

ICT in Education in Mauritania

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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

Mauritania's approach to the implementation of ICTs in the educational and public sectors has been to use the Université de Nouakchott as the focal point of its activities to enhance the usage of these technologies in the youth and the administration of the country in future. The university is providing the leadership, plans, training, and management of the entire process.

With the growth of the country's oil industry, financial constraints that previously could have impeded the country's drive towards its connectivity objectives will be reduced; this should help to advance the rollout of its Internet connectivity and electrification programmes. Challenges include the relatively low number of secondary schools, and corresponding low enrolment levels, which adversely impact the numbers of people who will become computer literate in the near-term, since the country's educational ICT development programme focuses mainly on the secondary and tertiary education sectors.

Country Profile

The Islamic Republic of Mauritania lies mainly in the Sahara Desert belt of northwest Africa. The country comprises 13 *wilayas* (regions), is about 60% desert, and is very vulnerable to climatic and environmental factors. It borders the North Atlantic Ocean and shares borders with Morocco, Algeria, Mali, and Senegal. The capital city and major port is Nouakchott.

Mauritania has a mixed population of blacks, light-skinned Moors, and a mixture of black-Moor extraction. Arabic and French are the official languages. The major ethnic languages are Pulaar, Soninke, Hassaniya, and Wolof. Forty percent of Mauritians live below the poverty line.

Among the country's few income sources are iron ore, fish and fish products, and gold exports. About 25% of the population still depends on livestock and agriculture for their livelihood while 29% are in industry with 46% in services.²

Mauritania has offshore oil and gas deposits and it is one of the four oil refining countries in West Africa. Offshore oil extraction began in February 2006. The oil industry is a significant element in the country's economy since oil-derived products supply 95% of the country's commercial energy needs.³

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

Table 1: Socio-economic Indicators: Mauritania

Indicator	
Population	3.2 million (2006 est.)

Growth rate	2.88% (2006 est.)
GDP (US dollars)	\$1 billion
GDP per capita (US dollars)	\$360
Human Development Index ⁴	153 (out of 177 countries)

The Education System

Mauritania educational system consists of six years of primary school, three to four years of junior secondary, three years of senior secondary, and an open tertiary system. Compulsory schooling is nine years with the compulsory school age set at six years.

The Ministry for National Education (MEN) is responsible for basic and secondary education, and the Ministry for Higher Education and Scientific Research (MESRS) handles tertiary education. MESRS⁵ was created in August 2005 to ensure that the Mauritanian educational system produces qualified graduates with requisite skills to sustain increased production and help diversify the economy, especially with the advent of the oil economy.

As Table 2 illustrates, other ministerial departments handle different aspects of the education sector particularly regarding technical and professional education.

Table 2: Ministerial Responsibility for the Education Sector

Ministerial Department	Sector
State Secretariat for Literacy and Original Teaching	Literacy
State Secretariat for Women's Affairs, Nursery Education and the Promotion of Women	Pre-school education, children, and women's welfare
Ministry for Health and Social Affairs	Public health and paramedics
Ministry for Fisheries and Maritime Economy	Naval training and fishing
Ministry for Rural Development and the Environment	Agriculture and rural professions development
Ministry for Power and Water Resources	Electricians
Ministry for Employment and Civil Service	Public administration and other vocational training

Table 3 reveals UNESCO's educational statistics showing the disparities between women and men.⁶

Table 3: Gender Disparity in Education

Indicator	Percentages
Literacy rate 2002-2004, men	60
Literacy rate 2002-2004, women	43

Primary enrolment rate 2000-2005, men	75
Primary enrolment rate 2000-2005, women	74
Secondary enrolment rate 2000-2005, men	16
Secondary enrolment rate 2000-2005, women	13

The issues of both student attrition rate in the first cycle of secondary education and the quality of teaching called for reforms which were carried out three years ago. The sciences and languages programmes were specifically revised to emphasise the teaching of English and French.⁷

The educational system is reported to have been mismanaged by unqualified personnel at various levels. In some communities only two or three classrooms serve as school with the children and teachers running shifts to use facilities.

Scarcely any schools⁸ have been constructed for second cycle education since the early 1980s, and school buildings rarely look alike. Few students, upon graduation, choose to be teachers but prefer white collar jobs in the civil and public services or the private sector. The quality of teaching has reduced considerably because of teacher truancy even at the Université de Nouakchott with a student population of about 10,000. The university is one of very few in Africa to have eluded closure owing to political upheavals.

