ICT in Education in Cape Verde

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Source: *World Fact Book* [1]

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This short *Country Report*, a result of a larger *info*Dev-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

Cape Verde has made significant strides in the implementation of ICTs in education. The drawback of doing so has been the exorbitant cost of Internet connection and services owing to the monopoly maintained by Cabo Verde Telecom. Further, the availability of the technology in terms of usability by the general population is limited to two islands where cyber cafés have been established by private companies nearly to the exclusion of the others. The 30% of the population living below the poverty line may never be able to access such facilities, and another 12,000 families may never enjoy such communication because of the terrain that makes it impossible for electric power to be extended to them using traditional means.

Country Profile

The Republic of Cape Verde comprises a group of 10 islands and five islets located 620 kilometres off the west coast of Africa, west of Senegal in the North Atlantic Ocean.[2] The capital of Cape Verde, Praia, is on Sao Tiago island. Nine out of the 10 islands are inhabited.

Cape Verde is one of the most stable countries in West Africa. The country became independent in 1975 after colonisation by the Portuguese. It was a one-party state until multi-party elections in 1990 ushered in a democratic government.

The country experienced repeated droughts in the second half of the 20th century that caused most of its population to leave. Consequently, the country's expatriate population is greater than its domestic one. Cape Verdians have both African and Portuguese ancestry and speak two languages: Portuguese, which is the official language, and Crioulo, the local creole.

Agriculture accounts for 11% of GDP,[3] industry 17%, and services 71% (2002).

About 30% of the population lives below the poverty line. A substantial part of the country's budgetary resources are from repatriated funds of its large, dispersed expatriate populations and donor sources.

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

Table 1: Socio-economic Indicators: Cape Verde

Indicator	
Population[4]	420,979 (2006)
Growth rate	0.64% (2005)
GDP (US dollars)	$1,128 billion (2005)

GDP per capita (US dollars)[5]	$2,091 (2004)
Human Development Index	106 (out of 177 countries)

Education System

The educational system operates on a structure of six years of primary school and six years of secondary school. The secondary system consists of three cycles of two years each. Three-year vocational training follows 10 years of schooling, while university education may take three to four years.[6]

The Ministry of Education, Culture and Sports is responsible for primary and secondary education, and the Ministry for Higher Education is responsible for tertiary education, science, and technology. The education sector is allocated 20% of the country's budgetary resources.[7]

Table 2 reveals the enrolment figures for the different educational levels.

Table 2: School Enrolment

Level	2000-2004/5 (%)
Primary completion rate, total (% of relevant age group)	91
School enrolment, primary (% gross)*	99
School enrolment, secondary (% gross)*	67
School enrolment, tertiary[8] (% gross)*	6
Literacy rate, adult total (% of people ages 15 and above)	76.6

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

The trained teacher population[9] is 72.7% with 66.7% being women. The pupil-to-teacher ratio in primary education is 26:9. In terms of gender equity, according to the World Bank, the enrolment rate for girls is higher than the rate for boys in secondary and tertiary education.

Each of the inhabited islands has at least one secondary school. The island of Sao Tiago has fifteen.

The major tertiary institutions include:

- The primary teacher-training institute, Instituto Pedagógico (IP)
- The secondary teacher-training institute, Instituto Superior da Educação (ISE)
- The Higher Institute for Engineering and Science, Instituto Superior de Engenharia e Ciências do Mar (ISECMAR)
- A private university, Universidade de Jean Piaget de Cabo Verde, which runs undergraduate, post-graduate, and doctoral programmes

Bilateral assistance from France[10] and Luxembourg has enabled Cape Verde to develop appreciable human resource capacity in the technical and vocational education sectors. Several training institutes on some of the islands are focal points for such projects. The first professional training centre for mechanics, metalworkers, plumbers, and electricians was opened in February 2007.

The country hopes to open its first public university with two campuses in 2008.

Infrastructure

Telephone infrastructure

Cabo Verde Telecom is the sole operator in the country providing fixed telephone, mobile phone and Internet communication services. The company has undergone three privatisation exercises since 1992 when government deregulated the sector. Nevertheless, it alone provides telephone services in the country.

The telephone service was liberalised in January 2007. Siemens Portugal is to provide a nationwide high-tech service for television transmission to all homes within two years via DSL broadband. The offer is to be expanded to include telephone and Internet services.

Though Cape Verde's telephone system is among the most efficient in the sub-region, its usage costs are prohibitive because of Cabo Verde Telecom's monopoly. This notwithstanding, ADSL Internet services[11] are available in the major towns on the islands and hotels offer connectivity for laptops.

