

ICT in Education in Mali

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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

Mali has a national policy and strategic plan for ICT, administered through the Information and Communications Technology Agency (AGETIC). One of its missions is to set up an empowering environment for the promotion and use of ICT in education and capacity-building for the formal and non-formal sectors.

Though certain challenges obstacles persist -- such as a very low level of development of the telephone networks and no direct access to an Internet backbone -- a number of actors, including the Ministry of Education, local and international public and private partnerships, and many others, remain committed to enhancing Mali's education system. Notable Initiatives in the formal system include a university intranet, the Nepad e-Schools Demo project, Internet in schools, SchoolNet Mali and, in non formal education, the UNESCO Community Multimedia Centre Scale-Up Project which enables ICT access for villages.

Country Profile

Mali is a landlocked West African country with a surface area of 1.24 million square kilometres and a population of about 13.5 million people, 73% of which live in rural areas. The population density is very disproportionate, from 90 people per square kilometre in the Niger central delta to less than five people per square kilometre in the north Saharan region.

A former French colony, Mali (Sudan Republic) became independent in 1960. Its capital is Bamako (population: 840,000). It shares its borders with Mauritania and Algeria on the north, Niger on the east, Burkina Faso and Côte d'Ivoire on the south, Guinea on the southwest, and Senegal on the east. The highest point is Hombori Tondo in the central region of the country. Table 1 provides some selected socio-economic indicators for the country.²

Table 1: Socio-economic Indicators: Mali

Indicator	2000	2004	2005
Total population	11.6 million	13.1 million	13.5 million
Population growth (annual %)	2.9	3.0	3.0
Poverty head count ratio at national poverty line (% of population)
Life expectancy at birth, total (years)	47.6	48.3	..
Fertility rate, total (births per woman)	7.0	6.8	..
Mortality rate, infant (per 1,000 live births)	124.0	121.0	..
Mortality rate, under 5 (per 1,000)	224.0	219.0	..
Immunisation, measles (% of children ages 12-23 months)	49.0	75.0	..
Prevalence of HIV, total (% of population ages 15-49)	1.7
Primary completion rate, total (% of relevant age group)	28.5	44.0	..
School enrolment, primary (% gross)*	52.8	63.8	..

School enrolment, secondary (% gross)*	15.0	22.3	..
School enrolment, tertiary (% gross)	..	2.1	..
Ratio of girls to boys in primary and secondary education (%)	71.3	74.4	..

*Percent of gross is the number enrolled as a percentage of the number in the eligible age group.

The Education System³

As in other countries of the francophone world, the Malian educational system inherited most of its principles from the French colonial system. Yet, since independence, it has undergone a set of reforms to meet the needs of the local population. The Ministry of Education is responsible for governing the whole system and implementing the policy of the government. Instruction is given in French. A normal school year runs from September to June.

Fundamental education encompasses nine grades, divided into two cycles. Grades 1 through 6 make up the first cycle. In the sixth grade all the students sit for the C.E.P. which leads to the second cycle: Grades 7 through 9 (junior high school). In the last grade of the second cycle, the students take a nationwide exam called the Diplôme d'Etudes Fondamentale (D.E.F.) which leads to high school or vocational and technical school.

Secondary education (senior high school) comprises Grade 10 through 12. All Grade 12 students sit for the baccalaureate exam (high school diploma) in biology, maths/physics, human sciences, or language and literature. With the baccalaureate the students can enrol at the University of Mali or apply for universities abroad. The baccalaureate is a very selective examination for the students.

Students who do not envision completing long-term study programmes can enter two- to four-years public/private technical and vocational schools, which are all recognised by the Ministry of Education. Two-year vocational and technical schools offer the Certificat d'Aptitude Professionnelle (CAP) and the four-year schools offer the Brevet de Technicien (BT).

In Mali, the education sector has always been considered as a priority because of its impact on development, which is why the proportion of the national budget devoted to education has noticeably increased in the last few years, from 26.62% in 2001 to 30.6% in 2004.⁴ :

The Ten-Year Education Development Program (PRODEC), signed in 1999, is regarded as the Malian government's commitment to fund all its education systems. It is based on the strengths and weaknesses of the system in terms of accessibility, quality, and management. It applies to all levels of formal education (primary, secondary, and higher education) and comprises 11 priority domains:

- A universal and qualitative basic education
- A professional education adapted to economic needs
- A high-performing, renovated general and technical secondary education
- A quality higher-education, adapted to the priority needs and fixed costs
- The use of native languages in addition to French
- A policy on books and teaching/instructional materials
- A strong policy for teacher training

- A strong partnership about education
- An institutional adjustment and reconstruction necessary for a renovation of the education system
- A communication policy focusing on exchange and dialogue among all partners
- A strong and well-balanced financial policy that is reasonable and keeping with decentralisation

Non-formal education consists of:

- Adult literacy
- Education centres for development (CEDs)

ICT Policies

The national policy and domestic strategy plan⁵ for ICT aims at defining a Malian vision for applications as well as the objectives and roles and responsibilities of the stakeholders. It also fixes completion deadlines. AGETIC (Agence des technologies de l'information et de la Communication) has been created to ensure the administration and implementation of the policy.