Infrastructure

Telephone infrastructure

Since 2004, Mauritel has lost its place as the sole national carrier for fixed telephone services, though it is still the only operator of fixed phone lines in Mauritania with a penetration rate of 1.6% covering all the major cities. Mauritel launched ADSL services early in 2006.

There are two mobile telephone operators in the country: Mauritel Mobiles of Mauritel SA and Mattel S.A. (Mauritano-Tunissienne de Telecommunications). The rate of penetration of cellular telephones is about 23% with Mauritel covering 70% of the market.⁹

Table 4 provides a snapshot of the state of the telephone and other ICT infrastructure.

Table 4: ICT Infrastructure in Mauritania

ICT	
Telephone main lines	41,000 (2005) ¹⁰
Telephones mobile cellular	745,600 (2005)
Radio broadcast stations	AM 1; FM 14; shortwave 1 (2001)

Television broadcast stations	1 (2002)
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Electrification

Mauritania generates 105 megawatts of electricity. Fossil fuels provide 44 megawatts and hydroelectricity 61 megawatts. About 15% of the Mauritanian population has electricity with 30% in the urban areas and 10% in rural areas. Plans are afoot to provide electricity for 80% of the population in the two major cities of Nouakchott and Nouadhibou. National demand accretion rate is 10% to 15%.

The monopoly that Sonelec (*la Société nationale d'eau et d'électricité*), the national electricity company, enjoyed was abrogated in 1999. Two companies resulted: Somelec (*la Société mauritanienne d'électricité*) and Ader (*L'Agence de développement de l'électrification rurale*). Ader is responsible for rural electrification and Somelec handles power generation and distribution.

SNIM (*La Société Nationale Industrielle et Minière*), also produces 40 megawatts and 8 megawatts of electricity in its mining towns of Zouerat and Nouadhibou respectively.

Mali, Senegal, and Mauritania constructed the Manatali dam on River Senegal. The dam is managed by Sogem¹¹ (*la Société de Gestion de l'Énergie de Manatali*) and provides 807 GWh per year to the three countries with Mauritania obtaining 15% of power generated since 2002.

ICT Policies

The government created the State Secretariat for New Information Technologies (*Le Secrétariat d'Etat aux Technologies de l'Information et de la Communication*) to prepare and promote the national ICT policy.

The formulation of Mauritania's National Information and Communication Infrastructure (NICI) plan started in April 1999.¹² The process was led and co-ordinated by the Science and Technology Faculty of the Université de Nouakchott and the Ministry of Interior and Communications with support from the Internet Initiative for Africa of the UNDP as part of the national NICI team and the Economic Commission for Africa, ECA.

The NICI plan was finalised and approved in March 2000. The plan aims to:

- Integrate the ICT dimension into the realisation of the strategic choices for economic and social development in Mauritania
- Democratise access to ICT
- Contribute to the establishment of mechanisms of good governance
- Position the country to participate in the globalisation process

The plan identifies specific sectors requiring ICT-assisted development:

- Education: national network for learning and research
- Health: national information and communication in health systems
- Public administration: government's national ICT network
- Private sector: trade information and exchange network of Mauritania

To implement the plan effectively, Mauritania established a ministry for the development and promotion of ICTs to oversee the sector. The ministry has embarked on social inclusion strategies for the civil service, the private sector, civil society, and the local communities.

Education Policy

The 1999 educational reforms stipulated the following:

- Unification of the education system and the abolition of the experimental education system that emphasised national language instruction¹³ for the first two years of primary education
- Teaching math, the sciences, and computing in French
- Teaching civic education, history, religion, and history in Arabic
- Teaching English and computing at the secondary school level
- Creating a department of national languages at the Université de Nouakchott

Thus, Mauritania emphasises ICT from the secondary education level. It also hopes to eliminate illiteracy in the long term through concerted programmes and activities in the non-formal education (NFE) sector. Four areas of emphasis are targeted:

- Providing more funding and logistics
- Improving the skills and competences of NFE instructors, programme designers, inspectors, and managers
- Improving the programmes and curricula
- Emphasising the role played by *mahadra*, the schools on camel backs, for the nomadic populations in the desert areas

Funds for these activities are being sourced from the Highly Indebted Poor Country (HIPC)¹⁴ programme.