Table 3 provides a snapshot of the state of Cape Verde's telecommunications infrastructure and usage statistics.[12]

Table 3: ICT in Cape Verde

Indicator	
Telephones - main lines in use	71,400 (2005)
Telephones - mobile cellular	81,700 (2005)
Radio broadcast stations	22 FM (plus 12 repeaters) (2002)
Television broadcast stations	1 (plus 7 repeaters) (2002)
Internet service providers	234 (2006)
Internet users	25,000 (2005)

Electrification

The country produces 44 million kilowatts per hour of electricity from fossil fuels. On the islands of Sal, Boa Vista, and Sao Vicente, Electra, the water and power company, generates and distributes electricity. On the small islands, the municipal authorities handle power generation and distribution. In anticipation of an upward turn in investment

and tourism, the government took control of Electra in January 2007 but promised uninterrupted services.

In 1999 electrification was estimated at 60%.[13] However, the large distances between inhabited areas on the islands makes it impossible to provide access by traditional means to about 32,000 families of which 12,000 may never have access.

ICT Policies

The country's ICT policy was co-ordinated by the Ministry of Infrastructure and Transport. The National Information and Communication Infrastructure (NICI) plan,[14] which was finalised in 2001, prioritised the following sectors for strategic implementation:

- Education
- Health
- E-government
- Regulation
- Environment protection
- Infrastructure development

UNECA and the International Development Research Centre (IDRC) of Canada assisted the country to develop the NICI plan.

ISECMAR is the top-level administrator for the .cv domain and reports to the Commisao Instaladora do Ensino Superior in the ministry, which has responsibility for the communications sector and employs two ministerial organs[15] for sector administration and control: the Telecommunications Council (TC) and the ministerial Department of Communications (DGC). TC is an intersectoral consultative organ that co-ordinates operations of telecommunications systems and promotes ICT. DGC is responsible for the design, implementation, and execution of telecom policies. The latter drafts laws and regulations on operations and technologies in the telecom sector.

Educational policy
The following objectives are articulated in the country's Education for All (EFA) policy:[16]

- Universal access to education for all children at age seven and a compulsory school age of six
- Improvement in the teaching methods
- Encouragement of private participation in the provision of education
- Elimination of illiteracy by 2000
- Promotion of vocational and technical education focusing on the development of the rural and semi-urban areas
- Use of information channels to introduce new educational technologies

- Enlargement of the receptive capacity of the school system and promotion of quality teaching
- Adaptation of the curricula to national development realities

The specific objective of using information channels to introduce new educational technologies was reinforced by the Strategic Education Plan for 2003-2013, which recommended the establishment, strengthening, and replication of information and communication networks in the education system.

Current ICT Initiatives and Projects

Telecom laws and regulations
Since 1995 Cape Verde has employed ICT as a development tool. The Department of Social Communication in the Presidency is responsible for:

- Creating the legal and institutional framework for ICT
- Reducing the cost of usage of the different communication technologies
- Providing public access to ICT

In 1995, Law No. 500 was enacted; it defines competencies, competition laws, development of new services, and technologies without specifically mentioning ICT. The law seeks to regulate the planning and development of free markets, tariffs, and technical rules for the telecommunications sector. However Law No. 72 of 1995 gave Cabo Verde Telecom exclusive concession for 25 years with the possibility for renewal for a minimum of 15 years.

The drive towards modernisation was enunciated in the 1997 development plan and also debated in the National Forum for Consensus Building for the Transformation of Cape Verde. Resolution No. 15 of 7 July 2003 also created an information society in the country.

Telecom infrastructure expansion
Cabo Verde Telecom has linked all the islands by fibre optic cable and has provided telephone access to communities of a minimum of 200 inhabitants including the provision of phone booths in rural areas. In addition, the country is served by an international submarine cable that facilitates international communication and Internet access. These developments have facilitated the expansion of Internet services.

About 3,100 individuals and companies subscribe to the company's Internet service and have either Web sites or e-mail addresses. Several state companies and institutions have invested in ICT.

Nascent e-government structures
In 1997, the Ministry of Finance initiated a project that became the motivation within government to use ICT. This project, the National Administrative and Financial Reform (RAFE), was the first to introduce the idea of intranet into government service.

When the government's decentralisation policy found expression in its political and administrative structures, the process was facilitated by the administrative intranet that was installed to service the ministries, the municipal councils, and state organs. At present, the intranet links 56 buildings and 2,500 state employees.

Government support for ICT

Government has encouraged the private sector to establish computer maintenance companies, ICT training schools, and secretarial and communication services. Nonetheless, only an insignificant fraction of the population can use these services because the majority of families are poor. As well, the rural areas are not served at all. Currently the 20 cyber cafés on the islands are restricted to Praia and Mindelo with little else on the other islands.

ICT in secondary education

The 1990 basic law on the education system, which was revised in 1999, stipulates that secondary education must promote global, integrated, and life-long training for students. It emphasises technical and scientific training as the vehicle to enable students to participate in socio-economic development in order to promote the quality of work.

This adopted stance caused the introduction of new educational technologies into secondary schools. At present all secondary schools have computers and are equipped with computer laboratories. Some of those computers are connected to the Internet.

