

ICT in Education in Tunisia

by Amr Hamdy
June 2007



Source: *World Fact Book*¹

Please note:

This short *Country Report*, a result of a larger *infoDev*-supported *Survey of ICT in Education in Africa*, provides a general overview of current activities and issues related to ICT use in education in the country. The data presented here should be regarded as illustrative rather than exhaustive. ICT use in education is at a particularly dynamic stage in Africa; new developments and announcements happening on a daily basis somewhere on the continent. Therefore, these reports should be seen as “snapshots” that were current at the time they were taken; it is expected that certain facts and figures presented may become dated very quickly.

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Overview

Tunisia has committed to the institutionalisation of ICT in all aspects of the economy and has played a leading role on the global level by hosting the second phase of the world summit on the information system. To introduce and sustain the integration of ICT in education, Tunisia has implemented a multi-dimensional strategy based on modernising its infrastructure. Education is an important sector affected by this policy where a major restructuring took place and reforms have taken into consideration the integration of ICT. Training and professional development of teachers and administrators were also considered as keys to successfully implementing ICT at all stages of the teaching-learning process. Distance education opens new horizons and constitutes a rich field of research, innovation, and creation that still needs to be reinforced and further developed.

Country Profile

Tunisia is considered to be one of the most liberal nations in the Islamic world, especially in terms of the rights accorded to women. The country has been influenced throughout its history by waves of immigrants – primarily Phoenician, Arab, Berber, African, Turkish, and European – giving rise to a unique culture.

Tunisia is a republic with a strong presidential system dominated by a single political party. The country has a diverse economy with important agricultural, mining, energy, tourism, petroleum, and manufacturing sectors. Governmental control of economic affairs, while still heavy, has gradually relaxed over the past decade with increasing privatisation, simplification of the tax structure, and a prudent approach to debt.

Table 1 provides some selected socio-economic indicators for the country.¹

Table 1: Socio-economic Indicators: Tunisia

Indicator	
Nationality	Tunisian
Ethnic groups	Arab 98%; European 1%; Jewish and other 1%
Religions	Muslim 98%; Christian 1%; Jewish and other 1%
Languages	Arabic (official and one of the languages of commerce), French (commerce)
Population	10,175,014 (July 2006 est.)
Population growth rate	0.99% (2006 est.)
Literacy	Male: 83.4% Female: 65.3% Total population: 74.3% (2004 est.)
GDP (US dollars)	\$32.95 billion (2006 est.)
GDP (US dollars)	\$8,600 (2006 est.)
Labour force	3.502 million
Unemployment rate	13.9% (2006 est.)
Telephones - main lines in use	1.258 million (2005)

Telephones - mobile cellular	5.681 million (2005)
Radio broadcast stations	AM 7; FM 20; shortwave 2 (1998)
Television broadcast stations	26 (plus 76 repeaters) (1995)
Internet users	953,800 (2005)

The Education System

Since the country gained independence in 1956, Tunisian education officials have been working on an education system that responds to the needs of a rapidly developing country and aspires to be in the vanguard of technological change. In fact, education ranks number one in the priorities of the country, and more than 20% of the Tunisian government's annual budget is directed to education. Education is delivered both in public and private institutions. It is organised as described below.

Pre-school education

Pre-school is oriented towards children aged three to six. It aims at preparing children for school, building their capacities for self-expression, stimulating their creativity and facilitating their integration into their social environment. There are both municipal and private kindergartens.

Basic Education

Basic education (BE) is compulsory. It is divided into two distinct stages: six years of primary education (also referred to as first cycle of BE) and three years of preparatory education (or second cycle of BE). Students are awarded the Diplôme de Fin d'Etudes de l'Enseignement de Base.

