial networks.

As with VSAT systems, installation of home subscriber equip ment -the dish, the receiver and computer interface- can be accomp lished in a day or two. With the mass marketing and ready availability of digital DBS services, the costs are coming within reach of users who have a need to download Internet data at faster speeds. Because of its availability, digital satellite now has the advantage over cable modems and digitized phone lines.

Hughes Network Systems, a satellite manufacturer who entered the direct-to-home digital broadcast business with a product called DirecTV in 1994, markets a related home service called DirecPC. Hughes DirecPC takes advantage of the fact that Internet corridors have become congested, and the public perceives the need for a faster channel for downloading large files, especially from multi media-enhanced web sites.The user searches for information via standard modems and telephone lines but any requested information is forwarded to the Hughes server, whe re it is uplinked to the satellite and relayed to the user at 400 Kbps, 15 times the speed of a 28.8 Kbps modem.

David Basham is director of the Navajo Learning Network, a plan to give Internet access to members of the Navajo Nation, a 26,000 square mile Indian reservation within the Western states of Arizona, New Mexico and Utah. Half of households do not have telephones and most of the dialİ □□ İup lines that are available to schools can only handle low speeds, around 28 Kbps. With help from the National Science Foundation and NASA, Basham is installing the DirecPC Network Edition, a

satelliteñbased Internet access product for networked schools and businesses. Basham is putting into place a Navajo Nationñwide network which will enable dial-up connections to the Internet from homes, schools and colleges campuses in remote areas that previously had limited or no access with return path delivery directly from the satellite (T.H.E. Journal, 1998, p. 60)

DirecPC signals are oneñway only. There are constraints to this hybrid satellite/twisted pair telephone line configuration. Customers can order up material from heavily-loaded Web sites and great quantities of text, graphic, audio and video information can be quickly delivered. But were users to wish to send large files, the outpath is likely to be the same slow telephone lines that forced them to the satellite option in the first place. Direct return to the satellite of home or school-originated transmissions is possible but, for the moment, not yet a product for mass consumer use.

Multimedia via Satellite: More than one low earth (LEO) orbiting satellite system is approaching launch. These constellations of interconnected satellites will orbit 500 or so miles above earth mostly providing telephone coverage for business travellers and to those with no access to telephone. Included are Iridium, a 66-satellite system sponsored by Motorola and partners, to begin offering international service in 1998, and Globalstar, a 48-satellite system sponsored by Space Systems Loral and partners, to start up in 1999.

Teledesic, a 288-satellite constellation sponsored by media entre preneurs Bill Gates and Craig McCaw, is scheduled to be operational in 2001 providing on-demand Internet access, videoconferencing and inter active multimedia to both fixed and mobile receivers literally anywhere in the world. Satellite telecommunications can serve areas not yet reached by broadband terrestrial providers or which cannot be coveredø economically using traditional terrestrial infrastructures. These near-Earth orbiting satellite systems, such as Teledesic, are especially suited to providing bi-directional asymmetric services as they offer a very short round trip propagation time, enabling them

to more easily share common communication protocols, applications and standards with terrestrial networks.

Looking to the LEO multimedia satellite services under develop ment, it is assumed that anywhere connectivity, providing on-demand delivery, will be seen as an asset for the distance educator.

IV. Terrestrial Microwave

Satellites and terrestrial wireless technologies share many of the same microwave (1 Ghz or higher) frequency bands. The earliest microwave applications were in point to point communications in which bundled telephone messages were relayed on microwave towers bet ween switching offices. Those same towers were used to relay the video signals of networks to affiliated stations around the country. Now, microwave frequencies are used to connect schools and other community sites for purposes of distance education.

Since 1983, Ohio University has used 14 microwave signal towers to connect its main campus and five regional campuses. The Ohio Higher Education Microwave Services (HEMS) network is an interactive system providing full-motion video and audio exchanges for instruction, contin uing education and staff development and increased access to univer sity resources by business and community members.

As in the Ohio case, operations at both sending and receiving sites of the point to point microwave networks can be controlled by the instructor. Studio classrooms, equipped with cameras, microphones, videotape players and television monitors, can be designed so that it is not necessary for instructors to make major changes in their teaching styles to make maximum use of this distance teaching technology. Even though located in classrooms distant from each other, teachers and students can easily collaborate. Presentations can originate from either site. Using large screen monitors,

group discussions can often lead to members forgetting that they are not in the same room. In addition to providing two-way video and audio, the microwave linkages can carry telephony and computer data traffic as well.

MMDS/MVDS: In the 1970s, a block of microwave (2.5ñ2.7 Ghz) frequencies were licensed to inaugurate wireless cable television systems. Called MMDS (Multichannel Multipoint Distribution Service), microwave signals transmitted omni-directio-nally were used to broadcast subscription-based video and other programming to homes and businesses within a 30 to 50 km range. A separate band of frequencies was licensed to school boards, universities, hospitals and other non-profit institutions in a related service called Instructional Television Fixed Service (ITFS). When many of these ITFS channels went under utilized in the U.S., the Government arranged to have many of them made available to the commercial sector to provide local compe tition to the CATV operators.

With the deregulation of the U.S. telephone companies, Bell Atlantic, NYNEX, Pacific Telesis and others invested heavily in MMDS franchises as a way to get quickly up and running as "full service pro viders" in the video and interactive data business. By 1997, however, a major telco programming venture (Tele-TV) had failed and several of its underwriters slowed the buildout of MMDS until a more suitable strategy for approaching the broadband home market was clearer. MMDS has been slow to find its place in the crowded broadcast, DBS and cable markets of the U.S.

Even so, MMDS is a telecommunications technology getting good play in cities such as Beijing, Mexico City, Nairobi, Riga and Moscow. These markets have less competition and it has been found quicker and less expensive to bring wireless cable systems onñline when system startup is little more than an omniñdirectional transmitter installed on a high tower in line of sight of the small receiving antennas positioned on subscriber balconies or rooftop.

With implementation of digital signal processing and transmis sion, commercial MMDS operators are now in a position to offer local customers multiple channels of broadband media, including an econo mical wireless return channel capable of providing homes, schools and local businessesø broadband access to the Internet.

An upgraded European version of these "wireless cable" services is called multipoint video distribution system (MVDS). MVDS uses the higher 42-43 GHz frequency ranges and has a shorter signal range of 5 to 10 Km as opposed to 30 to 50 Km for MMDS. It offers multiple channels of high-quality audio, video and data, and can target designa ted population areas using directional transmitters and relays. Thus, it is a technology educators will wish to watch for the future.

LMDS/RLL: MMDS/MVDS are not the only broadband wireless options. There is another, colloquially called "cellular TV," approved in 1997 as a local multipoint distribution (LMDS) service. It is designed to operate in the upper microwave (28 and 31GHz) frequencies and will be available for interactive broadband service using interconnected cells in the "local loop." Each transmitter serves an area of 1 to 4 km in diameter, similar to that of cellular radio and personal communications networks (PCS). This is a digital service.

LMDS has been allocated a huge block of spectrum sufficient to provide broadband telephone, video and data services. With its two-way transceiver capabilities, it is a promising medium for Internet access, videoconferencing and PPV cable television. A Pioneer Preference license was granted by the FCC to CellularVision of New York. According to reviews, the digital service performs admirably.

Another wireless option, Radio in the Local Loop (RLL), is a communications technology currently being tested in the U.S. as a broad band alternative to wireline networks. A small number of companies are experimenting with the 38 GHz RLL frequencies for a variety of local communications services. Among the applications of

this techno logy, sometimes called Wireless Fiber, are switched telecoms services for small and medium sized businesses and school systems. Some RLL companies hope to become single source local and long distance telephone and Internet providers as part of the nationwide deployment of facilitiesİ□□ İbased competitive local exchange (CLEC) services in the United States.

Not only will the Radio in the Local Loop carriers be looking to serveø as local service integrators for home, school and business customers, they hope to configure the RLL frequencies for distribution of telecom signals within customer premises.

V. Wireline Technologies

Telephone: Every urban home and business in the developed world has access to a telephone. Elsewhere, teledensities are rapidly growing. Telephone is one of the most successful telecommunications technolo gies of all time. It is comparatively cheap, convenient, useful in a variety of practical applications and widely available.

Even before the Internet, telephone lines were probably the single most widely used of all the telecommunications channels by educators. Ancillary devices, such as answering and fax machines, voice and eñmail, and audioconferencing units, are now commonly used in parent-teacher-pupil communications. And because of their ready availability and reasonable cost, telephones are seen as a natural adjunct to broadcast, satellite, cable and other distance education delivery systems.

ISDN: The historic limitation of the telephone has been the modest information carrying capacity of its lines. On twisted pairs, or loops, of copper, the telephone companies managed to carry acceptable voice communications but struggled to do more. In refinements of the cus tomer loop the telcos used techniques for multiplexing its lines back to the central office, but the final drop into the home remained the copper pair.

