



COMPUTER AIDED EDUCATION / INFORMATION

Prof.Dr. Emin Doğan Aydın
Yeditepe University,
Faculty of Communication,
Chairman of Visual Communication Design Dept.,
Turkey.
eda@yeditepe.edu.tr

Dr. Neda Saraçer
Yeditepe University,
Faculty of Communication,
Dept. of Visual Communication Design, Turkey.
nsaracer@yeditepe.edu.tr

Introduction

Usage of computer in data communication has commenced in 15th Century. Most of the individuals in 15th Century were extremely ignorant. Moreover, the individuals were not able to travel to any place far than 9-10 km from their birth place during their life in said period. Just then, Gutenberg came up and invented the printing press machine. It is strange that the humans find themselves in a state of change today just like 400 years ago. As a matter of fact, you can live without having any knowledge about computer or without having a computer just like the humans who were able to live without being literate in 15th Century. However, an individual able to use computer is favorable than all of us also just like a literate individual was advantageous than the others in 15th Century.

As a matter of fact, the technology has not come into existence abruptly – this is very important for Turkey. Printed publications have come into existence in Europe and sprawled throughout Europe in the course of time. Elapse of centuries has been needed for printing books in some countries after invention of printing machine. Printing machine has appeared in our country after two centuries. Printing house of Müteferrika has worked during thirty years at intervals and could press 27 books like translations related with history, geography and medicine as well as dictionaries. However, the world has changed

irrevocably thereafter irrespective of what happened and who used it.

Today the same things are repeated. North American and European countries adopted computer usage as part of their daily public and the private enterprises and communicate data with each others within certain standards. For instance, the only institution through which the Government communicates with the public in Sweden is the post offices. Some countries including Turkey still think about how e-government should be and/or experience some samples via internet. The problem is not whether Turkey would be able to adopt e-government application but when it will acquire the standards of Sweden concerning the use of computers. “Time” is more important from many things. Let’s think about what we abide by in order to have a little bit more “time” during our daily life. Let’s think about time that we spend for compiling many documents from various institutions of the Government in order to obtain a passport as well as for delivering the same to the passport police and waiting the result thereof. When you want to get credit from any bank, also a lot of documents and in addition, the maiden name of your mother is very important. If you don’t know the maiden name of your mother, you have no chance!

The most important support of the human being in his race with the time when entering into 21st Century is computer. New terms gained currency by beginning to use these intelligent machines: a new scientific discipline called as “Information Science” has emerged. This new scientific discipline examines the communication between the humans and is used for the purpose of delivering the requested information to the user as soon as possible. In this sense, this new scientific discipline ensures easy access to the information collected in libraries and other info centers when needed. In contemporary world, the computers are not utilized only by banks, tax offices, producers, etc. They are also utilized for training, data communication and development of handicapped individuals, youngsters, blinds, old persons, retired persons and prisoners and therefore, the differences between the systems and the institutions can be reduced.

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Who are disabled Individuals?

When we say disabled individuals, the first thing that comes to mind is the individuals deprived of some physical functions usually. As a matter of fact, the individuals who are below a certain income/economic level are also “economical” disabled. We can roughly classify this group constituting the below of this economic level as follows: young persons, old persons, retired persons, immigrants, minorities, etc. These are also divided into categories between themselves. A considerable part of immigrants and minorities can not speak or speak a little Turkish. The education levels and skills of the majority of these persons are low. The percentages between them are not equal also.

The old and the retired persons have experiences as well as knowledge acquired for years. The old persons, the persons deprived of moving ability, mentally handicapped persons and convicts living in prisons constitute the disabled and handicapped class. In these groups that we have classified, the computer may be used in schools, libraries, hospitals, societies, clubs and houses as well as in prisons for the purpose of training via portable terminals or PCs. Therefore, it is ensured to provide job with more favorable possibilities for disabled and handicapped individuals. For example, a handicapped individual living in a prison will not experience any problem in finding a job and moreover, will be able to find a job with more favorable possibilities when get out of prison as a result of such training.

Satellite communication has a great potential so that it can change the structure of the society completely. In future, there will be many antennas that would ensure communication with post, television and computer via satellite in our country. As the oil prices increase, tele-conferences to be performed via wide screens, interactive training and new electronic networks will change the work and life styles. As we begin to see the samples thereof already, the obligation of placing the future offices in city center will be eliminated. Meanwhile, computers system structures and the usage thereof will also be different due to transmission connections having a high bandwidth.

We are running rashly towards a world of very high capacity channels, huge data banks and extremely powerful microprocessors developing globally. Communication satellite technology is misunderstood frequently. When considered with the telecommunications available in the world, there are basic differences in some certain aspects. The big companies located in countries allowing this issue are now planning how the satellite broadcasting would change their own telephone and data processing lines, word processing, mail, travel budgets, training and communication. Usage of new satellites via small global stations located in roofs and car parks will create a lot of employment opportunities. There will be changes in satellites, data communication protocols, terminal selection, end-user dialogue and distributed data design.