Secondary education

Secondary education lasts for four years and is aimed at preparing students for university-level studies or entry into the workforce. It is divided into two stages: one year of general education plus one year of pre-orientation, and two years of specialised education. It culminates in the Baccalaureate Diploma, a passport to higher education.²

Table 2 provides data for basic and secondary education levels³

Table 2: Basic and Secondary Education Statistics

Year	2004/2005	2005/2006
Number of students of first cycle of basic education (public)	1.17 million	1.12 million
Number of secondary education students (public)	508,790	503,531
Number of secondary education teachers (public)	29,341	--
Number of secondary education institutions (public)	428	417
Average number of secondary education students per class (public)	31.6	30.1
Number of students of second cycle basic education and secondary education (private)	51,779	58,660

Number of teachers of second cycle basic education and secondary education (private)	8,371	9,130
Number of institutions of second cycle basic education and secondary education (private)	268	281

Higher education

Higher education is mainly provided by universities and the numerous higher institutes and schools. Institutions of higher education come under the responsibility of the Ministry of Higher Education, the Ministry of Scientific Research, Technology and Development of Competencies, or the ministry most appropriate to their specialty.

In 2005-06, there were 178 public institutions of higher education including 13 universities; 24 higher institutes of technological studies, and six higher institutes of teacher training. The remaining institutions are subject-specific and operate under the aegis of one of the country's universities. The Ministry of Higher Education supervises 155 institutions, and 23 are under the co-supervision of this ministry and other ministries. In addition, the Ministry of Higher Education recognises 20 university-level private institutions. The number of enrolled students is constantly rising: in 2004-05 there were 326,734. In 2005-06 there were 346,000.

In parallel with the growing number of students and institutions, reforms are being adopted to meet new challenges. For example, a degree structure based on the new European three-tier model of bachelor's, master's, and doctoral degrees was started in the 2006-07 academic year. This reform is known as the L.M.D: licence (three years), mastère (two years), doctorat (five years). The new academic credit-hour system is meant to give students greater flexibility in designing their study tracks, while allowing them to earn and transfer credits between institutions both domestically and internationally.⁴

Non-university level post-secondary studies (technical/vocational)

Higher technical education is mainly offered in higher institutes of technological studies where studies last for two-and-a-half years. Studies come under the responsibility of the relevant ministries. A vocational/technical diploma is awarded at the end of the course.

Continuous/ongoing training

Tunisia has regional centres of education and continuous training for teachers of primary and secondary school. There are also centres of education and trainer training that provide training for school inspectors, pedagogical counsellors and teacher trainers. The Higher Institute of Education and Continuous Training offers graduate and post-graduate courses for all education stakeholders who seek further education and degrees.

ICT Policies

The government policy towards the integration of ICT in the Tunisian education system is clearly stated in the 2002-2007 policy, Reconstruction of the Tunisian Educational System, where the mastery of ICT is emphasised as necessary to support

professional, innovative, and creative teachers. The policy is defined in operational terms through the Educational Act⁵ issued on July 23, 2002, which states that it is the responsibility of the Ministry of Education and Training and the Ministry of Higher Education to implement the policies related to education, while the president usually decides on the strategic issues. Each minister presents his programmes concerning his ministry to the president who studies them and either agrees or disagrees with the minister concerned. Each ministry has its own budget to equip the institutions under its responsibility, to train its staff and to pay its employees.

The policy also emphasises the importance of ICT represented in equipping schools, introducing ICT as a subject and providing teacher training. Article 2 states that programmes should take into account the training of learners in the use of ICT as a tool to acquire knowledge and self-training. This is reflected in the notion of:

- Training rather than teaching, an approach that reflects an alteration in the teacher's role (i.e., the teacher is no longer the only source of information.)
- Computer science as one of the subjects studied in primary schools and as a compulsory subject in the seventh form (first form of second cycle of Basic Education) with a frequency of one session per week

Both the Tunisian Virtual School and the Virtual University of Tunis were launched as government initiatives, reflecting the high degree of interest of political officials in integrating ICT in the education system. The creation of these virtual institutions was mandated in both the policy and the Education Act.⁶

Infrastructure

To meet the challenges of technology mastery and the integration of ICT in all education sectors, Tunisia has implemented a multi-dimensional strategy that focuses on:

- Modernising its infrastructure
- Establishing a favourable legal framework to facilitate the equipment of all institutions
- Restructuring its education system taking into account the requirement that all students acquire ICT skills (e.g., teaching computing from basic education and embedding ICT into the curriculum)

To achieve their objectives, both ministries launched a comprehensive ICT-oriented training programme, delivered through both conventional and distance learning methods that targets all education stakeholders and includes the development of networks to disseminate best practices and encourage a digital culture.⁷

Computers, smart boards, video projectors, and digital cameras are some of the technology tools used to expand the scope, scale, and quality of learning.

Table 3 provides some figures and statistics about ICT infrastructure, connection to the Internet, and distance education.⁸

Table 3: The Evolution of ICT Infrastructure

Year	Infrastructure
1984	<ul style="list-style-type: none"> • Creation of the INBMI (public Internet service provider + maintenance + training)
1985	<ul style="list-style-type: none"> • Beginning of generalising the use of computing in educational institutions
1988	<ul style="list-style-type: none"> • “Internet for All” project
1990	<ul style="list-style-type: none"> • 100 secondary schools equipped with computer labs • Office automation training programme for teachers
1998	<ul style="list-style-type: none"> • Connection of 30% of the institutions • 1,000 teachers had free Internet and e-mail accounts
2000	<ul style="list-style-type: none"> • 100% of secondary schools connected to Internet
2001	<ul style="list-style-type: none"> • The president ordered the connection of all educational institutions to Internet and the introduction of ICT in education • All high schools and research centres connected to the Internet
2002	<ul style="list-style-type: none"> • Launching of the Tunisian Virtual School
2003	<ul style="list-style-type: none"> • The Virtual University of Tunis established as a government initiative
2006-07	<ul style="list-style-type: none"> • All primary schools connected to the Internet • 20% of courses offered through e-learning

The process of equipping secondary schools with new computing spaces is ongoing in order to teach computing and increase capacity for the integration of ICT in education. In 2004, there were 22,000 computer (0.28 computers for every class), but by 2006 there were 57,000 computers (0.71 computers for every class).⁹

It is foreseen that the number of educational Web sites by the year 2009 will increase to 4000 (from 1,300 in 2006). As well, the number of trained teachers will increase to 80,000 (from 60,000 in 2006).

All higher education universities and institutes are connected to the Internet by the El Khawarizmi Calculus Center, which is the official public Internet service provider (ISP) to higher education institutes. It also provides Web hosting, e-mail accounts, and various computing-related services, and it contributes to the access to innovative technologies.¹⁰ (The INBMI, or l’Institut National de Bureautique et de Micro-Informatique, is the official public ISP to the Ministry of Education and Training and its all public educational institutions.)

Research in the domain of ICTs is enhanced through the research laboratory called Culture, New Technologies and Development, which is directed by the prominent Professor Mohamed Zinelabidine.¹¹

The integration of ICT in education is reinforced through the Tunisian Virtual School

and the Virtual University of Tunis.

Tunisian Virtual School (TVS)

TVS has been designed and created within the INBMI and is an essential basis of the “School of Tomorrow.” It is an example of pioneer experiences in North Africa and in the Arab countries. Tunisia was one of the first countries to contribute to the new technological changes in the field of distance education and e-learning through the launching of TVS in an experimental phase on January 28, 2002. As clearly stated in the presidential election programme, all the components of the TVU will be completed before the end of 2009. It is targeted both at the learner and the educator in basic and secondary education. It provides free interactive courses, revision modules, assistance, and ICT training, but it doesn’t award certificates yet. It consolidates the orientation of the educational system towards the development of the quality of education and the equality of chances, where it reinforces conventional education. It also provides a space for collaboration, resource sharing, networking, and publishing for the benefit of teachers.¹²

Virtual University of Tunis

The Virtual University of Tunis was established as a government initiative in 2003, and it now provides 20% of courses through e-learning. The initial objective was to offer distance learning programmes and widen participation in Tunisia, but it has increasingly become an on-line higher education provider across the French-speaking regions of North Africa. It doesn’t cover all specialties, but it awards diplomas and certificates. It provides interactive tutored courses, training, and development of content. There are 207 modules, representing more than 8,000 hours, that are ready for use. There are another 56 modules in progress and 110 in the evaluation phase. Another 51 are to be added within the framework of the co-operation and the partnership with Sun and Nettuno.¹³ The Virtual University currently has 10 functional access centres, and by 2009 there will be 200.