Analog telephony was later augmented by digital signals, ushering in the digital subscriber line. An early version of DSL technology was Integrated Services Digital Network, a switched high-speed (64 Kbps) data service.

ISDN is now an international telecommunications standard for transmitting voice, video and data over digital lines. (Technology Forecast, 1997, p. 96) ISDN, with transmission rates reaching as high as 1.5 Mbps in North America and 2 Mbps in Europe, is currently being used for applications such as Internet access and videoconferencing.

ISDN is not everywhere available, however, and the costs are comparatively high.With the discovery of faster DSL technologies in the late 1980's, by aø research team led by Joseph Lechleider at Bell Communications Research, the copper outside plant could be transformed into a multimegabit access network. (Flournoy ard Scott, 1998)

ADSL/HDSL: Asymmetrical Digital Subscriber Line (ADSL) and High-speed Digital Subscriber Line (HDSL) are related technologies that permit high bit-rate transmissions over twisted-pair copper wiring. ADSL will permit the customer to transmit to the telephone company at rates of 640 Kbps and the telephone company to transmit to the customer at rates of 1.544 Mbps (T1) or higher. HDSL permits two way symmetric transmissions over two copper pairs for applications such as videoconferencing at T1 rates or higher. (Flournoy ard Scott, 1998)

These DSL technologies are now becoming available for use by local access carriers wishing to enter the broadband access market, which means that telcos are now in a better position to compete with CATV, LMDS wireless and other operators for some of the multimedia traffic that will center around homes, schools and businesses.

Fiber Optics: As the analog telephone networks and their companion digital subscriber lines have improved in performance, other wireline technologies are being

extended in the direction of homes, schools and businesses. The most powerful of the terrestrial tools for transporting infor mation is fiber optics. An optical fiber is a hair-thin strand of flexible glass capable of relaying information in the form of light waves. By converting electrical signals to pulses of laser light and replacing copper wires with glass, literally thousands of channels of voice, video and data can be relayed on a single fiber bundle. By way of illustration, were a 12-volume encyclopedia encoded letter by letter, image by image, into laser pulses and transmitted along an optical cable of 2 GHz capacity, the information would arrive at its destination in approxi mately one second. Were the same quantity of information to be transmitted via a 3 KHz telephone line, the waitñtime would be nine hours.

Because of its unparalleled bandwidth and clean signal, running fiber directly into homes and schools is considered by many an idealø solution. But the splitting off of individual fiber lines carries such a big price tag that no one gives it serious consideration. Less expensive and more practical access networks can be built by extending fiber from the telephone central office to an intermediate point, called an optical network unit (ONU), using the existing copper path for the remaining distance. The portion of the network between the ONU and the central office is often referred to as the digital loop carrier (DLC). When the ONU serves a large number of homes, the access topology is fiber to the neighborhood (FTTN). When the ONU serves a smaller number of homes, it is considered to be fiber to the curb (FTTC) (Flournoy ard Scott, 1998) . All of these are different configurations for increasing the information carrying capacity and reducing the costs of telecommunications.

Internet: One of the reasons for the accelerated pace of DSL and fiber installations has to do with the Internet. Not only are the numbers of persons making use of the Internet growing, but the types of uses are more demanding of the available telecommunications channels. The number of Internet users is said to have doubled each

year from 1986 until 1996. Predictions about "the Internet of the future" reveal many expecting to see an Internet which will permit robust searching and downloading of high resolution databases, collaborative multimedia production and distribution, 3D holographic teleconferencing and distance learning, all of which require more bandwith.

The Internet is a great gift for learners. The Internet is a net work of information networks, estimated 50,000 and growing, all interconnected in a way that globally distributed databases and other resources are onñcall to Individual subscribers no matter where they are. With the introduction of the World Wide Web, in which vast amounts of information are linked, and the development of tools to access and browse the Web, learners can go out and electronically look for information.

Ohio, Duke and Princeton Universities have launched MBA Without Boundaries programs based on the internet. Some 300 colleges and universities in North America, according to Newsweek magazine, now offer virtual degrees, which is Newsweek's descriptor for degrees offered at a distance electronically. Collaborative software which gives students and faculty access to each other, electronic access to learning materials,ø eñmail and the World Wide Web are all components of the two year graduate program at Ohio University.

In President Bill Clinton's 1997 State of the Union address to the U.S. Congress, he said, "To prepare America for the 21st Century, we must harness the powerful forces of science and technology to benefit all Americans . . .(and) we must build the second generation of the Internet". The Internet II project is a collaboration among universities, federal agencies and businesses to augment the Internet for research and education. As of 1998, almost 100 American colleges and universities had signed on to participate in Internet II, a great leap forward for high capacity distance education exchanges (Markulowich, 1997, p. 29) .

The long-distance carrier AT&T has initiated an Internet telephony service, an IP-based (Internet protocol) phone-to-pho ne voice service that weds conventional telephone services to the Internet. As an extension of this initiative, AT&T has introduced a "voice chat" offering which permits on-line PC chatters to connect by phone for voice conferencing. At the same time, chatters can share Web surfing among disperse participants. By merging the established phone network with the IP networks, multiparty communications is made much simpler. (Trager, 1998, p. 14)

CATV: The cable companies have decided they are in a good position to compete with the telephone companies for the honor of owning the most important wire entering the home. They have a much broader channel already in place and would like to do more with it than deliver TV programs. With digitization and a favorable regulatory environment, cable operators are now looking to reconfigure their coaxial lines and add fiber to the neighborhood so they can become "full service providers" offering not only interactive TV services, but Internet and telephony.

This has not been an easy goal to achieve, however. The key to the new interactive cable services is a high-speed digital modem, or setñtop box, which can manage digitally compressed program delivery, video on demand, higher data access speeds and Internet Protocol (IP) telephony. Cable personnel lack experience in the world of data communications or with telephone, which are more exacting than video. Also, laying new cable and investing in and installing a new genration of setñtop boxes forø every customer in the system is an expensive proposition. Given an industry-wide lack of assurance that home-owners really want all these new services and are willing to pay additional fees to have them, cable operators are on-again off-again in their system conversions.

A number of cable channels are targeting education-oriented subscribers. Mind Extension University (MEU), a cable channel based in Englewood, Colorado, is doing

for education what ho me shopping has done for the retail industry. MEU, which began cablecasting in 1987, reaches some 23 million homes and is carried by 767 cable systems. MEU also sends videotaped courses to people without cable access. Students can take interactive high school courses, complete baccala ureate degrees, or even earn master's degrees by watching cablecast or videotaped courses from Colorado State University. In 1993, more than 36, 000 people got academic credit for courses taken through MEU (Piirto, 1993, p. 6)

Discovery Channel, CNNfn and others have active Webñsite ser vices which take a television approach to Web content offering onñline courses, filling in background on news stories and providing all sorts of information thought to enhance their TV programming.

VI. Computer Communications

E-Mail: The convergence of computers and telecommunications has stimulated entirely new forms of student/teacher relationships. The advent of programmed learning enabled students to develop mastery over educational material sitting in front of computer workstations following lessons prepared for them. E-mail allows students to log onto computer networks at their convenience to access lectures, read assignments, deliver completed homework or to interact with teachers and fellow students. These can be selective interactions when needed from either side. For students off-campus, the technique provides a way for them to particpate in campus activities, including group projects, while carrying a full time job or attending to family responsibilities.

One of the largest private universities in the United States is a virtual university. The University of Phoenix enrolls some 31,000 students. This university is located in Phoenix, Arizona and on sevenø satellite campuses, including one in Puerto Rico, but classes are accessed on-line, thus students are less constrained by time, place or distance.

The majority of students are employed concurrent with enrollment. (Sasson, 1997, p. 13) According to John Stinson, former Ohio University dean and architect of the University's MBA Without Barriers degree prog ram, "The movement to dispersed learning using information technology has significant implications for libraries. It doesn't mean that libraries will become less important, rather they will change in form and function. The library will no longer be a place; it will be a process. Students will need to perform research, collect data, read reports, but in the main they will not travel physically to a library to perform these functions. Rather they will travel electronically. This means that there is still a need to collect information, to catalog it, and to develop efficient means for students and others to access information. The information will be stored in digital form, however, and accessed using information technology (Stinson, 1997) .

Computer Conferencing: With the addition of audio and video to computer communications, conferencing no longer need consist only of asynchronous text exchanges. Internet-delivered conferences can be live with pictures and sound, though not always with full-motion video and not the clearest of audio.

Such meetings can originate from the desktop or from more elaborately-equipped rooms linking one instructor to one student or a group of instructors or a group of students. (Communications Industries,1998,p. 27) ome say computer-based videoconferencing, whether from home, school or business, will become as common as use of the fax machine (Communications News, 1997, p. 20) .

