INTERACTIVE EDUCATION IN CYBERSPACE

Emin Doğan AYDIN[1]
Deniz AKÇAY[2]
Cengiz ERDAL[3]

Abstract

In the first chapter of this study interrelation between communication and information systems is analyzed. Then distance education and a case from Turkey is explained in details. The changing nature of university mediated knowledge, dimensions of change, effects of global commercialization, future corporate governance are discussed considering new economic constrains together with cash generation aspect of distance universities. In the final chapter a proposal for an itinerant university is given.

Key words: Distance Education, Interactive Education, Itinerant University

Özet

Çalışmanın ilk bölümünde bilgi sistemleri ve letişim arasındaki ilişk Türkiye üzerinden bir örnek verilerek açıklanmıştır. Üniversitelerde verilen eğitimde kitle iletişim araçlarının etkinliğinin artması, bu etkinliğin boyutları, küresel ticarileşmenin etkileri yeni ekonomik düzenlemeler göz önüne alınarak üniversite eğitimi incelenmiş ve son bölümde de gezici üniversite için öneri verilmiştir.

Anahtar Kelimeler: Uzaktan Eğitim, İnteraktif Eğitim,Gezici Üniversite

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[1] *Prof. Dr., İstanbul Aydın Üniversitesi İletişim Fakültesi Dekanı*
[2] *Arş. Gör. Yeditepe Üniversitesi Görsel İletişim Tasarım Bölümü*
[3] *Arş. Gör. Yeditepe Üniversitesi Görsel İletişim Tasarım Bölümü*

Introduction

Education is one of the most important issues in this age of informatics. The use of technology and informatics is helping education systems to reach masses and increasing the quality of education. Education is defined as the process of forming an individual identity, becoming sociable and gaining economic effectiveness. It is also the process of constructing the balance between human and the environment by interaction, which has many aspects.

In other words, education, by stemming from stages of communication, learning, building behaviours, functionalising skills, producing information and ideas, building technology and application, is the process of constructing a unique individual identity which has a happy, successful, and healthy life.*

One of the most prominent characteristics of this age is that the ways and means of benefiting from information have increased by the progress we faced in technology since early '80s. That time is known as the beginning of utilising Personal Computers (PC). This dramatically changed the life of the society in almost every aspect, including social, economic, cultural, and educational.

For the future benefit of societies, organizations and individuals, universities and their administrations should offer the following visions.

Higher education organizations will play a more significant role in the development of future knowledge economy. Global changes will have enormous and fruitful consequence on higher education resulting in great differences in comparison to the existing institutions. In the near future, knowledge will not be dominated by the universities where, anyone can easily obtain a database or a CD-ROM. Yet, universities will still be a necessity to supply support for academic researches and serve for cultural concepts of the society. Therefore they are essential for the future of all individuals.

The important question in that, how are we going to introduce a new vision to the world? It will be crucial challenge, to make the necessary changes, whiteout jeopardizing the existing identity of universities. Major changes will substantialize in the next 10-15 years; thus the new situation will create great differences among the old-timers and new comers. There will be new lines for

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* Alkan, C., **Egitimin Kavramsal Boyutu-Conceptual Aspect of Distance Education**, Uzaktan Eğitim-Distance Education, summer 1997, ISSN-1301-336X, Eskisehir, TURKEY, p.7.

education and practice. The success of nations, which provided high academic standards, will certainly continue to be the excellent ones.

The ideal education system must, as quickly as possible, generate individuals who are aware of the growing importance and the power of information. It must be as quickly as possible, because if a society benefits from the fruits of technology and informatics, the gap between that society and the other one which cannot benefit that much, widens in an accelerated manner. This worsens so called "balance" between the "rich" and the "poor" societies. Today, it should be realised that a poor society is a burden for individuals in a rich society, in economic sense.

Technology and informatics can make it possible for a society to educate its masses in different ages and with different skills and abilities. They can also create incredible developments in learning and education methods.

