

## **E-Education in Iran**

*M. Tavakol<sup>1</sup> (PhD)*

### ***Abstract***

One of the areas in which information and communication technology (ICT) has had great and worldwide achievements is education. Different countries have set up, explicitly or implicitly, the plans, priorities, and agendas of their own. One of the concerns of the Iranian government in the last decade has been the application of ICT as a component to realization of the national development and as an instrument to promotion of the quality and the quantity of social services and, as a result, the promotion of social life. Such a national ICT agenda is called TAKFA. In this agenda, among the priorities has been the Education Sector. In this paper, the major projects in this regard such as "provision of educational content", "establishing an inter-school network ROSHD", "Production of multimedia content of text books" and "developing e-learning software for technical and vocational training" are reviewed. In the next step, their aims and targets are compared with the concrete achievements, i.e., with what is actually realized. Finally, a sociological account of what has happened and is happening are presented.

***Keywords:***E-education, ICT, TAKFA, MONDIALOGO, IEARN, ORACLE, Information Society.

### **Introduction**

In the new millennium, communication technology has extended its presence throughout the whole world and has proved its heavy effects on living dimensions of the human being. This phenomenon with a considerable speed has also affected the expectations and demands of individuals, and created new needs and requests. Education, which is also a basic need, is not exempted from this, and the expansion of information technology has been considerable in this area in many countries. By going through the statistics and information about the rate of expansion of information technology in education in different countries, we find out that in many of them, both the developed and the developing, there is a comprehensive plan for equipping their schools with computer, internet, and IT facilities.

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1. Faculty Member of the Sociology Dept, Tehran University

Regarding to the increasing expansion of information technology and its consequences on life of human beings and societies, introduction of the students and teachers with this technology, as well as proficiency in utilizing these tools, are essential. For this purpose, the students are especially trained to get ready for living in the so-called Information Society. With the development of ICT, both developed and developing countries have employed these technologies in education; but there has been a difference in their objectives.

While in developed countries the objective in the application of ICT in education has been the diversification of educational methods as well as providing a new framework to promote the quality and depth of educational programme, in the developing countries, ICT has been, at best, an instrument to extend the general education and close the physical and geographical gap especially for rural and discrete areas.

The digital education in most of the developed countries and even in some of developing countries, is aimed at training future teachers with the following attitudes and capacities: (1) to recognize the needs of the Information Age for new learning skills, (2) to consider schools as the social learning centres, (3) to think more, as a major role, of learning than teaching, (4) to benefit effectively the use of ICT in teaching-learning processes, (5) to know virtual learning environments and perform its role efficiently, and (6) to exploit the multimedia material. To realize these, as well as other purposes, plus the national ICT-based educational systems, in recent years there has been an extension of global, international and regional networks based on ICT; to name few, we should mention IEARN, ORACLE (Think Quest), and MONDIALOGO.

International Education and Resource Network (IEARN) is a non-governmental organization comprising more than 20,000 schools and youth organizations in more than 115 countries, from Afghanistan, Albania, Angola, to China, South Korea, Italy, and the USA. It facilitates teachers and students to work with each other on-line through the internet and other new mass-media. More than 1,000,000 students connect daily to the participatory projects of this network. More than 150 projects have been formed at IEARN to fulfil the

teachers and students' educational needs, through which students and teachers can participate and communicate.

ORACLE (Think Quest), like IEARN, is a non-profit entity. It started its work in 1996 and is involved in about 60 countries and is in contact with more than 7000 websites. It includes countries like the United States of America, Australia, up to Lesotho, Malaysia, Mali, Netherlands, Canada, France, Gabon, Ghana, Germany, India, and Indonesia. ORACLE defines its aims to be the promotion of critical thinking, expansion of team-working, interaction, innovation, technology promotion, self-direction of students, and promotion of intercultural understanding. It operationalizes these aims through: (A) learning projects, (B) introduction of internet competitions, and (C) creation of library of students' research in different fields.

MONDILOGO seeks to increase intercultural dialogue, understanding, and interactions between the young generations throughout the world. This global network was commissioned jointly by UNESCO and DIAMLER. The goal of this network was announced to be the increase of awareness for cultural diversity, and promotion of intercultural exchange among the youth worldwide. For this purpose, MONDIALOGO has organized different global and regional competitions and events, publicised and reported by websites and internet networks.