Electronics manufacturer Sony has developed a collaborative workgroup system which has all the basic elements of faceñtoñface workgroup meetings including highñquality videoconferencing, data sharing, fullñmotion video and audio with monitor. Such systems are designed to operate over the faster telecommunications networks, such as the ISDN, ADSL, Ethernet or fiber lines being installed in corporate intranets. (VCommunications Industries Repore, 1998, p. 27)

Data Storage and Retrieval: As telecommunication channels get wider, each accommodating faster and faster data transport speeds, storage andretrieval technologies also have to race to keep up. Computer performance is to some degree determined by how long it takes to access memory. So, we can improve microprocessor speed and channel through put all we want, but unless memory capacity and speed is able to keep pace, the whole system slows down (Steinberg, 1996, p. 72) .

The problem is one of finding cheap and convenient warehouses for the data we create and getting easy access to that data when we need it. Videotape is still the most costñeffective medium for quality video and audio storage. Now that we are in the digital era, the new tape formats are also digital. But videotape is a linear medium and access, in other than a linear form, is slow. CD-ROM, on the other hand, is a laser-read random-access medium that viewers can use to either view materials linearly, or skip quickly to new topics of interest without the wait of winding forward or back.

CD-ROM is an inexpensive but high-capacity disc, in appearance similar to the CD audio disc, used to store text, data and other digitized information. It is an optical, not magnetic, storage medium with huge capacity, up to 700 Mb of data equivalent to 300,000 pages of text. The forerunner of interactive multimedia, the CD-ROM enabled the viewer to be more of a participant.

Digital Versatile Disc (DVD), sometimes called Digital Video Disc, is an even higher capacity storage medium, holding up to 17 Gb of digital data on a single side. Although it is being promoted as a new distribution medium for movies, it will also have educational uses. DVD, as a result of its capacity, will be able to provide multiple lan guage tracks along with its video programs.

Pre-recorded programs will play linearly on DVD-ROM equipped computers or on standñalone players, or can be accessed selectively.

To enhance correspondence study, CD-ROMs have been used to supplement the text materials of registered students. An example is the CD-ROM produced to accompany the Sign Language course for parents and teachers of deaf children. Signing, the making of hand signs to form words, can be shown in full motion video clips, paused and and repeated effortlessly over and over again until the skills are learned. CD-ROMs are used for many educational and business applications, for games, audio/video augmented encyclopedias and for photographic slide storage, retrieval and display.

The International Communications Industries Association (ICIA) sponsors an on-line service. One of its member services is a distance learning initiative which integrates use of the Internet and CD-ROM thus combining graphics and video with text-based quizzes and self administering tests. The ICIA expects that 3,000 members will complete its on-line training leading to professional certification in 1998. All this training is completed in front of CD-ROM and Internet-capable computers at home or in the office. The Association calculates that its on-line training is $4000 cheaper than on-site training, due to the savings of time, travel and hotel costs. (Fuchs, 1997, p. 3)

The retailer JC Penny concluded in 1995 that sending its mana gers images on CD-ROM was the more cost-effective approach, given rising satellite transmission costs. (Carelless, 1996, p. 27) This is only one of many exam ples in which portable storage media, such as tape or disc, are the simpler and more economical solution to distance information delivery

VII. Utilities

It may be surprising to many to learn that utility companies are entering the telecommunications business. The U.S. Federal Communica tions Commission in April 1996 announced that it had granted a public utility freedom to enter the telecommunications market. The specific request came from a Dallas, Texas-based

company to partner with cable companies. Its plans were to provide utility communications and demandñside management services to its affiliated electric utility companies and their customers. But it expressed intention to enter the market for cable television, telephone service, security systems and "future services" such as home shopping" (Pottinger, 1996, p. 53) In June 1996, American Electric Power (AEP) announced that it would invest in Interactive Multimedia Network fiber optic projects to be built in two cities in Ohio reaching almost 100,000 residents. The network would deliver cable TV, local and long-distance phone services and high-speed data transmission. (Communications Industries Report, 1996, p. 50)

But what is more surprising is the December 1997 announcement of U.S.ñowned electricity company Norweb, partnered with the Canadian commmunications giant Nortel, that they had uncovered a way to chan nel phone services along electricity cables. Until now, the drawback to delivering telecom services on the power grid had been the interference created by electricity. In solving this problem, Nortel said that it now had the ability to pass data at very high speeds down standard power lines.

The result of the Nortel breakthrough led to a test of the techno logy with a school in Manchester, UK. Twelve personal computers were connected to the Internet by way of the power line, all operating concur rently from just one connection, from which they obtained continuous access at speeds of up to 1 Mps. Managing Director of Norweb Communi cations, Mark Ballett, was quoted as saying, "This is the first of many schools we expect to be connected to the Internet using powerline connections.

VIII. HybridSystems

In the educators' toolbox are many options for improving student access to learning and for enhancing the quality of the educational experience. No one solution serves all, so choices must be made among those that are available, most suitable and

affordable. The trend is toward adoption of hybrid technology systems which incorporate more than one telecommunications medium to maximize impact, inprove efficiency and reduce cost.

Many current examples point to combina tions of broadcast, cable, satellite, computer and storage technologies being integrated into a single system. Of all the technologies under use today, the Internet is proving to be the most promising for education. One reason is its ability to successfully partner with other media.

THE WINDS OF CHANGE IN OPEN EDUCATION FACULTY (OEF)-TURKEY

by Murat Barkan

I. Introduction

It is not being discussed anymore that communication gives a higher speed to the alteration processes that follow their courses. This case leads all the institutions that are to be in conformity with these changes to benefit from the communication which brings some problems itself. When this institution is a university known as societies' brain, the need of conformity is more urgent.

It is interesting enough that even if content, base and form of the universities keep up with the changes, the universities are rigid institutions for changes. However, an institution, which is supposed to go on with the objective principles of rationalism, should be in need of changes and a pioneer for the other institutions.

English Open University (EOU) is one of those academic institutions which has been successful in breaking this obstinacy that can be named as scientific conservatism. The reason of EOU's having such a significance is both for the way of servicing and the students environment's overseas expension. That's way the data, gathered by the studies on EOU and evaluations based on these data make it possible to make international generalisations.

This article aims to evaluate seven year application results of the process of change and restructuring of which aim, policies and strategies were marked in 1990 and determined by EOU's academic and managerial units.

The author had the chance of being in EOU for a study supported by The British Council when the change and restructuring formations were decided and studies started. The author repeated his observations after seven years with the same institutions support. The results are supporting that Anadolu University Open Education Faculty

(OEF), and the author is one of its members, should apply similiar kind radical and extensive restructuring project.

This change will include the vision of the faculty related with the functions first, then it will incorparate the mision which can be in need of redefinition and from this point restructuring of the service will be included with the reformation of the organization structure and so forth.

II. First Breeze of "Winds of Change"

A. Why Question The Existing Structure?

1990's are the beginning of a period which has had radical functional and structural changes in EOU. These changes which were discussed formaly started with the questioning of all the society's institutions with regard to productiveness, effectiveness, attractiveness and quality criterions. That's why when monetary resources were limited with different reasons especially in public sector and country's economic situation was getting worse to a bigger extend, the expectations of the society didn't remain stagnant, on the contrary they have improved faster with a number of variations (Barkan,1996, p. 237-259). That has required getting the new and greater resources or, creation of them if they aren't available. Meanwhile, it is understood that it is impossible for the economy to carry on the institutions which have no more functions. At the time of this questioning:

* The institutions' usage of public sources and the ability of creating new resources has been compared. These data have shown the productivity of the institutions.

* Whether or not the society demands the productions that are provided by the institutions for consumption has been marked. The data derived from this particular point confirm the balance between supply and demand and this has confirmed the effectivity level of the institutions.

* By comparing the portion which institutions has got from public resources and the satisfaction from societal expectations, the level of the quality has been cleared.At the end of the questioning the mentioned institutions have marked:

* The institutions have been ineffective because;

they have been just a consumer rather than producing resources.

because they have been nonfunctional because of lack of demand for their product.

* The institutions have been seen unqualified because they couldn't benefit from the portion of the public resources.

These institutions' products, production processes and their shares in the market have been analysed. Among these institutions those which had effectivity problem regarding to structure and functions and that could be made effective and useful again have been imposed to get in changing and resutructuring programs. And the others which are ineffective since the reason of their existance has abolished and as a result of it not being able to keep up the changes and/or if their existance is just being an obstacle for changes has been trying to be displaced quickly.

Universities have had the priority for being a target for analysis studies. At the end of the analysis it has been understood that universities have productivity and low quality problems and the level of effectivity is getting lower depending on these problems.

From these institutions' side the problem arisen by not having a balance between the two basic and existancial functions of universities: Research & Education. The balance between these two functions has been lost. In fact, researching is a means to attain higher education's objectives. However, in English, in the time being, university research has become not a means but an objective for the institutional existance. This

debilitated the researches to be useful for higher education. This kind of universities are known as research universities.

Although it is known that in English society the need of higher education is increasing, because the universities are insisting on giving a priority to researching it is possible to see delays of education's expectations or putting the education in a secondary place, or even denial of the education can be seen. This is defined as the problem of the universities becoming research institutions instead of educational structures (Laurillard, 1996, p. 14-23).