Satellite communication costs decrease day by day. Despite this fact, it is in competition with conventional communication. The communication institutions established many years ago consider the new technology as a threat. Telephone administrations in many countries display resistance against new technology and moreover, legal precautions are taken against satellite communication technology in some countries.

Disabled Individuals and Computer Aided Education

Question marks are formed immediately on how the technological developments will be utilized and especially the cost to be paid for utilizing from these technological developments. Home studies can be carried out thanks to new developing technologies in computer communications. Thus, the productivity increases much more. In addition, the programs aimed at children in TVs like “Sesame Street” are also intended for disabled individuals. It would be possible to provide services to the disabled individuals more and better than past by means of such programs. One of the important points that should be emphasized in terms of computer supported training is to classifying the individuals first. The group that we aim here is young, disabled, old and handicapped persons. We will emphasize the importance of the development of communication of



unemployed peoples, the methods to use to evaluate on time the job offers by making interview via computer, the progress made by the disabled individuals whose reading skills are insufficient and who delay in establishing communication on time since they have no moving ability.

As a result of the nations' jamming in the gap between being and not being computerized, their developments get limited instead of increasing. Thus, we will also explain how the computer will bring solution for communication problems in a country being in a dilemma between the processes of developing and being developed like Turkey.

Computer Aided Education (CAE)

CAE which was just launched in our country has been utilized in countries like USA since a period longer than thirty five – forty years for classifying and training the mentally and physically handicapped children and than in their primary and secondary education. Advantages of computer supported training in comparison with the other training system which has been implemented up to the present are as follows:

First of all, the learning rate is determined by the student directly. In another saying, the student asks the next information or question to himself when he gets ready. Second, it ensures a more directly and clear stimulation-reaction interaction. Thus, immediate feedback of information and conclusions can be realized. Third and last one, opportunity of repetition in desired number is provided without trying the teacher's patient or compelling the other students to listen the same things. In current applications, the students and the teacher convene in the same place on the same time and the teacher sees the students physically. As a result of combining CAE instructing technique with TV, the student will get the opportunity to study in his own house and his own terminal. The teacher will supervise, monitor the developments and make the necessary warnings via remote control.

In a developing country like Turkey, we can utilize from such computer aided training especially in backward regions. For example, the education in

villages having no school is ensured by transporting the children to nearest village having a school. This system has many disadvantages. First of all, the education would fail during winter times since the children would not able to go to the school due to difficult weather conditions. The solution thereof is to open a school. The education may be realized also via computer to be placed in village headman's office. The computer seems like expensive at the beginning when we consider in terms of cost amortizes itself in a short time. Opening a school in the village an appointing a teacher is considerably expensive actually.

Computer aided education has been implemented by SANDALZ for handicapped children successfully. Even in 1970's, Thompson and Johnson have stated that CAE extends the attention span of the student and increases the interest against the teacher.

Time Sharing, Remote Data Processing and Economy "Based on Information"

These three concepts are three important trends which will influence the employment opportunities in future. Our country intends to become an "after industry" community day by day diverges from the economical model where the goods are produced with manpower gradually and progress towards a service or white-collar worker based economy increasingly. In such economy, production, transfer, processing and usage of information dominate increasingly. According to Daniel Bell, the locomotive of after-industrial community is constituted by information while the locomotive of industrial community is constituted by the production of energy. The factor determining the class structure of a community is the fact that its decision making process bases on information. This is a tragedy for the humans having disadvantages in training. The works requiring physical skills decrease anymore.

On the other hand, CAE creates a lot of opportunity for having the education and the skills required by "white-collar" works for these persons. Today, majority of medium- and full-scaled employers have transformed/are transforming nearly all of the information based transactions to automation. Filings

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and records kept manually once upon a time are handled with keys today. The computer technology has changed during recent years so that the headquarters of many company use time shared distributed computer systems anymore. In another saying, the individuals performing their jobs with computer work in a place away from the actual business place – i.e. in their houses or in another work center-today. Computer and data communication technology would develop so fast that many bookkeeping operations or monetary transactions would be completely performed via electronic transfers between the computers within next several years. For example, the community would become a “moneyless community” where the dealings between the buyer and the seller would be realized via computer instead of writing or paying money in future. Such trend is already a matter in question for the developed regions. For example, big cities like İstanbul, Ankara and İzmir.

Support Network for Old Individuals

In general, it is believed that the old individuals live in old age asylums. However, the old individuals live either alone or with the other individuals in fact. The old individuals live in a fright and alone since they are not able to move physically enough as well as deprived of sufficient service.

CAE may be used for meeting the old individuals with local support personnel. For example, if no news is received from the old individuals living alone, they may be called with phone or their homes may be visited for safety reasons. Furthermore, a specialist physician may visit the old individuals in certain days of the week.