For 2007 the priority actions are:

- Setting up a legal and statutory framework
- Developing ICT infrastructure
- Education and capacity-building
- Health support
- Good governance and administrative intranet
- Popularisation of Internet access and connection of all communities of Mali

Infrastructure

Mali's telephone network is at a very low level of development. The development of its telecommunication infrastructure is mostly in the urban areas with 69.9% of all lines in the biggest cities. Its telephone density (telephones per hundred people) in urban areas is 1.78, compared to 0.08 for the rest of the country.⁶

Internet in Mali is limited because there is no direct access to a backbone (because there is no sea access). Therefore, Mali must negotiate its access to international telecommunication networks with the neighbouring nations of Senegal and Côte d'Ivoire. Thus, there are two main international channels for Malian telecommunication networks. The first one goes from Senegal to Bamako via Kayes. On this route, Ikatel has laid an optical fibre, whereas Sotelma uses a high-tension electric cable. The second channel goes from Côte d'Ivoire to Bamako via Sikasso, passing through Burkina Faso. On this route, Sotelma invested FCFA7 billion in optical fibre in May 2004.⁷

Table 2 provides a snapshot of the state of national ICT infrastructure in the country.

Table 2: ICT in Mali⁸

Indicator	
Population (in millions)	13.5
Literacy rate	27.2
Gross National Product (per capita)	240
Televisions per 1,000 people	17
Radios per 1,000 people	180
Fixed telephone lines per 1,000 people	4
Cellular phones per 1,000 people	4
Personal computers per 1,000 people	1.2
Internet users (in thousands)	30

ICT in Education

ICT is introduced as a school subject in the first years of primary level in order to enable Mali to face the challenges of the technology revolution. In addition, the government of Mali will be taking some legal and statutory incentive measures to increase the cyber cafés and Internet usage. In so doing, young Malians will have more opportunities to communicate and exchange with other youth around the world. Noticeably, USAID has invested over a billion CFA francs to interconnect 10 sites of the University of Bamako.

Cyber Edu

The Ministry of Communication and New Technology and the Ministry of National Education have initiated an education cyberspace project called Cyber Edu, which provides some facilities for the teachers and the school managers to collect virtual educational resources for improving their professional activities. In Bamako, two school groups, Mamadou Konate and Kalaban Coura, have benefited from this project with computer labs equipped with 15 to 30 computers. This project involves 10 school groups and three Schoolmasters Training Institutes (IFM) in the regions of Sikasso and Mopti and in the District of Bamako. It will enable teachers to seek further information that can enhance and enrich their lessons, and it also help better manage human resources and school materials.

Mali's partners from the Canton of Geneva in Switzerland support the project's accomplishment.

School Net Mali

Through this project, USAID has equipped certain Malian high schools with computer materials, thus giving students a chance to enjoy a first contact with a computer. SchoolNet Mali stems from co-operation between the Mokoya Juru Association and SchoolNet Africa.

The objectives of SchoolNet Mali are to:

- Equip schools with computers
- Train teachers and students on how to use the computers
- Convince people that new technology and its uses are at their reach
- Set up the bases of systematic exchange between Malian educators and those around the world

- Integrate new and renewable energies in the school system

Strategic partners of SchoolNet Mali are Global Teenagers Project (GTP)-Mali, iEARN International, and AMUL (Malian Association for Linux users).

Non-formal projects

UNESCO, with support from the Italian government, is developing a pilot training programme in ICT for those working in the areas of literacy and informal education. The objectives aim to:

- Increase visibility of the non-formal education process with the help of ICT
- Enable those who work in literacy and non-formal education to take advantage of ICT possibilities, especially to produce and exchange information across electronic networks

Current ICT Initiatives and Projects

Internet in School

The Internet in School project is designed to facilitate Internet access for students in secondary education. It makes it possible for these students to have access to an infrastructure at the international level and a staff of Malian faculty trained in ICT. The project is the result of an agreement between the International Telecommunications Union (UIT), Swisscom, the national Ministry of Education, and the Department of Communication and Technology. It is funded by Swisscom at about FCFA80 million. Begun in 2003, this project was completed in 2005.

Classroom connections

The Department of Communication and Technology ensured the installation of a line connection in a high school classroom through Sotelma. This enabled a connection to Internet as well as the necessary technical installations to make sure that the computers function properly.

TOGUNET

TOGUNET is a network for exchanging and sharing information among ICT users for development in Mali. TOGUNET currently has nearly 200 subscribers or members.