The mentioned or complained tradition of English University formed by the leadership of Oxford and Cambridge has been based on the idea that the university which has nothing to teach is nonfunctional and consequently it is ineffective (Daniel, 1996).

Knowledge which is to be be taught should be reached by researching. That is why university's researching mission is emphasized. However, it has been confirmed that because of priority of reserching, teaching mission has been seen as an unnecessary thing to spend time and money on. Meanwhile, it is not wrong to put forward that universities which set its priorities according to the traditional principle are ignoring the changes in society's expectations.

The demand for change can be described as from society's academic institu-tions it is expected to put the expectation into teaching without examinig its priorities. Because university has become late to acquire and adopt these changes it couldn't manage to keep pace with the changes. Consequently because university is not able to respond society's expectations, it caused some hopelessness and dissappointments.

As a result of this, English universities have become institutions who have been questioning for effectiveness and necessity of their existance. After all these

ineffectiveness, English society has been treated seriously by act of terrorism and radicalism.

When reason of these events were inspected two clues were realized in the university. The first one is: University is using almost all the resources for research that is supposed to be shared equally on research and education. The reason of having very limited resources for education is stated above. The demand for education is increasing but the number of students especially in higher education has no significant increase. So the problem is seen as a matter of quantitative insufficiency in terms of physical capacity. However, quantity problems has brought quality problem together. Because the research which is the main priority of the university are interested in details, these findings were not able solve the problems and the lined into teaching contents (Dearing, 1997).

When the questioning had greater dimensions it is seen that the problem is not only the matter of ineffectivity and quality but also it shows that most of the higher education programs are unserviceable after graduation. It shows that with the other two problem,s the problem of effectivity is so important. When Sir Dearing pointing out inabity of English higher education programs to solve current problems he based on this reason in his report.

B. How About the Results of Analysis on the definition of the University?

According to results of analysis in English education system, there are obvious problems with regard to productivity, effectivity and quality. The objectives of the report can be itemized as follows:

* It is a must for universities to be sensitive for the changes in society demands.
* The expectations from universities has changed. For this reason "research" must be an objective but a means for teaching.
* University should have two basic mision including teaching & research. The

quantitative proportion between the "teaching" and "research" universities should be determined according to society's expactations.

* It is a must to regain the demand which university caused to lose.

* Research should be done to determine requirements of teaching. If these knowledge and ability is not available research should produce them.

* Higher education programs should be assorted and the level of qualification should increase.

* The money which university gets from public budget and the burden in national economy should decrease gradually. These institutions should try to find and/or producetheir sources.

To attain these basic objectives redefinition of a university should come first among some urgent measurements. The principles based on the new definition are briefly as follows:

* Education should be identified or accepted as an important market of service sector. The dimensions of this market could expand to overseas.

* In this market;

  • the name of the product is the academic acumulation.

  • student is a customers whose satisfaction is a pre-requisite.

  • The given production is defined as teaching or learning.

  • the name of the institution which tries to protect present shares and increase them is the university.

  • university compete with each other to protect their shares in this market and increase them if possible.

  • The name of the market research is needs analysis..

  • guidance and academic advice supplies a chance for public relations in customer's satisfaction. It is as well useful for marketing.

• provoking the demand is used for advanced marketing campains.

• acreditation & evaluation is accepted as an important performance indicator which confirms the level of the service, product, production process which clears out the quantitative and qualitative the level achived.

III. Intensification of the Change & Resutructuring in EOU

A. The Winds of Change is Getting Faster

Institutions which had conventional (traditional or inclass) teaching have been opposed to the winds of change which has started in English university. This opposition is still alive.

However, EOU has managed to evaluate the oppotunities supplied by distance education method and comprehend the parameters of the principles. So it has included these principles by adapting to its structure and caught the winds of change.

The first and basic radical step put forward to the change has been, starting the market and needs analysis.

With Sir John Daniel's appointment as the Vice Chancellor, this process started fast and intensively. These studies took place in mision definition of the dept. of Public Relations at the Institute of Educational Technology (IET).

In this unit, the number of the staff has increased and utmost technological opportunities have enrolled. At the end of the national and international market research by the PR unit, demand and customer identification has been made in such detailed that they can not be known even by the experts working in the other units of the institution and university.

University made it possible to set an individualy communication network for one-to-one contact with more than 250.000 students, through the informa-tion infrastructure. The centeral PR unit is located in Milton Keynes Walton Hall Center,

however the same service is given at the 13 Regional Study Centers spread all around the country. Between the the center and regional centers there is an intranetwork between for data circulation of the the institutions.

As a result of the market researches held by the PIAR unit, EOU realized before conventional English universities, that it is the right time to change the teaching strategies into learning policies where as not insisting to educate huge masses but the individuals.

B. From Distance Teaching to Open Learning

Market research and need analysis results has showed that the traditional understanding of distance teaching do not meet the needs of the day. The change at the content of masssive demand to individuals needs has been the critical effect. Nevertheless, another data has been useful on realist organization of content of the new approach. Thereupon it is understood that the, potential higher education students are ready to prefer EOU to traditional universities as long as EOU's servise quality is better than the others.

This results caused revolutionary change at the institutional identity of the service given by the EOU. Upto this point, there had been a wrong understanding that EOU students prefer DE only because they have no other options available. That is why EOU, just as most of the other DE institutions, had seen herself as a second chance-second quality university. In the direction of opinion all strategy and politics had been developed by thinking that EOU didn't have any chance to compete with traditional universities ignoring the obligation of competance.

Nevertheless, with the increasing need for individual learning, the oppurtunities supplied by traditional university has lost its attractiveness. In this situation it is clear that higher education which identifies student as an individual without any time and physical

restrictions will gain attractiveness. EOU is now competing with traditional university by converting its teaching to mass strategies into knowledge delivery to individuals. The definition of this new approach is Open University.

C. Open University Versus Oxbridge: A hopeless competition?

The analysis result which has mentioned before brought EOU to a critical conclusion that the current understanding of being a second chance-second quality institution, which keeps EOU away from the competition, should be questioned. Today the PR findings leave no space for doupt that EOU has caught the quality of traditional institutions by upgrading the quality of the service restructured by market research outputs. In this case the presented service, quality effectiveness and productiveness have been brought to level which is at least equivalent to traditional universities, but may be more.

The target which was defined in 1990 was to reach traditional universities' service quality level. However, from theChange Plan prepared for 1996-2005 years it can easily be understood that quality level projecsions are even higher and the new target can be identified as why not getting even better than the traditional universities? (1995)

The effective presentation of the EOU program content, the technological level of instructional materials and experienced sufficiency of the EOU resources enabled to qualify equivalent to traditional universities. However, there was a widely accepted and dominant view, which has become a tabu in the time being, that Oxbridge tradition was better with its teaching quality than EOU. The increasing student number of EOU has been creating a disadvantage infront of the traditional universities.

Once again using market research results strategic decision made to solve the problem showed that these disadvantages could easily be turned into advantages if;

* the rate of the face-to-face mediums, among students themselves as well as with the tutor, could be increased,

* the number of the students in a class could be made lower,

* the classes could be better equipped with new technologies,

* transportation to the classes could be made easier, when compared with the conventional Oxbridge traditioned üniversities.

D. Assortments of Programs

As it is known, there is no entrance exams to take to become an EOU student. On the contrary, to be a student of traditional university being successful in the entering exam is a pre-requisite. The first reason of this, distance education in its former term or open university with its new definition is able to keep its student capacity larger. Beside this, because high participation and easy acces principle of this contemporary education option, eliminating implementations aren't standing anymore. All the UK students succeded in secondary level schools have right to be a student of EOU.

The few requirements they are expected to fulfill for the enrollment are choosing the education program, filling in the application forms with the guidence a consultant, paying registration fee, undertaking to pay the education expenses, which are cheaper. Those who decides to become an applicant can have consulting support from both Milton Keynes center and other regional information offices. The courses included in EOU's program can be optional or required subjects regarding to students' preferences. It is possible see common points between these programs and pre-licence or remedial teaching. These are called certificate programs. Furthermore, to have right to get this certificate students are supposed to have a range of exams and do some projects. However getting the certificate isn't compulsory.

Pre-licence programs are formed by gathering a range of certificate programs. By having different certificate programs in different times students may complete a pre-licence program in more than one academic year or they can do it taking the whole program in an academic year. If students don't want to have a diploma they don't have to undertake some academic obligations. To have pre-licence taking the certificate and to attend four-year education diploma of pre-licence is obligatory. EOU applies open learning procedures for post graduate education.

E. Decreasing the expenses

All EOU application strategies aim to decreasing expences and increasing resources. The Change Plan: 1996-2005 are created to fullfill the changes below to increase resources;

* marketing investments will be accelerated.

* technological investments will be intensified to decrease human resource expences.

* by the help of the job analysis, new job description will be made.