### **ICT and Its Impact on Education in Iran**

The imperatives of the age of knowledge and information and the need to follow the achievements of information technology in the country led to government's decisions to invest in rapid expansion of ICT. It was understood that ICT can demonstrate a dramatic impact on achieving specific social and economic development goals as well as play a key role in broader national development strategies. The national ICT agenda in Iran was drawn out and called "TAKFA". TAKFA was considered to be the Iranian Road to Knowledge-based Development.

The general framework of National Information and Communication Technology Agenda "TAKFA" consisted of five major parts, namely:

1. Infrastructure: Access, Security, Data Centres, Regulations, and Law.
2. Commerce and Economic Services: e-Commerce, e-Banking, e-Money, etc.
3. Government Services: e-Services, e-Governance, and e-Government.
4. Human Resource Development, Cultural and Social Programmes: HRD and e-Education, Culture in Digital Environment.
5. Employment and Industry: Industrial Development, High Tech Jobs, Industrial Parks, and SME Development.

The Iranian Education Ministry also prepared a charter to guide reforms in Iran's education system with the application of ICT as one of the pillars. The importance of an education suitable to the needs of individuals and society is felt today more than ever before, as the world linked by information networks requires a work force that knows how to use technology as a means to enhancing output and innovation.

One of the obstacles to applying ICT in education is a centralised system that prescribes a uniform inflexible curriculum for every course topic and for all students, whether urban, rural or nomad, with any talent, interest, and socio-economic background. Thus, every action must be decided at the top and implemented nationwide, and it can stop after encountering an unforeseen obstacle. In such circumstances the use of ICT in education is possible only at a minimum level such as a course subject.

In addition, due to centralisation, the ability to plan lessons and conduct the learning process, considered one of the crucial skills in using technology for education, is not developed among teachers. The state sponsorship of all activities in producing academic material and software hinders the growth of the private sector in this field, whereas one prerequisite for the effective use of ICT in education is active participation of the private sector.

Education faces two main difficulties: (1) non-cultivation of logical thinking, cognitive innovation, the spirit of investigation and skill of managing the learning process, all due to deficiencies in teacher training programmes and unsuitability of working conditions for

promoting creativity in teachers; and (2) low teacher motivation caused by strong centralised management governing administrative relations, low salaries, a sense of discrimination against teachers, and the low status of the teaching profession.

Due to the key role of teachers and middle managers in the success of programmes for the use of ICT in education, a special solution was devised to alleviate this situation. The Office of Planning for the Development of ICT in Education has employed expert managers, developed operational programs, and defined executive projects. The following projects have been implemented or are in process of development:

1. Project of Research and Development: In order to preserve the dynamism of information activities and technology, three study groups were charged with reviewing the country's educational system and reorganising it with regard to modern educational approaches to information technology: comparative study group; analytical study group; and development study group, which work in collaboration with relevant specialised universities.

2. Project of Personnel Training: A course in basic concepts of IT, e-mail, word-processing, etc., which is general knowledge for the information age, was supposed to be offered for all teachers, experts and students in different phases. In the first phase, in 2001-2002, about 30% of high school teachers, 50% of art students, all teacher training instructors, and half of the contracted experts were covered. It was conducted from the beginning of the new academic year for all fields of high school. Launching this project in the first year resulted in training 120,000 teachers and specialists. Complementary courses were also provided for diverse audiences including:

1. Teachers: in this course teachers were supposed to produce knowledge, using modern educational approaches (discovery, project-based). They got acquainted with cyberspace education, to break the monopoly of class-room learning, consult their counterparts the world over on their lesson plans and methods, and create an interactional mode of learning.

2. Schools' technology officials: specialised courses about the Internet and site maintenance were provided for school technologists, and implemented in schools equipped with computer sites.

3. Curriculum experts: in order to acquaint them with academic planning and text-book preparation, a special advanced course featuring specifications of lesson plans based on the world-wide web and Internet education was developed. Experts attended these courses and after completing the course, they could implement such courses themselves.

4. Establishing computer laboratories in 6,500 educational units, 60 teacher training centres and 40 technical institutes are results of the project for equipping schools with computer labs in the first year of its implementation.

