ICT in Education in Benin

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Source: *World Fact Book*[1]

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Overview

Benin was the first country in West Africa to connect to the Internet, which it did in 1995. However the weak legal and investment framework stalled progress and development of its ICT sector.

Currently, deployment and integration of ICTs in education are at their lowest from the primary to the tertiary levels. While donor support helped realise some amount of meaningful connectivity to the Internet, the necessary contribution from ministerial and government agency sources that should have contributed to advance the cause failed because they were inept at delivering on their assigned roles.

Connectivity to the SAT-3 submarine cable has made permanent connection to the Internet via ADSL a possibility and has reduced service charges considerably. This may provide a way forward from a seemingly intractable situation.

Country Profile

The Republic of Benin is located between Nigeria and Togo in West Africa. It borders Niger and Burkina Faso in the north and the Bight of Benin in the south. The country has 12 political and administrative regions.

The main exports of Benin are cotton, palm oil, and cocoa. Cotton accounts for 80% of official export receipts. Benin's GDP is 80% agriculture, 12% services, and 8% manufacturing. Thirty-three percent of Benin's population live below the poverty line.[2]

Table 1 provides some selected soci-economic indicators for the country.[3]

Table 1: Socio-economic Indicators: Benin

Indicator	
Population	8.44 million (2005 est.)
Growth rate	2.72% (2006 est.)
GDP (US dollars)	$2.7 billion (2004 est.)
GDP per capita (US dollars)	$300
Human Development Index	165 (out of 177 countries)

The Education System[4]

The school system consists of six years of primary education, which is compulsory, followed by seven years of secondary education made up of two cycles of four and three years. Technical education at the secondary level takes six years, with two cycles of three years each. Tertiary education takes two to four years. Statistics indicate a 48% adult male literate population against 23% female.

The four government ministries responsible for education are:

- The Ministry for Primary and Secondary Education (MEPS)
- The Ministry for Higher Education and Scientific Research (MESRS)
- The Ministry of Technical Teaching and Vocational Training (MEFTP), which is a new ministry responsible for technical and vocational training in all sectors
- The Ministry for Culture, Crafts and Tourism (MCAT)

There are 12 regional education departments[5] and 77 district education offices under the education ministry. These structures give a false impression of a heavily decentralised administration, but the reality is very different.

Table 2 provides a quantitative perspective of some selected system indicators.[6]

Table 2: Selected Education Data

Educational Level	% Enrolment
Primary school enrolment ratio 2000-2005, net, male	93
Primary school enrolment ratio 2000-2005, net, female	72
Percent of primary school entrants reaching Grade 5 (2000-2004)	69
Secondary school enrolment ratio 2000-2005, net, male	23
Secondary school enrolment ratio 2000-2005, net, female	11

Infrastructure

Telephone

The telephone network is more than 80% digital in all the urban areas nationwide. There are plans for the telecom operator, Benin Telecom SA, to extend the network and services to the most remote parts of the country.

The SAT-3 submarine cable landing point in Cotonou, the capital of Benin, is connected to installed transmission equipment and the fibre optic link providing unlimited telephone service, digital television, broadband Internet service and technology convergence among the systems.

The facility has improved voice (fixed and mobile), data, and Internet communication within the country and internationally. Presently the company offers permanent ADSL[7] connectivity between 64 kbps and 2 Mbps to clients. Remote area service is by VSAT installations for voice and data.

Prior to the SAT-3 connectivity, there were 51,000 fixed telephone lines, 55,500 mobile phones in use, and more than 25,000 Internet users in Benin.

Electrification
The country's annual electricity consumption is 275 GWh and its installed capacity is 15 MW. Benin imports 270 GWh to meet national demand with consumption projected to increase by 20% each year for the next 10 years.

Benin has two large dams in operation at Nangbeto and Yeripao. Both of these were built for the dual-purpose of hydro power generation and irrigation.

The two companies that generate and supply electric power in Benin are Société Béninoise d'Energie Electrique (SBEE) and Communaute Electrique du Benin (CEB). CEB is a Togo-Benin joint venture that purchases electrical energy from the Volta River Authority (VRA) hydro facilities in Ghana and transmits it through its link in Lome, Togo, to Benin.

Other joint projects with Togo are the construction of the100 MW Adjaralla dam, and the hydro facilities on the Mono River, in addition to three other planned small-scale hydro-electric projects envisaged to yield a total of 150 MW.