* carrier planning principles will be redefined depending on constitutional policy objectives.

* performance evaluation will be done by improving measures and criterion.

* those who have low performance and sufficiency for the job will be subjected to in-service training by orientation oppurtunities.

* for those who aren't successfull in orientation process retirement will be made attractive.

F. Learning to survive without Public Resources

Until 1990, EOU used to be a higher education institution giving mass education according to the state's requisites as AU/OEF does now.

Thereupon, the state had been EOU's both financial resource and consumer. It is possible to say state is the reason state office ignoring effectiveness, productiviness and quality criterion.

Therefore, EOU had become an institution which didn't aim to compete, so it didn't show any effort for creativeness or innovation. Because of depending on it's objectives EOU was inactive and it didn't have producing stimulation. Due to over-much workforce EOU had been unable to meet what it expeded.

Starting from 1990 it had been started to cut the shares of the universities in public funds gradually due to effects of privitization policies. However in the other hand, state has made it possible for universities to find financial resources except state's budget and couraged them with project based study programs.

EOU has been one of the most easy going institution to be in accordance with project based study type. Thus, EOU had the chance of interact directly with the demand and the market by removing the state that was in mediator position. To achieve this it had to do a series of market researches. These researches weren't alike to EOU's traditional procedures and the staff weren't familiar with that kind of researches. However, it has turned its clumsy and consuming structure into effective and productive one.

IV. The Need of Change & Restructuring in OEF

At the beginning of 1980's OEF gave hopes to the students who hadn't had chance to have place in higher education. As yet, public hadn't forgotten unsuccessful

conduct of YAYKUR and Correspondance Schools, held by Ministry of Educatuion. Additionally, academics were rejecting DE for ignoring the qualitative against quantity .

The first capacity of OEF had to be increased by 100% because of dense demand, though. The registration rate has doubled itself for the beginning couple of years.

In that time Economy and Business Administration programs which were in Higher Education level, capacities were limited. However, the program, projected according to principles of distance education, and the mass demand were in accord.

However, ten years later, in the early 1990's, it is clearly seen that the demand, determined by application and registration, had decreased by 40-50% even if the the capacity was increased gradually. In the last two years it has been decreased by 25%, because individual demand has gained priority. In other words, OEF students were fedup with mass education programs which meet common student needs. Instead, the content and the form of the service delivery should satisfy individual expectations. Thats why learning replaced teaching.

V. What Should Be Done in OEF?

State shouldn't be resource of finance!

OEF has been studying on the projects created by the state except one or two exceptions. In Higher Education level Economy and Business Administration Graduate programs (4 year), Education pre-licence completition (+ 2 years), Public Health Staff and Nursing pre-licence (2 year) etc. are the projects determined by the state. With this way interaction between the producer and consumer is prevented.

State is being a representative of the faculty for the students. In other words, students are obligated to accept programs. As a result of this students remain unaware of

the needs met by these programs and they get enrolled to these programs just for the benefits of their personal matters like degree, grade etc.

The State represents the students for OEF, too. And this results in a position that doesn't base on any need analysis or market research. So, it is inevitable for the faculty to fulfil representation processes which don't reflect the facts and based on erroneous data. The obvious indicator of this case are low achivement avarages of mid-term and final exams and tendency to cheat in the exams.

To solve this problem even the project and demand determined by the state is reflected to OEF must do needs analysis & market research. This application will help the programs to base on foundations determined by the students' who have dense individual interests and expectations.

Detailed market analysis should be made!

OEF should turn the demand movements which based on observations and anticipations into concrete data and it should design, products quality, producing and presentations according to these information. To fulfil this it should give the required importance to detailed market analysis.

Statistical analysis of these data will show the position of OEF in the market, the content and shape changes of the demand and their dimension in total mass. These data will make it possible for OEF and university administration to get their future vision with actual data.

By this way researches will take a course not only in national market but also in international markets and they facilitate both fulfiling the policies and expressing faculty's income.

It is possible to carry on these researches after delivering the production with regarding to productiveness, effectiveness and quality measurements.

Marketing should be a must for OEF!

The projects created by the state has a functional importance on OEF can't be denied. However, it has been realized at the end of 1990's that the projects created by the state has had very few advantages.

Furthermore, it is a fact that expecting projects from the state has made the faculty's productive and creative dynamics inactive and nonfunctional. It hasn't been discussed that the faculty has had expert staff, it has improved experience, and it has developed monetary and technological infrastructure. OEF appears to be self sufficent and be able to improve itself.

This case shouldn't be perceived as it shouldn't receive any projects from the state. The emphasized point is that OEF shouldn't be satisfied with state projects.

OEF reflects that by activating dynamics in itself and in the university's expert units it can have more oppurtunities than it has now. To do this it is enough to define the target market and to meet the demand with producing processes which are choosen appropriately and delivered.

Then effective introducing in the existing demand and alert the new demans, it is necessary to add the service and benefit from Guidance & Advising advantages.

The international market is to be one of the interests of the faculty. Central Asia Turkish Republics and Middle East seems to be highly profitable markets.

Additionally, that, these markets are close to Turkey regarding with both the geographic posotion and cultural features, is a fact which should be given importance and care on it.

Consumer's satisfaction should be the basic strategy!

Because market researches and analysis will figure out individual and mass demand it will be easy to determine the different subjects and the dense ones in the demand.

Planning, designing, developing and applying of individual and different program contentment; forming a common program balance with its contentment will be possible to be based on statistical data.

When these balance and rates are on technologies should be observed according to their appropriateness.

The services should be assorted!

It is clear that demand aren't satisfied with the quality and the quantity both in Higher Education and in the other education fields. Meanwhile expectations for the education are increasing. It can be seen that OEF will have three times as many students as it has. When it reaches these numbers it is inevitable for OEF to have increased volume and share in the market. This increase in numbers will render the satisfying difficult. Thereupon OEF programs it is a must to be assorted regarding with:

- service kind
- Education level
- by taking field and the subjects into consideration
- by determining the benefits it will get

Education can be given as Distance Education Based (DEB) or Distance Education Supported (DES) as well as Distance Teaching (DT), Open Learning (OL) or Open Distance Learning (ODL)". In the DEB delivery, the service can be given according to mass distance education meeting common needs, delivered by the mass media without face-to-face support. However, in DESs face-to-face is essantial. But, to improve effectiveness and productiveness some supports can be supplied from distance education and open learning.

OEF can give education not only in graduate & degree, pre-licence and licence completition level in higher education but also in primary secondary education levels, as well as inservice tele-training, life-long education, post-graduate education.Open Lycee

and Open Elementary projects held by the Ministery of Education should be assesed as a lose in the market for OEF. OEF has showed some assortments on the subjects and the fields. Analysing the content the projects than can be benefited should be determined.

Analysing the content is an essantial principle in productiveness. For example, teaching math is a subject that is included in many OEF programs. Math books have been written more than twice with the same subjects but by different writers for different programs. Then they have been edited. This case causes extra expenses and decreases the productiveness. Instead they should be appealed for the new parts that must be included in the book, for different programs.

All the programs in OEF, related with higher education obligate to get graduate/pre-licence/pre-licence completition diplomas or certificates at the end. This obligation limits the mass which benefit from OEF's education service and it restricts the size of faculty's share in the market. Taking OEF's diploma or certificate programs out of an obligation but making it optional will not only expand the size of the market shares but increase the number of the students benefiting.

It should be beared in mind that the TV programs broadcasted by the faculty is watched by different parts of the society beside its students. In fact this clearly shows that OEF has exceeded its borders. The thing that should be done is converting this interest into learning by additional materials. And the only thing that students should fulfil is registration obligations to benefit from these services and increase their advantages.

The size of the mass should be smaller !

Anadolu University Open Education Faculty is a mega university with nearly 600.000 students. From an aspect, since there is no other university involved with that amount of students it can be assesed as a problem, if compared with similar institutions.

On the other hand, when Turkey who has a 67% young population demanding education is considered, this huge quantity becomes an advantage or a unique must for .

However, it is obvious that the proportion between effectiveness, productiveness and the quality and the quantity in education is contraversial. Especially, the increasing demand on face to face education is considered it is amust to decrease number of the student per a program. So the option for solution comes:

- increase the program alternatives
- decrease the number of the students per program
- meet the quantitative requirements in the same time increasing the quality level.

The content & delivery should be updated !

The programs and materials in OEF's academic background have been functional until now. Meanwhile the effectiveness has been weakened and lost. The main reason for this is related to the fact that the contents are out of date, at the moment. So the needed knowledge in the content can't be found that makes student dissappointed. These planning problems in structuring of the content. In relation with the mentioned insufficient content design media planning becomes ineffective.

As an example, to make the students gain physical competence application of audio-visual communication opportunities has some scientific reasons.

TV, video, CDROM or CDI etc. can be used here. When it comes to make them gain intelectual competence using visual materials is an academic tactic which makes learning difficult (Barkan, 1992).