Interrelation Between Communication and Information Systems

For any communication, a communication system is needed just as for any information exchange a system of information is required. A communication system comprises all of the physical, electronic and social structures that provide and facilitate messaging between two or more people. Even face-to-face communication takes place through a system. A system of information, on the other hand, provides and facilitates the exchange of information—between a person and an information system or between two or more information systems. Although information systems technology is similar to the communication system in many ways, they are different from each other in terms of the ways they are used: information systems are basically not designed for interpersonal communication.

Simply put, all the inputs and outputs are called "information" whereas the inward or outward movements of information are called information system manipulation. To avoid confusion it should be noted that there are essentially two types of input and output activities when using an information system. The first involves what is traditionally considered information manipulation, retrieval, database creation, or data processing—manipulating an information system to perform a particular action on some set of data that is separate from the system software. The second is system (user interface) navigation, in which the user sends some input to the system, such as pressing a key, and the system responds in some way. (Finn and Lane, 1998, p. 3).

Communications is wholly different from information manipulation. Yet, the increasing popularization of the electronic systems blurs this distinction. Complex information systems either "interlocutor" with us or demand us to respond to them when we need assistance or data! These interactive human-machine processes replace many one-to-one human interactions of daily life.

On the other hand, each single electronic communication tool necessitates exactly the same behavior the information systems require us to do. For instance, when we alter a web site, we navigate across the system and make changes in the data. All interactive media ranging from three-dimensional virtual simulations to websites, or from interactive video installations to interactive televisions are considered as systems of interaction. The most fruitful approach would then be accepting that each system of communication entails a manipulation of the information system (Finn and Lane, 1998, p. 4).

If we consider this essential interrelationship between communication and information systems, it appears as a fact that the increase in the use of computer and computer networks in our time makes it an imperative to incorporate the science of information into all sorts of instruction in the schools of communication at universities.

Distance Education

Distance education aims to; make the education more democratic, and enrich the channels of education that feed masses with different needs. So called "classical" education is very far from satisfying this needed. It also aims individuals to keep educated throughout their lives. Because, in dynamic and modern society, individuals must follow up the changes that technology and informatics bring to their society. Otherwise, they become strangers or they feel so in their own society. Or they may become "marginal" of the society.

The basic mean of distance education is TV Broadcasting. This method has been widely, used all over the world. The advantage of this type of education is that you can reach everybody in the area of broadcast. On the other hand, it has an important disadvantage ie. It is a unidirectional education. That means you, as an audience, have no intervention on what is given. But in classical classrooms, lecturer and audiences interact with each other. For example, they may ask questions to each other. Despite this, the idea of Distance Education is very brilliant: People can be educated without having to attend the classroom.

Technology and informatics enabled education system to progress even further. At the first stage, the uses of computers were very limited. They were used to teach computer literacy (the computers themselves). Then at the second stage, with the growing usage and understanding of how computers work, they were started to be used as a tool, which can assist in education, for example; in mathematics, physics, and statistics etc.

At the third stage, which we are now witnessing, with the rapidly developing technological changes and information systems, the whole system of education is changing. Traditional methods of education have been inevitably replaced by methods utilising modern techniques. For this purpose, satellite broadcasting, teleconferencing techniques, Internet web and e-mail facilities, and interactive course tutorial and training programs, simulation techniques are widely used.

The Web provides a convenient method of managing a course with a centralised resource repository and increasing student-teacher interaction with electronic mail. E-mail has proven to be valuable to many business and academic organisations alike due in large part to the asynchronous communication nature of the technology and the accessibility it provides to others. Because e-mail is asynchronous, students can submit questions to their instructions at any time from anywhere, eliminating problems with schedule conflictsand increasing feedback outside of class. Researchers have found that the integration of e-mail into the classroom can increase student-teacher interaction as well as student interaction with outside sources such as business and academic institutions either locally or globally located. Further e-mail can increase student-to-student interaction which can lead to better learning. How does more interaction with others increase student learning? Cognitive learning theory states that feedback is necessary for students to develop and refine their mental models for a given knowledge domain. By increasing feedback through e-mail, students are given an opportunity to refine their mental models by accessing more information. In addition to e-mail, the Web now provides many new ways of supporting education. One of the most popular uses of the Web is to set up a course repository to efficiently distribute course materials to students. The web is also being used to manage student-driven learning

activities such as Web-based collaborative writing assignments and student developed interactive quest games and the like.[†]