Currently, there are enormous challenges in rural electrification. To date, rural electricity consumption represents only 3% of the national total. Benin, Togo, and Nigeria signed an agreement for the supply of electricity from Nigeria to both countries. The Economic Community of West African States (ECOWAS), through its West Africa Power Pool Project (WAPP)[8] is also in the process of constructing an interconnecting electric power grid for the region that will transport power from excess supply countries to low-energy ones. ECOWAS, along with private sector participation, has nearly completed a gas pipeline connecting Nigeria to Ghana through Benin and Togo, the West Africa Gas Pipeline (WAGP)[9]. WAGP is part of the region's energy system and is to supply natural gas to the three countries.

ICT Policies

Implementation
The Economic Commission for Africa (ECA) and the International Development Research Centre of Canada (IDRC) assisted Benin with funding to develop its National Information and Communication Infrastructure (NICI) Plan which was published in 2005.[10] The plan envisages launching Benin as an active participant in the information society and focuses on the following priority areas

- Business and trade
- Culture and tourism
- Education and training
- Health
- Environment

- Good governance

A new ministry, the Ministry of Communications and Promotion of New Technologies, was handed the co-ordination, control, and management of the new communications environment in accordance with established goals for the ICT sector.

The country projects active and vibrant involvement in an open and interdependent information society by 2025 and has outlined the goals-oriented strategy below:

- Establishment of a favourable environment for the development of ICTs
- Development of the ICT infrastructure
- Creation of a favourable educational environment for the development of ICT human resources
- Development of sectoral ICT applications
- Creation of a framework for collaboration on ICT issues

The plan was preceded by the availability of Internet connection to subscribers in 1996. The Office des Postes et Télécommunications (OPT)**,** now the Benin Telecom SA, was split into two entities:[11] la Poste du Benin S.A. and Benin Telecom S.A. Benin Telecom S.A. is the national carrier, the top-level domain administrator for ".bj" and the entity managing the national Internet Gateway.

The initial connection capacity was increased from 64 kbps to 128 kbps through the USAID's Leland Initiative which heralded the establishment of five Internet service providers (ISPs) and their connection to the OPT facility. OPT similarly operated as an ISP, offering Internet service connection directly to individuals and companies and initially providing dial-up access and leased line and digital leased line connections.

Further, two other ISPs were established: one for national administration by the ministry and the other for the academic community by the project SYFED-REFER of the francophone educational entity AUPELF-UREF. The latter has more than 950 clients, 64% of whom are students; the rest are researchers, lecturers, and civil servants.

Again, two other structures were set up: the Department for the Promotion of ICT[12] in the Ministry of Communications, and the National ICT Agency, which is an economic interest group that is supposed to champion the national ICT cause.

As well, an ICT advisory and promotional structure, the Benin Internet Society (BIS), was established. The aim of BIS is to create favourable conditions for the development and efficient use of Internet, promote Internet services, and serve as advisor to government and other groups operating in the ICT sector in Benin.

ADSL Internet connection is currently available because of Benin Telecom S.A's connection to the SAT-3 submarine cable.

Despite the establishment of these structures, the various government agencies and departments were inept at delivering on their assigned roles. Meanwhile, the private sector that benefited from the business arrangements and opportunities provided by the Internet concentrated on their returns against the promotion of societal progress through technology.

Educational Policy[13]

The educational policy of 1991 articulates the following eight objectives:

- Guaranteeing equal opportunity to all Beninese children between the ages of six and 15
- Improving the quality of education
- Strengthening the institutional framework
- Developing technical and vocational training
- Developing and rationalising non-formal education
- Developing literacy
- Rationalising the different public and private educational structures and scientific research
- Mobilising and managing resources rationally

It is obvious from this list of priorities that the education ministries do not have the policy direction and political will to develop and integrate ICT into education. In fact, ROCARE's (Réseau Ouest et Centre Africain de Recherche en Éducation) report[14] on the application of ICTs in schools indicates that 75% of the educational institutions have not received government aid to introduce ICTs and that without proper management techniques, secondary school students did not benefit from the use of ICTs. The current curricula do not include ICT courses or activities making it imperative for teachers, students, and officials to be trained in the use of ICTs.