So instructional & media design units should be enrolled and let them work in course teams with production and evaluation/accrediation.

Entering exams shouldn't be a pre-requisite for DE programs !

Among similar DE institutions that have higher education programs, OEF is the only institution who has entering exams. Entering exam is something anomolous

regarding to principle and functions of distance education or open learning and it is checking the candidates' competence of starting point.

Mid-terms and finals should be optional !

Exam is a means to measure and evaluate the level gotten by education and defined with grades. Through these exams, how far the students get closer to the objectives marked at the beginning is determined. Making the mid-term and final exams obligatory target mass will be limited and expenses will increase.

More units should be brought together in production !

OEF has been showing the ability of benefiting coordinatively some units in Anadolu University. Computer Research and Application Center and Computer Aided Education Center are already existing examples to these units.

However, there are some units that can't aid OEF although they could help structuring the content and increasing the presentation quality. The units among tnese are:

- Fine Arts Faculty Graphics Department which can help tincrease visual attractiveness and effectiveness of the books.
- Fine Arts Faculty Animation Department which has proved its ability on animating that is one of the most effective ways of moving images.
- Communication Science Faculty Educational Communication and Planning Department which can help instructional design of the programs by analysing need and content.
- Communication Science Faculty Cinema and Television Department which can help with its expert staff and background.
- Communication Science Faculty Communication Arts Department which has different projects on market research, advertising and public relations.
- Communication Science Faculty Press and Publication Department which can

help with its effective communication competence with written materials.

- The coordination unit which can be formed by these faculties' representatives will guarantee effectiveness with analysis, planning, editing, producing and presentation quality.

In-service education should be applied for orientation to the change & restructuring period !

Change and restructuring programs are needed in every organizational institutions. However, it can be harmful for the organization when the human resource is inappropriate.

The reason of this is charging the organization with new loads. These loads require not only contribution but also time and money. Thereupon, when it doesn't worth for its burden steps shouldn't be taken in the direction. Before the applications of charge and restructuring programs reliable organizational communication processes should be provisioned.

All individuals and units in organizational institution in which the program will be applied should get in-service training. In-service training has different strategies in different steps. However, in all the steps common target should be oriented. The first objective in OEF should be the general acceptance for the need of application of the program. Briefly in this steps these questions should be answered: What will be applied? Why will it be applied? In this step the method can be collective discourse.

The second objective in OEF should be informing the individuals who will participate in the application. Briefly, in this step the questions of who-what-how? should be answered. The method can be some seminars relating with units. Comparing the old and the new methods relating with developing vacational performans can be a useful alternative. It is clear that participation of writer-designer-editor and the experts in producing units in OEF is obligatory.

VI. Conclusion

In the end of 1990's Anadolu University Open Education Faculty is on the point of where EOU was at the beginning of 1990's. First of all Turkish public opinion is questioning OEF's benefits for the society and most of the time it judges without questioning. The reactions of the publics with different means and in different places shows that OEF is losing the positive impressions and image belonging to early 1980's.

However, the demand for the faculty programs has noticebly decreased in the last twenty years. It shows that the faculty has seriously effectiveness problem related to the qualitative insufficiency. While faculty is improving its communication investments, enlarging its national and international organization body and increasing the number of the staff, the demand for the faculty has been decreasing. This indication shows that the faculty is having a serious productiveness problems in addition to quality and effectiveness problem.

This study is to have OEF benefited from the results of the two studies which he did in EOU seven years later again. EOU started the change and restructing process because of the problem OEF has now. This process is going on successfully and improvingly. Considering human resources' background and competence and technology and financial opportunities of OEF, it seems the same success is achivable.

The solution motions for the problem aren't the same as EOU had. In fact, the writer isn't trying to adapt EOU's change and restructring programs for OEF. However, in everywhere not only the agents of the problems but also the solutors of these problems are knowledge, human resources and inside dynamics of the organization. It is the same everwhere. In other words, in every part of the world quality, effectiveness and productiveness problems are caused by the same reasons. And the solution alternatives are similar.

On this point the aim of the writer is presenting an alternative when the university's and facultys' decision makers think of finding solutions for OEF's problems and not leaving his friends without alternatives on that point.

REFERENCES

AKYÜREKOĞLU, Hasan. (1995) The Role of Distance Education in Corporate Training (unpublished master's thesis), The Pennsylvania State University, University Park, USA

ALSAGOFF, Sharifah A. (1990) "Training Needs in the Use of Media For DistanceEducation in Malaysia", in Training Ne eds in Use of Media For Distance Education, (Ed. by Shannon Timmers), Published by Asian Mass Communication Research and Information Centre-AMIC-, Singapore.

ARTHUR Clarke, (1995) the science fiction writer, addressed A meeting of journalists in May 1995 via satellite from his home in Sri Lanka. The interactive videoconference was arranged by CNN.

BANDY, Elizabeth,(1996) "Very Small Aperture Terminals", Communication Technology Update, (August Grant ed.), Newton, Mass: Focal Press, USA.

BARNARD, John.(1992) "Multimedia and the Future of Distance Learning Technology", Educational Media International, V: 29, Number: 3, USA.

BARKAN, Murat (1992) "Multi-Functional Medium Instead of Multi-Media: A Theoretical Approach to Strategical Media Employment Alternative To Improve DE For The Education of Greater Masses", Media and Technology for Human Resources Development, All India Association for Educational Technology, 4(2), India.

BARKAN, Murat (1996) "İngiliz Açık Üniversitesi'nde Yapısal Değişiklikler ve Açıköğretim İçin Düşündürdükleri", Kurgu, S. 10, Anadolu Üniversitesi İletişim Bilimleri Fakültesi Yayını, No: 62563, Eskişehir,Turkey.

BATEY, Anne. (1986) "Distance Education: An Overview", Office of Educational Research and Improvement, Northwest Regional Educational Lab., Technology Program, Portland, OR, Washington, DC, USA.

BOWELS, S. and H. Gints. (1976) Schooling in Capitalist America, Routledge & Kegan Paul. London.

BROOKOVE, W. B. (1949) "Sociology of Education: A Definition", American Sociological Review, V: , USA.

BROWN, F. J. (1947) Educational Sociology, New York, Prentice Hall, USA.

BUCKLAND, Micheal and Charles M. Dye. (1991). The Development of Electronic Distance Education Delivery Systems in the United States. Recurring and Emerging Themes in History and Philosophy of Education, Paper presented at the Annual Conference of the Midwestern Educational Research Association, Chicago, IL, USA.

CARELESS, James, (1996) "Business TV Applications Via Satellite", Via Satellite, November, USA.

CASTEL, F., (1997) "WorldSpace Reaches Milestone withMicrochip", Space News, September15,USA.

CHARP. S. (1997) "Innovative Learning Environments Go Global", T.H.E. Journal, October 1997 Issue, USA.

CHOU, Chien. (1996) "Constructing a cooperative distance learning system: The CORAL Experience". ETRD, Vol. 44, No. 4, USA.

COMMUNICATIONS INDUSTRIES REPORT (1998) "Videoconferencing: Moving into the Main (Video) Stream", February, USA.

COMMUNICATIONS INDUSTRIES REPORT (1996) "Utility Invests in Ohio Fiberoptic Networks", June, USA. .

COMMUNICATIONS NEWS (1997)Classroom Without Walls", February, USA.

CROTTY, Teri. (1995). "Constructivist Theory Unites Distance Learning and Teacher Education", ED Journal,V: 9, Number: 4, USA.

DAHLLOF, Urban. (1988) "Continuing Education New needs and Challenges For Distance Education Studies", Developing Distance Education, (Edited by David Sewart and John S. Daniel), International Council for Distance Education, Oslo, Norway.

DANIEL, S. John. (1988) "The Worls of Open Learninig", Open Learning", in Transition An Agenda for Action, (Edited by Nigel Paine), National Extension College, Cambridge, United Kingdom.

DANIEL, S. Jonh. (1995) The Mega Universities and the Knowledge Media: Implications ofNew Technologies for Large Distance Teaching Universities,A thesis in department of Education at Concordia University, Qubeec, Canada.

DANIEL, S. Jonh. (1996) The Mega Universities and the Knowledge Media:Technology Strategies for Higher Education, Kogan Page, 1996, United Kingdom.

DEAN, Lauren. (1994) "Telecomputer Communication: The Model for Effective Distance Learning", ED Journal, V: 8, Number: 12, USA.

DEARING, Sir Ron (1997) The National Committee of Inquiry into Higher Eucation in the Learning Society (Summary Report), UK.

DEMİRAY, Uğur. (1990) A Review of the Literature on the Open Education Faculty (1982-1992) An expanded 2nd edition, Anadolu University Publications, No: 768/390, Eskişehir, Turkey.

DEMİRAY, Uğur; İsman, Aytekin, et.al., (1997) "Use of Satellites in Distance Education in Turkey and Japan", ED At A Distance, V:11, November,USA.