A Case From Turkey

Turkey is one of the world's developing countries. It has a very young population around 66,000,000. 65% of total population is under the age of 30. Weighted average age of total population is 26. The ratio of literate people over total population is 80%, which is very low compared to the developed countries. In 1997, about 1,500,000 High School students attended the University Entrance Examinations at two stages:

1. Student Selection Examination (SSE), and
2. University Placement Examination (UPE)*

But only 318,347 of them could pass the two examinations and be university students. There are about 150 faculties at universities, either owned by state or private, all over Turkey. Their capacity is very limited.

To increase the capacity, two methods have been utilising:

1. Placing about 60% of the students who have passed the Student Selection Examination, at the Open Education Faculty (OEF) (582,000 students in 1997-98 Scholastic Year).
2. Establishing "Overnight Education**" for the students who have passed University Placement Examination, but have had low points, at some of the State Universities, which have suitable infrastructure.

This year the University Entrance Examinations system explained above has changed once again. For 1998-1999 Scholastic Year and on, there will only be Student Selection Examination and students will be placed at universities according to their SSE records plus High School records.

[†] Reining, B., The, J., **Supporting Higher Education with The World Wide Web**, Journal of Computer Information Systems, V:XXXIX, N:1, Fall 1998, p. 76.

* Only the students who have passed University Selection Examination can attend.

** From Monday to Friday, between 15:00 and 21:00 hours, after the regular education during the daytime.

The numbers above have been reached after the capacity utilisation. It can easily be seen that these numbers getting smaller and smaller, when we consider 21% growth rate of the population in Turkey.

In Turkey, Distance Education has been started in 1970s. In 1982, Anadolu University has established the first and the only Open Education Faculty in Eskisehir with 29,445 students. (Table 1)

Table 1. Number of students in different years.

Years	**Number of Students**
1982-83	29,445
1983-84	19,078
1984-85	31,048
1985-86	38,727
1986-97	40,545
1987-88	54,201
1988-89	64,287
1989-90	69,073
1990-91	67,129
1991-92	66,726
1992-93	109,560
1993-94	189,714
1994-95	118,895
1995-96	109,086
1996-97	129,896
1997-98	582,000*

Today, OEF has 129,896 students in three faculties: Open Education, Economics, and Business Administration. These three faculties have 15 departments with 2-year undergraduate education, and 8 departments with 4-year graduate education.

* Indicates the number of students who have registered to OEF until 30th August 1997.

In OEF, during each year, three examinations take place**:

1. Midterm Examinations in March,
2. Final Examinations in June, and
3. Complementary Examinations in September.

For all examinations, method of evaluation is multiple choice tests. Each of Examinations takes place in 75 city centres at the same time all over Turkey and Turkish Republic of Northern Cyprus. Only in the city of Istanbul, 280 schools and 3200 classrooms are used in each examination. 7,200 people are in charge of invigilation.

Comments Focused Around The Following Propositions For The Future of Universities

- The ability of the universities, in embracing changes, will provide them a central roll in the future economy.
- Competition and educational needs will be main incentives.
- Many lessons can be taken from the de-nationalization and commercialization.
- The most important points for the future university is to identity and analyze the economic power of their intellectual wealth, in order to continue their long term financial success and social value.
- In the world, specifically in our country, the percentage of the population is young, yet the number of the retired people in the developed world.

** In prespecified dates (at the weekends) between 09:00 and 18:00 hours.

The Potential of Universities to Assume a Control Stage Role

• In the western world, industrial revolution created newly educated entrepreneurs. For economic and military purposes, there has been an increasing application of university generated knowledge.

- It is a reality that university generated knowledge has great importance on social changes and economic progress.

- In the future, a highly educated work force will be critical to the economic success of tomorrow's international, national, regional, local and newly virtual World Wide Web communications

- Basic literary and numerically are no longer sufficient to assure an individual of personal economic and social viability, neither are that sufficient to enable a community's corporations to compete effectively on the world stage.