Current ICT Initiatives and Projects

Primary level

ICT acquisition and usage costs are generally out of reach of most public primary schools. Some private primary schools have installed equipment, but these schools are not affordable to the majority of the population. Private schools with such facilities are normally confronted with the challenge of settling the monthly connectivity bills, although the advent of ADSL may resolve this problem. Nonetheless, it is rare to find a school providing Internet access to its pupils.

It is in this environment that the GLOBE (Global Learning and Observations to Benefit the Environment) initiative was launched in selected primary and secondary schools in Benin. The initiative is sponsored by the government, USAID/Benin, and the UNHCR.

In February 1999, the GLOBE Train-the-Trainer programme and the USAID mission partnered with four ISPs to deliver training to 115 people in an effort to increase ICT knowledge, awareness, and usage. Currently there are 178 GLOBE-trained teachers in 75 schools including 42 primary schools.

Secondary level

The same challenges facing the primary schools confront the secondary schools. Those public schools that have computers have obtained them through external sources via NGOs and donor programmes and projects.

Project PIIES,[15] (Projet l'Introduction de l'Informatique dans les Etablissements Secondaires), which intended to equip secondary schools, succeeded in installing computers in two secondary schools and some primary teacher-training colleges without connecting them to the Internet.

It is worthy to note that a PC clone sells for 30 times the minimum wage and is equivalent to a teacher's total salary for eight months – a situation that underlies the difficulties in an ailing economy that cannot support generally the provision of computer equipment and Internet connectivity to schools.

The GLOBE initiative has helped 33 secondary schools. Twenty of the primary and secondary schools involved in the programme have computers with teachers and students trained in their usage and maintenance.

Tertiary level[16]

At the tertiary level, before the introduction of ADSL last year, only two institutions provided permanent Internet access to students:

- Campus Numérique Francophone (Francophone Learning Centre) de l'Université d'Abomey-Calavi
- L'Institut National d'Economie (National Economic Institute).

The World Bank furnished the funds for these facilities to which other institutions are connected via telephone lines, and the Beninese authorities provided other infrastructure (buildings and furniture).

Universities[17]

There are three universities in Benin:

- l'Université d'Abomey-Calavi (AUC)
- l'Université de Parakou
- l'Institut Universitaire Technologique de Lokossa

Only l'Université d'Abomey-Calavi is connected to the Internet, but it is not on the fibre optic network linking Cotonou to Parakou. At the l'Université d'Abomey-Calavi, there are four computer laboratories:

- The cyber café of the private ISP, Unitech-Benin, was established in 2003. The Internet connectivity costs were financed by the UNDP in the first year. Plans were made to meet connectivity costs from a services management arrangement in succeeding years. A video-conference facility is to link l'Université de Parakou to this cyber café.
- The Resafad ICT laboratory was set up by l'Ecole Polytechnique d'Abomey-Calavi (EPAC) in 1996. The Internet connectivity for the lab has been defective most of the time since January 2004.
- The Setondji Hall, the nucleus of a planned national research network for distance learning established with assistance from the UNDP, URNET (Réseau universitaire de recherche et d'enseignement à distance) was inaugurated in 2003 with installed capacity for 70 computers, but it currently has only 30 computers and bandwidth connection of 2 Mbps.
- The Francophonie Learning Centre (CNF) of the AUF (Le Campus Numérique Francophone de l'Agence Universitaire de la Francophonie) provides connectivity to several faculties in the AUC and boasts of a training room, a cyber café, and ICT development facilities.

The cyber cafés and ICT labs, particularly CNF, organise ICT courses for students and lecturers. The lecturers receive instruction on the development of Web-learning content and Internet access courses. They then prepare the necessary content before delivering the courses using the facilities at the CNF after which students are allowed to access the resources on their own. The courses covered include mathematics, chemistry, biology, physics, Linux, Web site design, introduction to computers, office systems software usage, files management, Internet access, and access to scientific and technical documents.

CNF's portfolio of e-learning certificated courses includes:

- Designer-manager of Internet services
- Law
- Research in education science
- International rights and the environment
- Internet labels
- ICT and development
- ICTs in education

Lecturers and students alike may subscribe to scientific databases to help with their research, obtain scientific documents and articles, and access Web or local resources. CNF offers resources produced by the Ministère français de l'Education Nationale et de la Recherche Scientifique, among others. The various disciplines are allocated 20 hours of ICT-assisted course instruction per group by the CNF.