Support Network from Old Individuals

The old individuals may publish a magazine between themselves. Such magazine may be monthly or weekly. Interesting memoirs pertaining to different profession groups, advices and methods for living more practically during the retirement span may be included in such magazine.

The retired individuals in developing countries like Turkey generally work in additional jobs since they

live under difficult conditions economically. Their opportunity to find a job would be higher thanks to job postings to be published in such magazine. Furthermore, the social activities of the old individuals may be reflected in such magazine and participation of the other individuals in the same age group to these activities may be ensured. Experiences of the retired teachers may be utilized for education matters. Many old individuals have experience and skills as educator and social service worker. However, their physical conditions prevent them from continuing their works. The individuals having energy and time would continue their works by means of computer terminal in their homes.

Consultation System

None of the local national public or private sectors has intended to establish an integrated system for special purpose in big metropolitan regions currently. However, many public and private establishments in our country prepare guidebooks, catalogues, bulletins, almanacs, introductory newspapers and research reports. But these become obsolescent immediately after they are printed and many of them can not be utilized. Computer aided conference system may create an authentic opportunity including the changes and information for all these services and programs. According to this system, each institution may have one terminal minimum. Conference system may be used in the manners given hereunder:

- 1 – The guidebooks of these institutions may be renewed uninterruptedly. Services provided by each institution as well as the definition thereof may be included therein.
- 2 – Applications for messaging system may be accelerated and simplified.
- 3 – Conference system may be used by old/young individuals, working persons or the administrators of the institution and short time conferences about various professional matters can be carried out.

Such conferences may ensure experience and opinion exchange between the professionals working in any activity filed. For example, a postgraduate student making research or professionals may initiate



a number of seminars related with their studies. They may communicate their studies, activities that they have performed for their institutions and success thereof or problems related thereto to the others. Such seminars may be a system in which the individuals working in various institutions, the old individuals mentioned above and the researchers may collect their experiences.

Disabled Individuals Living in Prisons and Computer Aided Education

Does the fact that number of prisons in our country increases day by day ensure us to live with a higher feeling of confidence? Maybe... When we have a problem we try to solve them with the help of police forces. Of course, the criminal ends up in prison when he is arrested. The press has tried to mold public opinion about the fact that the fundamental rights of some political criminals are revoked. Visiting hours of the political criminals have been restricted and they have been permitted to meet only with very close relatives in certain days. Duration of the public open visits in special days like holidays has been limited to 15 minutes.

It is tried to train the petty criminals with the courses like carpet and handicraft manufacturing and provide them with the opportunity to have a profession in workshops of various prisons. Prisoners dream of finding a job after release. Can the computer be utilized for training the criminals? Despite this seems like a dream in Turkey today, it is possible. For example, a prisoner who passed the exam for Open Education Faculty may continue his education via computer easily. He may allocate his free time in wing for his education.

There is an experiment on this issue realized in Cadwel Penitentiary and Essex County in USA. The levels of the classes have been determined at first stage and than the trainings have been proceeded with. The experiment commenced with mathematics, reading and writing has been continued with biology, history and foreign language.

The main purpose in computer supported training is the changes that may occur in behaviors of the prisoner. When a positive change is ensured, the

prisoner is paroled and he can find a job easily by means of credentials. This is the status of the prisons in USA in terms of finding a job and training. Computer can be utilized also for the prisons in Turkey.

Communication/Education for Underdeveloped Regions

Today communication can be ensured by means of satellites. It is also possible to store the messages via computer as well as to transmit more information to a wider area by means of computers. Today the satellites turn towards tele-transactions. In past, radio signals were influenced by the weather conditions and could not reach at intended place. For example, the farmers who work depending on weather conditions were affected from this matter since they were not able to learn the weather forecast from radio. Today, even the radios are not needed due to TVs. This problem can be solved by means of a computer to be placed in village headman's office. We can realize the communication in underdeveloped regions by means of developed systems of the modern world. We may ensure the communication by establishing a computer station in each village. We need a long time for this at the beginning.

We may utilize from computerized communication especially in East Anatolia and Southeast Anatolia. When the relation between the villages is disconnected during winter time due to geographical position, such connection would be established by means of communication means. Communication covers two special tele-methods. These are telephone and TV. In addition to such network we may utilize from computer as communication and training means. At the first stage, we may utilize from computer in training the farmers. As known, Turkey is an agricultural country which could not complete its heavy industry development. Majority of the people provide their earnings with agriculture and livestock farming. If the farmers are trained well, the productivity to be obtained would increase proportionally. Parent schools are opened in big cities in order to provide information about bringing up children. But the parent schools can not be

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opened in rural areas. Parent candidates may be trained via computer in rural areas. Establishing a communication, data processing and training network via computers is not as expensive as it is supposed. Today the computers have the same status with the color televisions which have been deemed as extremely expensive and luxury when they have been first launched in past.

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