- In the future, individuals will have to be competent and comfortable in working with new technologies most certainly the level of readiness and will differ to a great extent in accepting changes and learn new skills. They will be aware of the systematic nature of their communities, therefore in importance of interpersonal skills and communications.

- The basics of the capabilities should be developed in our school children. Higher education's, must have and means to provide students with skills and tools to build knowledge, learning and social capacities for "world class" levels on alive long term.

Drivers For Change

- The trend towards a highly regulated but market controlled economy and a "meritocratic" social structure means that some individuals seem to want nothing more than marketable qualifications from a university rather than rounded education. This is perhaps because of the increasingly high cash and other personal cost involved in gaining a degree.

- In order to protect their market and if possible grow it, big and/or international companies are prepared to invest in research and education work force. Lowtech industries are either becoming third world operations at low wage rates or pursuing a high-tech agenda to provide sufficient added value to share holder expectations.

- Number of customers, who are in need of services of universities, are growing. Both students and the beneficiaries of academe based consultant services are prepared to pay well for the perceived added value that universities offer will tend to drive change strongly.

- Around the world government incomes are decreasing. There is pressure that comes from the citizens both to solve the social problems of the 21 St. Century (social exclusion, health, crime, transport and basic education) and to reduce levels of government expenses.

- Therefore, the funds allocated for higher education and researches are far from sufficient.

- It is more likely that these funds will continue be insufficient in the future

- Universities will have no alternative but to focus on implementing on market based strategies.
    - To accept non-public sector funding
    - Disciplined / targeted funding focus
    - Knowledge sharing
    - Suitable teaching strategies

- Technological partnership
- Creating new sources

- It is no longer important where individual lives and who are his parents that determine what an individual does for a living. The main determination is now individual's qualifications. Also where the university is located is non-important, especially when making post graduate education and professional training.

The Changing Nature of University Mediated Knowledge

• In the Western world, industrial revolution created newly educated entrepreneurs. For economic and military purposes, there has been an increasing application of university generated knowledge.

• It is a reality that university generated knowledge has great importance on social changes and economic progress.

• In the future, a highly educated work force will be critical to the economic success of tomorrows international, national, regional, local, and the growing virtual communities.

• Basic literacy and primary education are no longer sufficient to assure an individual of personal economic and social viability, neither are they sufficient to enable a community's corporations to compete effectively on the world stage.

• In the future, individuals will have to be competent and comfortable in working with new
technologies, although the level of readiness and will might differ to a great extent in accepting changes and learn new skills. They will be informed of the systematic nature of there communities, and thereof also in the importance of interpersonal skills and communications.

• Higher education must have the capability and means to provide students with skills and tools to build knowledge, learning and social capacities for attaining "world class" levels in the long term.

• Organizing transnational networks of information and communication can enhance the quality of education for all universities involved.

Global Expectations

In the future, businesses will need "more" new ideas and techniques to produce better services and products, which will differentiate them from their competitors. Universities, who cannot create such techniques, during this period of challenging economic context, will be disadvantaged.

In realization of intellectual capital, the universities will wish to obtain latest technologies to serve customers throughout the world. Yet they should not only focus on generating funds, but also be very concerned on serving social and cultural needs of society.

In the near future global universities will be created. The increasing economic value of education and research may lead these universities become commercial, to some extent.

The potential globalization poses a number of administrative, financial and cultural issues. The impact of these issues may bring unpredictable difficulties. Although individuals may have access to knowledge through computers, it is a necessity for them to get together to create a network and share personal experiences and benefit from lecturers. Although language difficulties may be solved technologically, English continues to be the common language, may even become more dominant and English learning should be emphasized.

An itinerant university model can offer to its students and customers the availability of an international pool of experts, databases, and services that are hard to reach otherwise.

Global Commercialization

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Commercialization in Higher Education

One important question that arises is; would higher education institutions turn into profit organizations if government stops funding? Or, are there alternative opportunities for future universities?