Distance learning programmes

ICT has yet to have an impact on open and distance learning (ODL). To date, lecturers produce monographs that are distributed to students nationwide with face-to-face sessions organised periodically. The disciplines covered are an electronic technician's course, civil engineering, mechanical engineering, agriculture, hydro engineering, and environment management. The numbers of students in the various ODL disciplines is tabulated below by year, as shown in Table 3.

Table 3: Enrolment in distance learning programmes

Year	Total	Agricultural Science	Civil Engineering	Hydro Engineering	Electrical Engineering	Mechanical Engineering
2002-03	199	61	86	27	21	4
2003-04	229	66	110	29	15	9

Progressive integration of ICT into the ODL programme is not currently being pursued. The technical training that was offered to the teacher-developers of the course materials by RESAFAD focused on the use of computers to prepare the monographs and course documentation contrary to previous manual methods.

ICT in teacher-training and vocational colleges

Some teacher-training and vocational colleges, as well as the regional education offices, have computer laboratories without Internet connection. Staff and students are taught ICT courses including introduction to computers and office suite applications (e.g., MSWord and MSExcel).

ICT at community level with donor and NGO support

- UNESCO, in collaboration with the Swiss Agency for Cooperation and Development (SDC), has established a community multimedia centre (CMC) in Cotonou for the entire community. The CMC management hopes to help revitalise the marginalised neighbourhood by promoting educational activities and involving the community in small enterprise schemes, micro-credit groups, e-commerce, and distance learning.
- CyberSonghai, a Beninese NGO, has established cyber cafés in Porto Novo, Savalou, and Parakou. Parakou is the most important northern city in Benin. Users pay subscription and user fees.
- ORIDEV, trains and provides Internet access at reduced prices to youth. It organises periodical virtual meetings and Internet workshops for selected students from schools and colleges. These activities are, however, concentrated in the urban areas, particularly in Cotonou. The programmes attract pupils, students, and jobless graduates. Other courses offered by ORIDEV include MS Office applications, computer maintenance, computer networking, and Web site development.

Non-formal education

Adult education focuses on literacy, arithmetic calculations, and the environment. Previous programmes emphasised only literacy without post-training activities. The

revised programme strengthens the communication, information, and family life aspects and is combined with vocational training.

UNICEF and UNFPA are providing assistance to the revised programmes, while UNESCO's contribution centres on rural schools in the Education for All (EFA) programme. Benin partnered with Cooperation Suisse to create the Literacy Support Unit which liaises between civil society and the government's Literacy Service Agency. The unit provides technical assistance to diverse training programmes covering health, hygiene, management, and organisation for rural populations.

Initiatives in the non-formal education sector include:

- Vocational training
- Training of rural youth in rural projects management, training of unschooled girls, etc.
- Literacy and adult education
- Health education
- Education using the media (radio and television)

These programmes were financed through the public, community, and donor assistance schemes set up by the government and supported by USAID, the World Bank, Cooperation Francaise, UNICEF, Japan and the FAO. The government's contribution focused on the construction and rehabilitation of educational infrastructure.

Girls' education

From 1994 to 2003, UNICEF projects (e.g., the Education and Community project and the Social Development Support project) have significantly promoted the education of girls and women generally. The objectives of the projects were to:

- Increase the rate of girls' enrolment from 25% to 40% and reduce the disparity between girls' and boys' enrolment to 10% in all schools in the project zone
- Include a minimum of 30% of girls in the 11- to 15-year age group in all community education projects
- Ensure the training of 50 women per village each year in revenue-generating group projects
- Develop the teaching of children's rights in 150 experimental schools and all schools in the project zone

The government's campaign to reduce the current enrolment disparity of 21% between boys and girls was given a boost when motor-taxi drivers donned T-shirts displaying "All Girls in School" as part of the fee-free education and EFA policies of government. (Women make up 52% of Benin's population.)

Television and radio coverage

Benin has two national and several private television stations: the public radio and television station ORTB, and the private television station LC2 and other private satellite television channels.

There are several FM radio stations. Nine of these are commercial, 17 are either religious or non-commercial, and three are public. In addition Benin has issued 125 community radio licences. Each radio station pays a spectrum fee of 1,000 euros per year.

Because of the inadequate infrastructure, the vast majority of the population in the rural areas obtain national and international news via radio. The low levels of literacy do not make printed media a common information option.