Current ICT Initiatives and Projects

E-learning, tele-formation, and distance education in general remain very promising areas of research that need to be reinforced and developed – hence, the efforts deployed within the Virtual University of Tunis to increase the number of its access centres.

Tunisia is supported by some international organisations (e.g., the World Bank, Microsoft, Apple) in its major activities which include implementing ICT staff training programmes; supporting professional development; providing networking opportunities; researching, developing, and evaluating new policy approaches; and bolstering institutional ICT infrastructure.

The World Bank is involved in a project known as Excellence Schools, which are usually found in relatively under-privileged areas. The first phase of the project seeks to promote excellence in teaching and learning, while continuing the push for the inclusion of all children at all levels of the basic education system. The second phase is to support the government’s efforts to provide a greater number of students with opportunities for post-basic education and modernise the sector in ways that improve the quality of outputs and the efficiency with which they are produced.

Apple Europe supports a project to set up the integration of ICTs in education with the co-operation of Apple Europe Institute. The project consists of establishing two spaces, the first one within the INBMI, and aims to support the mastery of the new technologies and equipment that will be made available. The second space is in one Preparatory School in Beja. It is allocated for the production of digital contents and educational software by students with their teachers' help and guidance.

Table 4 summarises the current and recent ICT initiatives and projects in Tunisia.

Table 4: ICT Initiatives and Projects

Programme	Description
<i>Administration</i>	
Remote registration	<ul style="list-style-type: none"> ▪ The Web site offers the possibility of on-line registration for students in 166 public higher education institutions. Registration fees can be paid online via e-dinar.
<i>e-Learning</i>	
e-learning	<ul style="list-style-type: none"> ▪ Virtual university: Project implemented since 2003; 20% of the courses will be given virtually by the year 2006 ▪ Virtual school: experiment since 2002; it is being gradually generalised ▪ Virtual school of the Tunisian Post: providing continued training for the Post staff (www.postelearning.poste.tn)
Virtual library	<ul style="list-style-type: none"> ▪ Establishment of a virtual library for the communication technologies sector (www.emaktaba.tn). The books and documents contained in the library are being scanned and digitised. ▪ Training and dissemination of digital culture
<i>Capacity-building</i>	
Basic training	<ul style="list-style-type: none"> ▪ Establishment of five higher education institutions for the training of ICTs specialists in 14 areas of specialisation during the period 2002-2005 ▪ Establishment of 11 areas of specialisation for the training of ICT specialists in higher education institutions in this field during the period 2002-2004 ▪ Establishment of a higher education cycle for the training of specialists in computer security, and complementary training cycles in ENSI and three private universities.
Training as part of the education syllabus	<ul style="list-style-type: none"> ▪ Testing the virtual university in 18 ISETs (higher institutes of technological studies), as well as the virtual school which offers students virtual courses ▪ Pursuing the generalisation of education in the field of computer science in the two final years of secondary education ▪ Pursuing the integration of information technologies in