5. The project for creating electronic content with the contents offered on the world wide web (WWW) was divided into three sections: information (providing data to diverse users including the Education Ministry personnel, schools and teachers); services (providing on-line services such as student registration, purchasing books, transfer of teachers); and educational resources (dealing with electronic books and audio-video clips, and, animation based on learning concepts of textbooks to facilitate learning and teaching).

6. The project for a National Network of Schools began in 2001. This project contained three layers of school, district, province; data sites, and the capital. Its audience comprised students, teachers, head masters and parents. This network was designed through the collaboration of domestic and foreign experts, connecting some 1,200 high schools in 6 provinces.

In this paper, we consider ICT application in education in Iran in three dimensions, namely teacher training, inter-school networking, and educational content.

### **Teacher Training**

As far as teacher training is concerned, two different programmes can be considered a) re-education and updating of teachers knowledge and b) ICT education for teachers, namely, teaching and training them to use ICT services. In Iran the latter has been practically invested on. To

say this does not mean that officially the ICT application had been restricted to it. In fact TAKFA had declared the objectives of ICT application to education to be: promotion of quality in teaching and learning, establishment of a comprehensive system to provide education services, promotion of quality in access to education, and improvement of management system. But, in reality, the area we indicated has attracted more practical attention.

In practice, two main projects, out of the following six projects, have been, with different degrees, operationalized: (1) teachers training for general skills; (2) equipping schools with computer laboratory; (3) e-content production; (4) National network of schools (ROSHD); (5) intelligent school project, and (6) ICT mobile laboratory.

Regarding the first project, a relative achievement has been realized. The Ministry of Education had a 3-level programme: general, intermediate, specialized. The first level aimed to provide the elementary computer-literacy. In the first phase of this project (years 2002-3) some 70000 teachers and 7000 heads of Schools Computer Labs passed the courses dealing with basis of operating system, IT-based learning, and training to use internet.

In the following 2 years the training continued so that the documents reported that some 42 million persons/ hour training had been provided. The second level programme, training to produce e-content, was executed for a limited percentage of teachers, experimentally. The third level, long-term specialized courses, yet to be provided with the cooperation of universities.

In the beginning the programmes were doing quite well but later with handing in their execution to the private sector at provinces, the plan was slowed down and performed incompletely and discreetly.

However, regarding teachers' IT training here are two important ones; (a) IT Training for Teachers (Managed by the Ministry of Education and Training) with the following goals: 1. general technology literacy, 2. vocational literacy, and (b) Vocational Training of Experts and Trainers of ICT(Managed by the Ministry of Labour and Social Affair) to promote the level of technical skills and know how of the experts on the ICTs.

The following vocational and professional courses were designed and offered. (1) Primary and advanced ICDL training courses. (2) Training and teaching of office automation and educational software automation. (3) Teaching and training of Microsoft courses (MCSE). (4) Training of Oracle.

### **School Network**

The school-network, initiated in 1998, had the following as its objectives: (a) Establishment of quite well-equipped computer sites at selected schools. (b) Organizing basic IT courses for windows, word, power-point, etc. (c) Organizing research groups at schools to encourage team-working with the use of Internet. (d) Establishment of school-net portal for internet connection. (e) Preparing international cooperations between schools and teachers worldwide through IRAN-IEARN extension.

In this line, with these objectives the National Network of Schools, ROSHD, was introduced to strengthen and promote national IT based course-work programme. Within this subarea the following projects were defined:

(a) Creation of Computer Based Laboratories at Schools (Managed by the Ministry of Education and Training). The decision was to run the project preferably at high schools, later at secondary, and finally at the primary schools. By implementing this project, the ratio of computer per secondary level student grew from 1.295 to 1.60, and training centers accessed to 6950 sets of PIV, 25800 PIII computers, 6550 printers and 6550 scanners. And

(b) Future Schools (Managed by the Ministry of Education and Training); planned to work on Intelligent School and its security, content, interactive-environment, educational management, intelligent evaluation.