DEMİRAY, Uğur. (1998) A Review of The Literature on the Open Education Faculty (1982-1997) An expanded and revised third edition, Anadolu University Publication Number: 1015/558, 1997, Eskişehir, Turkey.

DOHMEN, G. (1967) Das Fernstudium, Ein Neues Padogogisches Forschungs- und Arbeitsfeld, Tübingen: DIFF, Hagen, Germany.

DODDS, Tony. (1983) Admistration of Distance-Teaching Institutions: A Manual, International Extension College, Cambridge, UK.

EDWARDS, R. and R. Usher (1997) "University Adult Education In The Postmodern Moment: Trends And Challenges", Adult Education Quarterly, Spring/Summer 97, Vol. 47,USA.

ELY, Donald P. and Barbara B. Minor (1993). Educational Media and Technology Yearbook, Englewood, Colorado: Libraries Unlimited, Inc., USA..

ERDS, (1990) June, ED 325 633, CE 056 136.

EVANS, Terry and Daryl Nation. (1989). Critical Reflections on Distance Education, The Falmer Press, Deakin Studies in Education Series.2. London, New York and Philadelphia.

FEASBILITY ANALYSIS of Nation-wide Distance Education Alternatives, Final Report, (1997) (Project Director: Murat Aşkar), December Tubitak-Bilten, (Unpublished Report) Ankara, Turkey.

FEATHERSTONE, M. (1990) Global Culture: Nationalism, Globaliza tion and Modernitiy, London, Sage, United Kingdom.

FEATHERSTONE, M. (1991) Consumer Culture And Postmodernism, Sage, London, UK.

FIELD, J. (1994) "Open Learning and Consumer Culture", Open Learning, 9(2) 3-11, UK.

FLOUD, J. (1967) "Educational Sociology", A Dictionary of The Social Science, (Editör: J. Gould and W. L. Kolb), New York, Wadsworth Inc., USA.

FLOURNOY, Don M. and Tom N. Scott, (1998) "The Last Mile: Where Telecommunications Traffic Slows to a Crawl", Communications Forum, International Engineering Consortium, Chicago, USA.

FOSTER, Barbara. (1993) Telecomferencing From a Rural Perspective in The Southeast, ED Journal, V: 7, Number: 8,USA.

FUCHS, John. (1997) "A/V Professionals Discover OnLine Distance learning", Communication Industries Report, December, USA.

GAST Gert, Jenny Ounsworth, Elyn Lewis, Sandra Davey and George Jeager (1992) "An Online Open Learning Campus?", Educational Media International, V: 29, Number: 3, USA.

GIBSON, Ian. (1994) Distance Education in Reverse: Training Via Two-Way ITV. ED Journal, V: 9, Number: 1, USA.

GIDDENS, A. (1990) The Consequences of Modernity, Polity Press, Cambridge, UK.

GLATTER, R. and E. G. Wedell (1971) Study by Correspondence, Longman, UK.Global Change and Global Responsibility, United Nations University, Tokyo, Japan.

GRANT, A.E. (1994) Communication Technology Update, Butterworth-Heinemann, Boston, USA.

Green County Community (1993) Staff Development for Volunteers: Distance Education Through, Home Study Option.

GOLDENBERG, S. (1987) Thinking Sociologically, Wadsworth Inc., USA.

GOULDNER, A. W. (1979) The Future of Intellectuals and The Rise of The New Class, New York, Continuum, USA.

HACKBARTH, Steven. (1996) The Educational Technology Handbook, Englewood Cliffs, New Jersey, Educational Technology Publications, USA.

HAYNES, Kathleen J.M. and Dillon, Connie Dillon. (1992) "Distance Education: Learning Outcomes, Interaction, and Attitudes, Journal of Education for Library and Information Science, Winter issue,V: 33, Number: 1, USA.

HARASIM L, S.R. Hiltz, LTELES, and M. Turoff. (1996) Learning Networks: A Field Guide to Teaching and Learning Online, Cambridge, Massachusetts: The MIT Press.

HARVEY, D. (1991) The Condition of Postmodernity. An Enquiry Into The Origins of SocialChange, Basil Blackwell, Oxford, UK.

HARRY Keith, Magnus John, and Desmond Keegan (1993) Distance Education: New Perspectives, London & New York: Routledge Press, UK.

HEINICH, R.,M. Molenda, and J.D. Russell (1993) Instructional Media and The New Technologies of Instruction, New York: Macmillan Publishing Company, USA.

HOLMBERG, Borje. (1982) Recent Research into Distance Education, FernUniversitat, Hagen West Germany.

HOLMBERG, Borje. (1982) Perspectives of Research on Distance Education, 2nd update and Expanded edition, (1990) Fern Universitat, Hagen, West Germany.

HOLMBERG, Borje. (1995) Theory and Practice of Distance Education, London and New York: Routledge Publ. Company.

IVANOVIC, Greta. (1995) "Iowa Communications Network Enhanching Education in Iowa,ED Journal, Vol. 9, Number: 5, USA.

IŞMAN, Aytekin. (1995). Living in the information age: Global Distance Education. Paper presented at the Annual meeting of Association for Educational Communications and Technology, Ames, Iowa July 6, 1995.

IŞMAN, Aytekin, (1997) "Diffusion of Distance Education in Turkish Higher Education", Educational Technology Research And Development, Vol. 45, No.2, USA.

JARY D. and J. Jary (1991) "Sociology of Education", The Harper Collins Dictionary of Sociology, Harper Parennial, USA

JENKINS Janet. (1997) Open and Distance Learning-The Cornerstone of Lifelong Leaning for the Information Age, Presented paper at the World Con

ference on Education in India: Next Millennium, on 12-14 November, 1997, New Delhi, India.

JONASSEN David, Mark Davidson, Mauri Collins, John Champell, and Bannan Haag (1995) "Constructivisim and computer-mediated Communication in Distance Education", The American journal of Distance Education, Vol. 9, Number: 2, Pensilvania, USA.

JONES Ann, Gill KIRKUP and Adrian Kirkwood (1993) Personal Computers for Distance Education, St. Martin's Press, NY, USA.

KAYE, Anthony. (1990) "Computer Mediated Communicatin and Distance Education", in Mindweave: Communication, Computers and Distance Education, (Edited by Robin Mason and Anthoy Kaye), Pergamon Press, Exeter, UK.

KEEGAN, Desmond. (1985) " On Defining Distance Education", Distance Education International Perspective, (Edited by David Seward, Desmond Keegan and Börje Holmberg), Croom Helm and St. Martin's Press, United Kingdom.

KEEGAN, Desmond (1990) Foundations of Distance Education, 2nd edition, Routledge, London and New York, 1990, United Kingdom.

KENWAY, L., C. Bigum & L. Fitzclarence (1993) "Marketing Education in the Postmodern Age", Journal of Educational Policy, 8(2), USA.

KENWORTHY, Brain. (1991) "Old Technology, New Solutions: The Potential of Educational Radio for Development in Mogolia", ED Journal, V: 9, Number: 1, USA.

KREBS, Arlene, (1997) "Star: Approaching a Decade of Accomplishment", Via Satellite, November, USA.

KNAPP, Linda Roehrig and D. Glenn Allen (1996). Restructu- ring Schools with Technology, Boston, M.A.: Allyn and Bacon, USA.

LANE, Carla. (1997) Examples of Schools Using Technology.(http://www.fwl.org/edtech/oritechexamples.html), Internet.

LAURILLARD, Diana (1996) Rethinking University Teaching: a framework for the effective use of technology, Reutledge studies in Distance Education, London,UK.

LJUTIC, Anton. (May-1996). Learning to Telecommunicate. Learning and Leading with Technology. USA.

MACKENZIE, Ossian; Edward L. Christensen and Paul H. Rigby (1968) Correspondence Instruction in the United States, McGraw-Hill Book Company, New York, USA.

MACKENZIE, Ossian; Edward L. Christensen. (1971) The Changing World of Correspondence Study, The Pennsylvania State University Press, University Park, London, UK.

MALHOTRA, P. L. (1985) Distance Education in India-Its Development and Significance, paper presented at National Pilot Training workshop on Distance Education, in Collaboration with Unesco and Ministry of Education, on 26 August-9 September 1985, Delhi, India.

MANASCO, Britton, (1996) "Between Two Worlds: Why Satellite Distance Learning is Both Thriving and Merely Surviving", Via Satellite, November, USA.

MARKULOWICH, John, (1997) "Internet 201: A Prep Course on Distance Education", Washington Technology, February 20, USA.

MATTEWSON, Claire. (1992) Whose development? Whose ne eds? Distance Education practice and politics in the South Pasific, Paper presented at the 16th World Conference of the International Coincil on Distance Education, Bangkok, Thailand.

McCONAGY, Tom. (1991). "The Global Village", Phi Delta Kappan, June, USA.

McGREAL, Rory. (1994) "Canadian Province Utilizes Distance Learning in New: Knowledge Economy", ED Journal, Vol. 9, Number: 1, USA.