Steve Fuller (2003), the prominent scholar of social and scientific epistemology, in a recent article, discussed the university as a social technology for the production of universal knowledge, from the perspectives of philosophy and policy. He relates the contemporary disintegration of universality in the university to the desegregation of its three historic functions: teaching, research, and service. Our argument here is that the threat of market forces to future university autonomy can be reversed to a positive challenge.

High quality teaching deepens on high quality research where teachers convey their academic insights and knowledge to students. Teachers gain prestige (among more material benefits) from high quality research. Good universities attract good researches. There are significant synergies for those involved. The researchers themselves have strong incentives to monitor the quality of each other's work. The academics and their work become beneficiaries. The recycling of all profit into research is an appropriate application of the "virtuous circle" of research.

In contrast, commercial higher education organizations concentrate on teaching subjects that are readily defined. Subjects such as law or business are more amenable to commercialization than physics.

Both for-profit and non-profit institutions are very much likely to coexist in the future, too. But an itinerant university could combine and offer the services of both.

New Economic Constraints

• The trend towards a highly regulated but market controlled economy and a "meritocratic" social structure means that some individuals seem to want nothing more than marketable qualifications from a university rather than academic education. This is perhaps because of the increasingly high cash and other personal costs involved in gaining a degree.

• In order to protect their market and, if possible, to grow it, big and/or international companies are prepared to invest in research and education work force. Low-tech industries are either becoming third world operations at low wage rates or pursuing a high-tech agenda to provide sufficient added value to shareholder expectations.

• Number of customers, who are in need of services of universities, are growing. Both students and the beneficiaries of academe based consultant services are prepared to pay well for the perceived added value that universities offer will tend to drive change strongly.

• Around the world, government incomes are decreasing. There is pressure that comes from the citizens both to solve the social problems of the 21. Century (social exclusion, health, crime, transport and basic education) and to reduce the level of government expenses.

• Therefore, the funds allocated for higher education and research are far from sufficient.

• Universities will have no alternative but to focus on implementing on market based strategies such as;

- To accept non-public sector funding
- Knowledge sharing
- Suitable teaching strategies
- Technological partnership

- Creating new resources

- Collaboration with universities in different countries will be a basic asset for universities determining their overall competence in education and research.

The "Virtuous Circle" of University Cash Generation

A research undertaking generates intellectual capital. Historically the direct economic and social benefit of university research has been and indeed continues to be knowledge transfer through the production of new, well-trained and educated graduates. In this traditional model only indirectly, unpredictably and at several removes do research outcomes themselves eventually accrue economic value. This intellectual capital can, however, be converted into intellectual property by a university, which can then itself seek commercial exploitation for the university's direct benefit. A good commercial outcome by way of, for example, constancy fees, license fees or sale can both generate a further research opportunity and the cash to fund taking up that opportunity.

This commercial approach poses a risk that over time those departments that cannot or should not market their outputs for financial reward will become starved of funds and society will be the poorer as a result. This should be and can be guarded against in a considered and structured way.

- For the individual seeking for university or postgraduate education, the exception is that the cash spent and personal time given should provide economic and social advantage. Also students and others who provide finding should obtain tangible results.

- Graduates of the best higher educational institutions may return for programs of further study.

They may enter into long term knowledge sharing partnerships, which will strengthen the relationship between universities and graduates to the advantage of both in terms of vitality, relevance and finances.

Commercialization of higher education is a major concern of educationalist due to undue and unthinking relations. The civilizing and social role of universities is important glue that binds our society together. Educational institutions that can hold their own in a newly competitive world will have a

clear and forward looking purpose that it perceived to have value to society-or they will not be able to maintain their pre- eminence as thought leaders to whom other will look for ideas and quittance. The leaders will wish to be more disciplined and strategic in where they focus and yet more intensive, interactive and professional in how they go about their research and teaching. There are difficult and important issues of academic freedom to be addressed and essential liberties to be defended.

Future university will employ advanced human resources, financial operational, intellectual management processes and techniques in order to help its executive team to operate effectively in a more challenging environment.