The lowest computer-to-teacher ratio is 1:28, and the lowest Internet-connected-computers to school-population ratio is 1:88. It is estimated that 25% of secondary schools do not have adequate computer equipment.

About 88% of secondary school teachers use computers daily, but 12% have never used them. Teachers tend to use computers to develop course material, prepare tests, do research, and prepare audio-visual presentations.[17]

ICT in tertiary education

All higher education institutions have computers and computer laboratories.[18] Universidade Jean Piaget boasts 162 computers, 20 projectors, and five panel projectors. As well, the university runs ICT degree programmes and professional courses including CISCO certification programmes.

ICT in teacher education

The challenge of limited physical infrastructure and resources led to experimentation with ICT in distance teacher education. The attempt, which was financed by the African Development Bank (ADB), enlisted 56 teachers using blended learning methodologies.

Further, the country has obtained assistance from La Fondation Calouste Gulbenkian to train 18 lecturers in ISE, IP, and ISECMAR. The master's course was organised in collaboration with Université d'Aveiro to equip the lecturers in the three institutions with

skills that will enable them to develop ICT-driven distance learning content and programmes.

The move is to help provide continual training to teachers and to train teacher-trainees without resorting to assembling all participants in a central location in limited physical space. The goal is to increase the number of teachers.

Non-formal education

Adult education is organised in three stages, only those between the ages of 15 to 35 are admitted. The programme focuses on reading, writing, and arithmetic skills and aims at training participants for the job market with the final objective of integrating them into the workforce through the creation of micro-projects. Between 1992 and 1996, 5,227 adults and youth were trained and 401 multi-sectoral micro-projects were launched.

Post-literacy training covers vocational skills and community and reading activities. Mobile libraries are established on four of the islands (Sao Tiago, Sao Nicolau, Santo Antao, and Fogo) and help instructors to run post-literacy training programmes. The mobile vans tour most remote areas on the islands. Community literacy activities are for information, communication, and public education.

Year 2000 was targeted for eliminating illiteracy in the priority age group of 15 to 35 years with concomitant illiteracy reduction in the general population to 12%. The rate of illiteracy in the prime target population was 6% in 1990. The programme was successful due to the functional literacy and vocational training accompaniment.

NGOs also participate in adult literacy activities. Substantial support was received from the United Nations and the European Union for these programmes, which involved citizenship and peace issues, democracy and human rights, hygiene and health, and population and family life.

The contribution of the press has been a critical success factor in the adult literacy programmes. A special publication, *ALPHA,* was used to promote reading culture in the literate adult population.

Radio and television in education

The Department of Educational Technologies in the Ministry of Education established Educational Radio in 1990 which was used to promote:

- Training elementary school head teachers
- Airing educational programmes
- Transmitting non-educational programmes

Another educational radio[19] was launched in October 2003. The station has a different three-pronged purpose: development, training, and education.

Other radio stations contribute to social communication. Different stations emphasise different social and community programmes and projects with the sole aim of sensitising communities on social responsibilities.

There is also ongoing collaboration with other Portuguese-speaking countries to launch television channels via satellite and the Internet[20] to all its islands. The facility will be used to feature and promote educational programmes. Meanwhile a health education programme designed by the Cape Verde Institute for Action in Social Education (ICASE) is already being transmitted by radio and television.

Implementing ICT in Education: What Helps and What Hinders?

Table 4 provides a summary of the current stage of ICT development in Cape Verde in terms of enabling or constraining features in the education system.

Table 4: Factors Influencing ICT Adoption

Factors	Enabling features	Constraining features	Risk factors
ICT deployment	High-speed Internet connection to be made commonly available on all the islands by Siemens Portugal.	Private businesses concentrating cyber cafés only on the more populated islands to the exclusion of the others because of commercial interests.	The impossibility of the very poor 30% of the population to access available installed Internet capacity.
Non-formal education	Rather innovative way of combining vocational training and job market insertion strategies with adult literacy programmes increases interest and participation in the target populations.	Mobile vans for post-literacy follow-up activities limited to four of the islands, so other remote populations are not catered for.	Paucity of government funds may in future stall the process.
Gender equity	Cape Verde has achieved greater enrolment ratios for girls than for boys.	.	
Vocational and professional education	Government still building vocational centres to cater for more placements.	Government unable to build more schools due to budgetary constraints.	Absence or suspension of bilateral aid may adversely affect those vocational institutes that benefit from donor supported programmes.
ICT policy and implementation	The drive to computerise all second-cycle and	Not introducing ICT at the basic school level	The exorbitant cost of Internet and

	tertiary institutions and the involvement of the private sector will ensure sustenance of the ICT industry and information society.	is a drawback in the country's drive towards the information society.	communication services may kill a potentially vibrant nascent ICT industry because of monopoly.

Notes

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