Current ICT Initiatives and Projects

The government preceded the NICI plan with some concrete actions¹⁵ that aided its implementation:

- Establishment of the government Internet centre in the civil service
- Establishment of an independent regulatory body responsible for telecom sector deregulation and the introduction of free competition
- The privatisation of the national operator, Mauritel

- The creation of the State Secretariat for New Technologies (SETN) in the office of the prime minister
- The institution of a legal framework and attractive conditions including the development of a policy regarding access to universal regulated services and the preparation of a telecom development strategy for the rural areas
- Duty waivers on all imports of computer equipment and accessories

The government also embarked on some strategic initiatives to achieve these objectives:

- Development of means of access for all Mauritians in the information society
- Human resource capacity-building
- Digital modernisation of public institutions and governance
- Adaptation of institutional and legal capacities to new technology contents
- Development and usage of new technologies in the private sector
- Development of Web content and visibility of Mauritania on the Web
- Support for sectoral technologies
- General governance of the new technologies sector

It is worth noting that these initiatives are underway in various public and private sectors. An example is the service offered by Université de Nouakchott in collaboration with AUF:

- e-learning (several certificated courses in this portfolio)
- Web site development and hosting
- Institutional and scientific capacity-building

Currently there are 450 subscribers in both the public and private sector to the services of the Information Access Centre (CAI) of the university in addition to 453 students and researchers.

The government also promoted the creation of an ICT users' network involving 450 associations, NGOs, women's co-operatives, 45 newspapers, and 35 communities.

Implementation

Université de Nouakchott has developed a USD\$1,114,000 network¹⁶ development plan, the national education and research network, to link all secondary and tertiary educational institutions to the Internet, including tertiary professional institutions that train administrators, health sector professionals, agriculturists, etc. Unfortunately, the plan is hampered by the absence of electric power in most parts of the country.

The university's Science and Technology Faculty (FST) has already initiated the teaching of ICT courses to the public in collaboration with the World Bank, the Agence Universitaire de la Francophonie (AUF), UNESCO, and the Institute for Research and Development.

The ministerial department in charge of secondary education, for its part, has also initiated a project with the FST and the Global Development Network (Reseau Mondial de Developpement) aimed at introducing ICT into public secondary schools in Mauritania.

Further, the government is implementing a reform programme to improve the quality and efficiency of teaching by using ICT. The objectives of the programmes, which derive from the activities of the Université de Nouakchott's FST, are:

- Access to data banks and e-libraries
- Scientific and technical content development for education and research
- Communication between the pupils, students, teaching, and research communities
- Creation of collaborative projects among pupils, students, teachers, and researchers including participation in sub-regional or international projects
- Statistics on educational and research systems
- A directory of personnel in the research and teaching structures

Six secondary schools in the capital are already connected to the FST network. FST envisages connecting all 10 teacher-training institutions in the country and other secondary schools nationwide. Since the plan focuses on education and research, it envisages ICT training for the teachers and researchers in secondary and tertiary education and includes the use of e-learning methods.

Further, the plan involves training a cadre of personnel that will maintain and repair computer systems and networks in the various localities where computer laboratories will be established.

The reduction of Internet access connection costs is a major element in the plan. Consequently ICT components are to be integrated into all telecommunication and electrification expansion plans. The government is also encouraging investment in ICTs.

All civil servants are to undergo ICT training, from beginner to advanced levels, to ensure the application of ICTs in national administration. The country set the targets¹⁷ below for the implementation of ICTs in the civil service and the population at large in 2006:

- Increase the bandwidth from 3.3 Mbps to 100 Mbps
- Connect 216 communities, all hospitals and health centres, and all teacher-training institutions
- Increase teledensity to 5% for fixed lines and by 20% for mobile telephones
- Provide 30 computers for every 100 employees in the civil service (i.e., 7,000 hosts)
- Train 100 computer scientists and computer technicians and pay attractive salaries to computer professionals to minimise the brain drain
- Establish three intranets for education, health, and the civil service
- Establish four portals for the economy, culture and tourism, education, and health sectors

- Establish a pilot secure e-commerce system
- Initiate e-government procedures by providing several government services on-line
- Integrate ICT into all development projects
- Establish an ICT village in Nouakchott
- Adapt existing laws by integrating ICT usage aspects

The Campus Numérique Francophone de Nouakchott¹⁸ in the Université de Nouakchott is staffed by management, computer, and training experts and is contributing to these efforts. The centre provides access to scientific and technical information, Internet communication, and e-learning.