	basic education programmes at the level of the technological education subject
<i>Training and Development</i>	
Continued training	<ul style="list-style-type: none"> Open school for civil servants: remote continued training via Internet allowing civil servants in office to prepare and participate in competitions for access to high education institutions
Complementary training	<ul style="list-style-type: none"> The training programme (21-21) consists upgrading job-seeking university graduates in the fields of computer science, multimedia, and new communication technologies Training of trainers in the fields of free software, Web techniques, and technological communications
<i>Infrastructure</i>	
One Computer Per Class initiative	<ul style="list-style-type: none"> More computer-equipped spaces being implemented in primary and preparatory schools to reach the percentage determined by the presidential election programme, which is one computer per class by 2009
Mobile laboratories	<ul style="list-style-type: none"> An innovative project known as Mobile Laboratories or Mobile Internet Buses connected to the Internet via satellites targets schools in rural remote regions to bring them technology and reduce the digital divide
<i>Collaborative Learning Programmes</i>	
Global Teenager Project (GTP)P	<ul style="list-style-type: none"> Launched in 1999 to bring the full potential of ICTs into the classroom and enhance secondary pupils' learning skills while increasing their understanding of other cultures by staging lively, global classroom debates in cyberspace
<i>Web presence</i>	
	<ul style="list-style-type: none"> Most educational institutions have Web sites and communicate official information using e-mail. Intranet is used but not well-developed in every institution.

Implementing ICT in Education: What Helps and What Hinders?

Although there are great efforts already made to implement ICT, but, there are still many challenges to face.

Table 5 provides a summary of the factors influencing ICT adoption.

Table 5: Factors Influencing ICT Adoption

<i>Logistics and Implementation</i>
<ul style="list-style-type: none"> While there are computing labs to teach computer sciences and technology in all institutions, specialised integration labs are not available everywhere. It is therefore difficult to perform any integrated lessons. The integrated lab is designed to raise students (and teachers) from a concrete level to a formal level of thinking. It uses laboratory work from physical science fields as well as math, all with the goal of raising the student to the level of ability to understand serious college work.

- Teachers are often reluctant to embrace ICT because they are already overloaded with very busy timetables and large classes. More equipment is needed and more timetable organisation and alleviation is required to enable real ICT implementation.
- It is apparent that more time is needed and more incentives are required to change the mentality and the attitude of education stakeholders to adhere to the changes brought by new technologies and to fully engage in innovative and creative new approaches.

Support

- One of the biggest hindrances is the shortage of follow-up in terms of technical maintenance, training, assistance, and dissemination of best practices, which results in the lack of efficiency and consistency of ICT integration. This is generally due to the limited number of competent ICT trainers in spite of regular national and regional ICT training seminars and workshops. Compared with the total number of teachers, those who sometimes manage to integrate ICT in their classes are few and those who really master the tools and use integration properly are even fewer.

Gender/Urban

- Constraints relating to gender are not really apparent since the number of female students sometimes exceeds the number of male students as reflected in the following chart:



- Despite the attempts to reach students in rural areas and to involve them in the technological revolution, the gap is still wide and more decisions need to be taken regarding ICT infrastructure, Internet connection, and rehabilitation of human resources.¹⁴

Notes

¹ The World Factbook 2007.. <https://cia.gov/cia/publications/factbook/geos/ts.html>

- ³ Official Portal of the Ministry of Education and Training. www.edunet.tn
- ⁵ Education Act.2002. Edunet. <http://www.edunet.tn/ressources/reforme/orientationan.pdf>
- ⁶ Information and Communication technologies in Tunisia-Main Achievements. Ministry of Communication Technologies. <http://www.infocom.tn/index.php?id=199>
- ⁷ Selected ICT Priority Issues
http://www.libc.net/CMS/uploadedfiles/Publications/ICTPrty_2002.pdf
- ⁸ The National Institute of Bureautics and Computing. www.inbmi.edunet.tn
- ⁹ World Education News & Reviews. www.wes.org/ewenr
- ¹⁰ El Khawarizmi Calculus Center. www.cck.rnu.tn
- ¹¹ he Virtual University of Tunis.. <http://www.obhe.ac.uk>
- ¹² The Tunisian Virtual School. www.evt.edunet.tn
- ¹³ The Virtual University of Tunis. www.uvt.rnu.tn
- ¹⁴ Global Challenges of eDevelopment. <http://www.uta.fi/jour/global/hietanen2.pdf>

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