### **Educational Content**

As far as content production is concerned, two major digital productions were made available: (a) the supply of school texts in PDF form; all official texts at primary, “guidance”, and secondary levels are accessible from the site and can be printed, (b) it is planned

some textbooks to be supplied in CD form. Each of these CDs contains the whole content of the text which is meant to be self-teaching, plus the Questions and Answers as well as virtual lab. In fact the CDs are planned to be interactive educational software. In this area the major projects were:

(a) Quantitative and Content Development of Roshd (inter-school) Network, (Managed by the Ministry of Education and Training). Some of the online services of the network were defined to be as follows:

- News
- Entertainments
- Scientific articles
- National- Religious occasions
- Mathematics Olympiad

(b) Generation of Textbook Content Based on Websites and Multimedia, (Managed by the Ministry of Education and Training). It was planned to work on how produce audio-visual kits, e-books, animations, and other educational means to facilitate understanding, learning and teaching of relevant text books.

(c) E-learning Software for Vocational Training Organization of IRAN (Managed by the Ministry of Labor and Social Affairs) with the following aims:

- Management of affairs of Trainee, Trainer and the Principle,
- Referral of trainees and applicants to e-learning website,
- Posting syllables of courses and contents (off-line and on-line),
- Assessment and examination of students,
- Possibility of virtual class attendance.

(d) Provision of Educational Content, and ICT Skills (Managed by the Ministry of Labor and Social Affairs); through global experiences, domestic research and studies, indigenous identifications, and job market demands, this projects was to create 200 occupational standards in the field of ICT.

### **Conclusion and Sociological Explanation**

We passingly went through the major projects of Iranian educational projects, planned and partially come into operation by the government. However, a country with some eighteen million students

does need to do much more, with the advent and introduction of ICT facilities available to the country, the general aptitude of young students, the wide-spread articulation of need for change in education, and the socio- economic reality and potentials.

But, if this is to be realized, it depends on the introduction of a new educational system, to surpass the traditional education. Without that, ICT application to the Iranian educational system remains at a ceremonial, lucrative, and superficial level. It is true that in recent years the pre-university education in Iran has been allocated with an amount more than other sectors, including the Higher Education, but because of the lack of any deliberate and especially comprehensive plan, the major part of the budget has gone for buying hardware, and very little to multi- media content production.

It is a fact that the mass of youth and school children have approached technology to learn in a self- teaching style what they could not learn from the official classic schooling. This mass is getting bigger and bigger in size and with increasing depth and width of general knowledge and at times even specialized knowledge. It is not an exaggeration if we say that the youth has gone ahead of the system. The implications and consequences of such a phenomenon cannot be easily by-passed in the future. This generation is not satisfied with traditional styles and methods, the classroom and teacher and individual styles and dogmatic obedience. Also, this can heavily influence the future changes not only in education but in wider society. These necessitate the change in policy. But, the latter can go nowhere in a bureaucratic and manipulative Administration.

The major factors influencing the stagnation or lack of enough speed and coverage of ICT- based education in Iran are:

- 1.Lack of a comprehensive ICT- based educational policy that government is practically committed to it.

- 2.The “general poverty” of IT-literacy among policy-makers, managers, and teachers and students. As a result the non-structured and partial introduction of IT into schools will act as an obstacle for even future development.

- 3.The dominance of conservatism over Reformism- including in Education Sector. In recent years it has been shown to be hard to dare

and courage both by policy-makers and the actors at different levels of education system, to decide and implement educational changes required for the ICT applications in education.

4.Lack of complementary and orchestrated software, hardware, brain-ware, and management. The result of such a situation which has been occurring widely has resulted in a failure to achieve even the minimum expected from ICT introduction in schooling.

5.Absence of culture of cooperation and team- working; among schools, and between schools and administration. This is so, while with the shortage of funds and manpower it is imperative to put up collective efforts.

6.Parallel networks and programmes in questions regarding ICT application in education. This leads to the existence of setting up different digital systems supposedly aimed at one and the same objective.

7.Lack of certainty and confidence in projects initiated by education administration. Oscillations, seasonal support or retraction, and the lack of understanding on the side of education authorities are claimed to be the reasons.

8.Oversensitivity and control over educational matters by the political system. This extends to all realms of organizational, managerial, communicational, and content-production matters. It involves ICT- based educational questions as well. These factors should be added to other realities like:

9.Lack of basic needs of ICT; still in most of schools in the country.

10. Shortage of enough software in Persian.

11. Inefficiency of communication backbone and networking of the country.

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