PNUD

PNUD (United Nation Program for Development) and CEA (Economic Commission for Africa) help Mali develop its own cyber strategy.

Teacher training

On-line teacher training is provided by the University of Montreal in Canada and by the International Institute for Capacity-Building in Africa (IIRCA).

ROCARE

ROCARE, in partnership with IDRC and the University of Montreal, works with some local schools to carry out case studies in order to better understand the conditions that favour a successful integration of ICT in the school environment. The following schools are schools involved:

- Mamadou Goundo Simaga science department
- Kalanso “espace éducatif”
- Le Progrès
- Danzie Kone High School of Koutiala
- “La Lumière” High School

Afribone

Afribone is a private Malian organisation founded in 1999 that offers innovative services such as Internet connection and training sessions related to ICT development in Mali to regular customers. After completing a survey of Malian companies, and considering the needs of agents as well as managers, Afribone is in a position to provide training in a wide range of subjects, namely:

- Human resources management
- Project management
- Labour management
- Multimedia and ICT
- Technology networks
- Communication and marketing
- Training trainers
- Company and association management

CMC Scale-Up Project

The UNESCO Community Multimedia Centre (CMC) Scale-Up Project is a major asset to the informal education sector and makes ICT accessible to community members. Currently there are 23 CMCs where people can access computers, printers, community radio, digital devices, and other services.

For more information: www.unesco.org/webworld/cmc

CLIC

The Community of Learning and Information Centre (CLIC) project is funded by the U.S. Agency for International Development (USAID) through USAID/Mali and administered by Afriklinks which sets up and supervises centres for access to ICT, conceives and presents training modules, designs and installs networks, and follows up on and evaluates programmes.

USAID

USAID supports 13 pilot community-of-learning and information centres, which offer access to the Internet, e-mail, CD-Roms, video programming, and general computer use to potentially over 450,000 Malians in local communities.

For more information: www.usaid.gov/locations/sub-saharan_africa/countries/mali/.

NEPAD e-Schools Initiative

This project is being led by the e-Africa Commission, the special task team of NEPAD responsible for the structured development of the ICT sector on the African continent. The NEPAD e-Schools Initiative will, over a 10-year period, develop all African schools (estimated to be in excess of 600, 000) into NEPAD e-Schools. These schools will be provided with the necessary infrastructure and ICT equipment. They will also have teachers that are appropriately trained and who will have access to appropriate applications and digital

content to ensure that ICTs play a meaningful role in enhancing education and health conditions on the African continent. Six schools in Mali are currently participating in the demonstration phases of the initiative.

Implementing ICT in Education: What Helps and What Hinders?

The Malian government's commitment to fuse the education system with the technological innovations available today will prove to be a boost for Mali's education system. The main constraints to adapting schools to ICT use stem from the slow development of infrastructure and the high cost of ICT materials.

Table 3 provides a summary of the current stage of ICT development in Mali in terms of enabling or constraining features in the education system.

Table 3: Factors Influencing ICT Adoption

Factors	Enabling Features	Constraining Features
<i>Policy framework and implementation</i>	The adoption of a national policy and strategy for ICT aims at defining a vision for Mali in the field and determining the trends, objectives, roles, and accountability of stakeholders. The policy will also state the scheduling and deadlines.	
	The government has committed to a comprehensive training project for people in the education system.	
<i>Gender equity</i>		A digital divide exists between genders.
<i>Infrastructure and access</i>		There is insufficient computer equipment, inaccessible network access due to high cost, and a digital divide between the rural and urban areas.
<i>Collaborating mechanisms</i>	The national policy document broadly outlines decisions to be taken whereas the strategic plan document provides the priority actions by objectives and the roles and accountability of the stakeholders. It also sets the scheduling and deadlines	
<i>Human resource capacity</i>	Training will make it possible to develop human resources.	

Factors	Enabling Features	Constraining Features
<i>Fiscal resources</i>	VAT on imported computer equipment has been banned, which allows ICT development in the country and wider access.	There is high dependency on donors.
<i>Learning content</i>		There is weak development of educational contents.

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Notes

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

² The World Bank. <http://web.worldbank.org>

³ Mali-Ministère de l'Éducation Nationale en pleine refondation du système éducatif. 2005. Afribone.com : http://w3.culture.gov.ml/article.php3?id_article=60

⁴ Ibid.

⁵ Stratégie Nationale dans le domaine TIC. Agence des Technologies de l'Information et de la Communication. http://www.agetec.gov.ml/strategie_nationale.php?PHPSESSID=058680d438d1363a74eb14c4f5f2a2f8

⁶ Mali. United Nations Economic Commission for Africa (UNECA).

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⁷ Etude des TIC au Mali, lors du Forum Social Mondial 2006. Projet : "De l'îlot à Bamako" en collaboration avec l'association GNTM.

⁸ The Association for Progressive Communications (APC). <http://afrique.droits.apc.org>

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