Radio and television are used extensively in community development and social education programmes. The more prevalent themes are health, schooling, environmental protection, agricultural production, husbandry, women's issues, road security, culture, literacy, civic education, and trafficking.

Implementing ICT in Education: What Helps and What Hinders?

Table 4 lists the core factors and provides a summary of the current state of development in Benin 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
ICT deployment	• High-speed Internet connection because of recent connection to SAT3. • Private sector involvement in deployment of Internet services and facilities aiding access to ICT technologies in the general population especially in urban areas.	• Universities financially constrained before the arrival of ADSL. • Private sector ISPs emphasise commercial service against community service. • Low levels of ICT literacy in the general and teaching population.	• Possibility of failure of government or universities to renew or maintain installed facilities. • Inability of government to extend ICT infrastructure due to financial and budgetary constraints.
Non-formal education	• Government and donor support is helping to reach the uneducated. • The weak bridging	• Government budget insufficiency does not permit meaningful	• Future absence of donor support may stall progress because of low government

	of literacy and vocational skills encourage some participation.	assistance to initiatives.	funding.
Gender equity	• Government and society are involved in the campaign for girls' education to converge the girls-to-boy enrolment ratios.	• Traditional daily household demands still take priority over girls' education.	• The bridging of girls' and boys' enrolment ratios is a daunting task in the light of current enrolment statistics.
ICT policy and implementation	• The university and some institutions establish computer laboratories with support from external sources.	• The absence of policy at the ministerial level impedes implementation of ICT.	• The weak legal and investment framework in the telecom sector contributes to the slow progress and development.

Notes

1 The World Factbook 2007. https://www.cia.gov/library/publications/the-world-factbook/geos/bn.html
2 Benin Economy-2007. http://www.theodora.com/wfbcurrent/benin/benin_economy.html
3 Benin, Students of the World. http://www.studentsoftheworld.info/country_information.php?Pays=BEN
4 Benin-Education System, International Association of Universities. http://www.unesco.org/iau/onlinedatabases/systems_data/bj.rtf
5 Développement de l'Education. Rapport national de la République du Bénin, UNESCO. http://www.ibe.unesco.org/countries/countryDossier/natrep96/benin96.pdf
6 Benin Basic Indicators, UNICEF. http://www.unicef.org/infobycountry/benin_statistics.html
7 Avis d'appel d'offres, Bénin Telecoms. http://offres.benintelecoms.bj/index.php?option=com_content&task=view&id=26&Itemid=42
8 Qu'est-ce que le Wapp? ECOWAS. http://www.ecowas.int/ips/ii/energy/fr/page.php?file=what
9 World Energy Council. http://www.worldenergy.org/wec-geis/publications/reports/afrique/cooperation/ouest.asp
10 Faire du Bénin d'ici 2025 une Société d'Information solidaire épanouie et ouverte, Gouvernement du Bénin. http://www.gouv.bj/textes_rapports/textes/politique/sommaire1.php
11 2006 Investment Climate Statement-Benin, U.S Department of State. http://www.state.gov/e/eeb/ifd/2006/62317.htm
12 Usages et bonnes pratiques des technologies et des documents de communication dans l'enseignement à distance et l'apprentissage libre au Bénin, plus particulièrement pour la formation continue des enseignants, EDUSUD. http://www.edusud.org/IMG/pdf/benin_jft.pdf
13 L'évaluation de l'éducation pour tous à l'an 2000 : Bénin, UNESCO. http://www.unesco.org/education/wef/countryreports/benin/rapport_1.html
14 Study on ICT and Education, IDRC. http://www.idrc.ca/wsis/ev-50215-201-1-DO_TOPIC.html
15 Usages et bonnes pratiques des technologies et des documents de communication dans l'enseignement à distance et l'apprentissage libre au Bénin, plus particulièrement pour la formation continue des enseignants, ADEA. http://www.adeanet.org/distance/Contrib/C_terret.htm
16 Lohento, K. Société civile et la politique nationale des ntic au Bénin. 2003. Iafric. http://www.iafric.net/benin/articles.htm#societe

17 Usages et bonnes pratiques des technologies et des documents de communication dans l'enseignement à distance et l'apprentissage libre au Bénin, plus particulièrement pour la formation continue des enseignants, ADEA. http://www.adeanet.org/distance/Contrib/C_terret.htm

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