McISAAC, Marina S. (1993) The Global Classroom: an International Perspective, Proceedings of Selected Research and Development Presentations at the Convention of the Association for Educational Communication and Technology, New Orleans, Lousiana, January, USA.

McISAAC, Marina S. (1993) "Economic Political and Social Consideration in the Use of Global Computer-Based Distance Education", in Computers in Education: Social, Political and Historical Perspectives, (Edited by R. Muffoletto and N. N. Knupfer), Hampton Press Inc., Cresskill, New Jersey, USA.

McISAAC, Marina S and Charlotte N. GUunawardena (1996) "Distance Education", Handbook for Research on Educational Communication Technology (a project of the Association for Educational Communications and Technology), (Edited by David H. Jonassen), Macamillan Library Reference USA, Simon and Macmillan, Prentice Hall International USA.

McKEE, Bruce. (1995). "Interactive television at the Iowa community colleges", ED Journal, V: 9, Number :5, USA.

MOORE, Michael G. (1973) "Toward a Theory of Independent Learning and Teaching, Journal of Higher Education,. Number 44,USA,

MOORE, Micheal G. (1986) Purpose and Practice of Home Study in the 1990's, Paper presented at the National Home Study Council Corespondence Education Workshop, Notre Da me, IN.

MOORE, Michael G. (1989) "Effect of Distance Learning:A Summary of the Literature", Paper for Congress of the United States Office of Technology Assessment, May, Washington D.C., USA.

MOORE, Michael G. (1990) "Background and Overview of Contemporary American Distance Education", Contemporary Issues in American Distance Education, (Edited by Michael. G. Moore), Pergamon Press, USA.

MOORE, Michael G. and G. Kearsley (1996) Distance Education: A System View, Wadsworth Publishing Company, USA.

MURRAY, R. (1989) "Fordisim and Post-Fordisim", In S. Hall and M. Jacques (Eds.) New Times: The Changing Face of Politics in 1990's, Lawrence and Wishart. London, UK.

NEMBY, T.J., D.A. StepıchTEPICH, J.D. Lehman and J.D. Rusell (1996) Instructional Technology for Teaching and Learning, Englewood Cliffs, New Jersey: Merill, an imprint of Prentice Hall, USA.

NORTEL PRESS RELEASE: www.norwebcomms.com/pages/press52.htm

OLIVER, R. and Reeves, T.C. (1996). "Dimensions of Effective Interactive Learning With Telematics for Distance Education, ETR and D, Vol. 44, Number. 4, USA.

PATEMAN. T. (1993) "Education and Social Theory", The Blackwell Dictionary of Twentieth Century Social Thougt, (Ed. W. Outwhite and T. Bottomore), Blackwell, UK.

PERRIN, Don. (1991) "The University of the Future", ED Journal, Vol. 9, Number 2, USA.

PERRIN, Don and Elizabeth Perrin (1994) "International Distance Education", ED Journal, V: 9, Number: 1, USA.

PERRY, Walter and Greville Rumble.(1987) A Short Guide to Distance Education, International Extension College, Cambridge, UK.

PETERS, Otto.(1973) Die Didaktische Struktur der Fernunterrichts, Weinheim and Bassell: Beltz.

PETERS, Otto.(1993) "Distance Education in a Postindustrial Society", in Industrialization of Teaching and Learning, (Edited: D. Keegan), London and New York, Routledge, Studies in Distance Education, United Kingdom.

PIIRTO, Rebecca, (1993) "Teaching on Television", American Demographhics, September. USA.

PLOMP, Tjeerd andD. P.Aly (1996. International Encyclopedia of Educational Technology, (Second Edition), Tarytown, New York: Pergamon, USA.

PORTWAY, Patrick S. and Carla, Lane (1994) Teleconferencing: Distance and Learning, Applied Business Telecommunications, San Ramon CA, USA.

POTTINGER, Matt. (1996) "FCC Opens Telecom to Power Company", Multichannel News, April 15, USA..

PUGH, R.C. & J.E. SIianz (April, 1995). Factors Associated With Student Satisfaction in Distance Education Using Slow Scan Television, Paper presented at Annual Meeting of the American Educational Research Association, Cal., USA.

ROSENBLUM, Sandra H. (1985) "Involving Adults in the Educational Process", New Directions for Continuing Education, Number 26, USA.

RUMBLE, Greville & Keith Harry (1986) The Planing and Management of Distance Education, St.Martin's Press, NY, USA.

RUMBLE, Greville and Keith Harry. (1988) The Distance Teaching Universities, Croom Helm, London and Canberra, 1982, UK.

SASSON, Kevin (1997) "An Assessment of the Virtual University Concept and its Impact on Traditional Higher Education", a thesis presented to the Honors Tutorial College, Ohio University, November, USA.

SAUNDERS, R., (1996) "WorldSpace Officials Solidify Plans for Services Control Center, First Satellite In Development", Space News, July 15, USA.

SCHRUM, L. and B. Berenfeld (1997) Teaching and Learning in the Information Age, Allyn and Bacon, Boston, USA.

SHARP, Vicki. (1996) Computer Education for Teachers, California State Unversity, Northridge: Brown and Benchmark Publishing,USA.

SILVERNAIL, David L. and Judith L. Johnson (1992) "The impact of Interactive Televised Instruction on Student Evaluations of Their Instructors", Educational Technology, June Issue, USA .

SMITH, Kevin (1990) "Distance Education: Touching With Technology", in Training Needs in Use of Media For Distance Education, (Ed: Shannon Timmers), Published by Asian Mass Communication Research and Information Centre-AMIC-, Singapore.

SPRING, Greg, (1998) "The Multiplexing Conundrum", Electronic Media, March, D1, USA.

STAHMER, Anna.,Naswil Idris and Debbie Bolai. (1990) "Development in Telecommunication Technology For Distance Education with Reference to Developing Countries", in Training Needs in Use of Media For Distance Education, (Edited: Shannon Timmers), Published by Asian Mass Communication Research& Information Centre-AMIC-, Singapore.

STANG, D. J. (1981) Introduction to Social Psychology, Cole Publication Company, USA.

STEINBERG, Steve G.(1996) "Intelligent RAM: The Coming Convergence of Memory and Processors", Wired, August, USA.

STINSON, John. (1997) "The MBA Without Boundaries", Ohio University, Winter, USA.

TAYLOR, Catharine P. (1997) "WavePhore Readies Consumer Push", Inter@ctieWeek, April 21, USA.

KATZ, Michael. (1997) Technology Forecast. Menlo Park, CA: Price Waterhouse, USA.

T.H.E. JOURNAL. (1998) "Navajo Nation Campuses Get High-Speed Internet Access", February, USA.

THE INTERNATIONAL ENCYLOPEDIA OF EDUCATION (1991) Washington-Action Corp., USA.

THE INTERNATIONAL ENCYLOPEDIA OF EDUCATION (1993) Washington-Action Corp., USA.

TIGHT, Malcolm. (1988) "Defining Distance Education", ICDE Bulletin, Vol. 18, September, Milton Keynes, UK.

TR WIRELESS NEWS. (1997) "WaveTop Channel", July 24, USA.

TRAGER, Louis, (1998) "AT&T Grafts IP Magic to Telephony" Inter@active Week, March 9, USA.

TV TECHNOLOGY, (1997) "WavePhore Gets a New Patent for Data Broadcasting", May 22, USA.

TUOMISTO, Jukka. (1987) "The Ideological and Sociohistorical Bases of Industrial Traininig: A Finnish Perspective", Adult Education in Finland, Vol. 24, No: 4, Tampere, Finland.

UNESCO (1979) Terminology of Adult education/Terminol ogie de la Educacion de Adultos/Terminologie de l'Education des Adultes, Paris: Ibedata, France.

GIBBONS, John. (1989) "Distance Education in Today's Classroom", in Linking for Learning: A New Course for Education, U.S. CONGRESS, Office of Technology Assessment, OTA-SET-430, Washington D.C., U.S.A.

WEGENER, N. (March, 1997) "NTU Network", VIA SATELLITE, USA.

WEGENER, N. (1996) "Telecommunications and The Changing Nature of Instructional Delivery", Syllabus, June, V: 9, Number: 9, USA.

WISHNIETSKY, Dan H. (1993) "Using Computer to Create a Global Classroom", Bloomington, IN. Phi Delta Kaaplan Educational Foundation, USA.

WORTHINGTON, R. (1980) Terrestrial Communications System in Distance Education, A Reference Booklet. This reference booklet prepared for a conference on telecommunications applications to distance teaching at the Darling Downs Institute of advanced education, Queensland, Australia.

YOUNG, Michael, and et al. (1980) Distance Teaching for the Third World, Routledge and Keagan Paul, London, Boston and Henley, United Kindom.

ZHANG, Shuqiang and Catherine FULFORD. (1994) "Are Interaction Time and Psychological Interactivity the Same Thing in the Distance Television Classroom?", Educational Technology, July-Aug., USA.