Future Corporate Governance

One important question that crises is; would high education institutions turn into profit organizations if government stops funding? High quality teaching deepens on high quality research where teachers convey their academic insights and knowledge students. Teachers gain prestige (among more material benefits) from high quality research. Good universities attract good researches. There are significant synergies for those involved. The researches themselves have strong incentives to monitor the quality of each other's work. The academics & their work become beneficiaries. The recycling of all profit into research is an appropriate application of the "virtuous circle" of research.

In contrast, commercial higher education organizations concentrate on teaching subject which in readily defined. Subjects such as law or business are more amenable to commercialization than physics.

Both fore-profit and non-profit institutions will very much likely to exist.

Proposal For an Itinerant University

The objectives of this proposal can be summarized as constructing effective cooperation and communication globally between various countries in order to enhance their development and progress in an atmosphere of peace and understanding. A center should carry out the establishment of an Itinerant University contributed by the academicians, communicators, and ministers and bureaucrats in charge of communication, belonging to the concerning countries; and the formation of a central data-base, which should accumulate and process all of the data and information about the political, legal, cultural, economic, social, technological etc. situation, capabilities and potentials of various

countries to be used for the better understanding of each other as well as for all kinds of research, cooperation and business.

The short term objectives of the program should be establishing a thorough accumulation of information about the involved countries to be used for advanced research co-projects in educational, cultural, economic etc. matters, multilateral trade and agreements, and better understanding of each other.

The long-term objectives of the program should be to improve and expand the existing state of relations in all areas, to be progressed through international cooperation. The Itinerant University should play a dominant role for the achievement of this goal, by developing programs and research projects; convening sessions, conferences and seminars; publishing reports and researches; co-producing educational and cultural programs to be broadcasted in their respective television and radio channels; and contributing the central data base in the accumulation, storage and updating of data and information available. The basic process of its implementation could be summarized in two phrases as: "periodical seminars" and "permanent communication/Information systems and networks".

We suggest the establishment of the proposed center in Istanbul, under the auspices of Yeditepe University, Faculty of Communications. The location of Istanbul which is situated in the intersection point of the continents of Europe and Asia, would be the best possible place to establish such an international establishment serving multidimensional purposes at a global scale.

Since Yeditepe University is a polyglot university teaching in Turkish, English, French, German, and Italian the center would be able to be operated in these five languages. The center could be contributed financially and in other respects by the Turkish government and commercial/industrial circles for their benefit in utilization of political, economic etc. information, which they need. Their contribution could be: financing the construction of the necessary buildings and providing the equipment. The personnel should be provided by the Yeditepe University.

The Itinerant University should be convened every year in one of the member universities. This practice should cause the cooperation to be based on an equitable and democratic setting, giving all members to play a dominant role when their turn comes.

CONCLUSION

Higher education institutions are facing new pressures. Decrease in government funds, global knowledge market, and needs of customers for high quality education are of major problems for changes. Universities are facing severe problems today. Of changes law is administrated properly there may be a new visor. Future will be very positive for academics that grasp the opportunities presented by the New World

As will be for those universities world's academically strong institutions will be economically stronger and will provide better financial means for their academics. The pressures for increasing commercialization, customer needs, administrative burdens, will not be optimistic for institutions which cannot adapt themselves to the new conditions.

We may all regret the passing of a more gentlemanly and consensual age, which, for all its faults, is something that we all knew and understood. We do though live at a crossroads of history; the time of greatest change since printing was invented. For us there are huge opportunities to carry forward higher education into the new millennium as one of the brightest hopes for banishing ignorance and want, fostering civilization and bettering the lives of everyone on the planet. Let us go forward in hope and with enthusiasm towards an educated world.

As we work forward with all our hope and enthusiasm for an educated world, our target should be, in the new millennium, to raise our country's level to "knowledge society" thus open new faculties, departments, basic science branches, institutions, and research centers so that our universities will reach to the high levelers mentioned above.

For us there are huge opportunities to carry forward higher education as one of the brightest hopes for banishing ignorance and want, fostering civilization and bettering the lives of everyone on the planet. Let us go forward in hope and with enthusiasm towards an educated world. The Itinerant University model can become a major catalyst in activating the positive aspects of globalization, merging various national and regional experiences in the common pot of universal knowledge and disperse this synthesis all over the globe.

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