In 2005, Resafad Mauritanie, in collaboration with the Ministry of Education, trained 43 education inspectors and officials in the ministry in beginner, intermediate, and advanced computing. Resafad is the Réseau Africain pour la Formation à Distance.

In 2006,¹⁹ Mauritania allocated licences in the telecom sector to:²⁰

- A new mobile operator, Chinguitel Mauritanie S.A.
- Orange Mauritanie S.A., which will operate a platform for pre-paid cards and a link to international telephone services
- Watanya Télécom Mauritanie SA, to construct local telephone circuits and to provide national and international telephone and Internet services

Through the World Links Programme of the World Bank, 12 schools are also involved in 14 collaborative projects involving 215 teachers and 6,000 students. The objective of the programme is to connect schools as communities of learning throughout the world and offer children the opportunity to use ICT creatively. Participating schools are provided free Internet connection. The programme has had a particular impact on Mauritanian women since it provides them the information that would otherwise not have been available within their societies and communities.

Legal and regulatory framework

To ensure the preservation of the potential gains of ICT in the economy, Mauritania plans to provide the necessary institutional and legal framework²¹ to protect its nascent ICT industry being championed by the Université de Nouakchott. Among the rights to be protected by law are:

- Appropriate Internet policies including consumer rights, intellectual property rights, and personal privacy
- Cyber crime affecting commercial transactions as well as individual and company rights

To this end, the country will introduce modern tools and build institutional capacity levels to underpin the liberal environment created to ensure the sustenance and promotion of ICT.

Non-formal education

In the non-formal education (NFE) sector, Mauritania has established 500 literacy centres²² nationwide and trained hundreds of literacy instructors to manage and teach in those centres. The country organises training workshops for would-be instructors who are secondary school graduates. New instructors are given theory and practical lessons on novel methods of adult learning and literacy.

Mauritania encourages women's participation²³ in the adult literacy programmes by locating the centres close to the communities and awarding prizes to female participants. The latest awards in the series were presented by Mauritania's First Lady to 15 female laureates and three journalists recognised as having contributed articles to the promotion of the NFE programmes and women's participation in particular.

Girls' education

Statistics²⁴ on girls' enrolment shows a high attrition rate of 30.3%. The adult female literacy rate is 27% in the rural areas and 52% in the urban areas.

The following factors²⁵ have been identified as contributors to the poor performance in examinations and withdrawal of girls from school:

- Extreme poverty of parents
- Distance from home to school
- Domestic chores
- Early marriages
- Social discrimination against girls
- Sexual harassment

Because of these challenges, girls' education has consistently received boosts with each educational reform since 1960. Government efforts at local and national levels include:

- Sensitisation campaigns involving traditional, political, and religious authorities
- Location of schools close to communities
- Employment of women teachers
- Prioritisation of girls' schooling by providing assistance and scholarships to more girls than boys
- Separation and grouping of boys and girls in the classrooms to meet the expectation of conservative parents

Introduction of the above measures increased primary school enrolment from 45.5% (39.3% for girls) in 1989/90 to 86.2% (83.2% for girls) in 1997/98.

Implementing ICT in Education: What Helps and What Hinders?

Table 5 lists the core factors and provides a summary of the current state of development in Mauritania in terms of enabling or constraining ICT applications in the education system.

Table 4: Factors Influencing ICT Adoption

Factors	Enabling Features	Constraining Features	Risk Factors
<i>Electricity and telecom infrastructure development</i>	Government policy to integrate Internet and electricity provision in all telecoms and power extension projects	Limited government funds in spite of resources from oil industry	Lack of sustained focus and commitment to planned projects
<i>ICT deployment</i>	Government investment policy and task holidays in the telecom/Internet sectors	<ul style="list-style-type: none"> • Lack of electricity • Unwillingness of investors to provide Internet access where they cannot recover their investment with profit 	
<i>ICT in education</i>	Strategies and targets implementation underway	Access to ICTs limited to secondary and tertiary institutions	<ul style="list-style-type: none"> • Low levels of enrolment and access to secondary and tertiary education • No-exposure of primary school pupils and the illiterate adult population in the NFE sector to ICTs
<i>Non-formal education</i>	Impressive effort of government to reach nomadic communities on camel-backs with education	<ul style="list-style-type: none"> • Entrenched traditions and/or discrimination against women • Limited government funds 	
<i>Girls' and women's education</i>	Priority given to girls' and women's education in the formal and informal education sectors	Entrenched traditions and sexual discrimination against girls	

Notes

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