Trinidad and Tobago

Summary

The Trinidad and Tobago education system has a long history using and experimenting with ICT in schools. That history notwithstanding, current levels of ICT access and use are inadequate. The FastForward project, the Secondary Education Modernization Program (SEMP), and other initiatives currently in process are intended to radically improve both the quality of teaching and learning in schools and access to ICT for teachers and students.

The standard of living in Trinidad and Tobago is among the highest in the Caribbean. The Trinidadian economy has historically depended on exports of oil and natural gas, other petrochemicals, and asphalt. Economic planning has begun to emphasize tourism, although to a lesser extent than many neighboring island states.

Basic Data

Category	Date	Value
Population	2006	$1,065,842
Per capita GDP (PPP)	2006	$16,800 (2005 est.)
Economy, composition	2006	Oil and natural gas, asphalt, tourism
Literacy, total population 15 and over	2003	98.6
Literacy rate (women)	2003	98
Net enrollment ratio, primary	2000	98.4
Net enrollment ratio, primary (girls)	2000	100
Gross enrollment ratio, secondary	2000	70.7
Gross enrollment ratio, secondary (girls)	2000	70.3
Number of govt. primary schools*	2002/3	481
Number of govt. secondary schools	2002/3	132
Language of instruction	—	English

* The categories "govt. primary schools" and "govt. secondary schools" include both government schools and government-assisted schools. Government-assisted schools are public schools operated and partly financed by the state but owned and managed by private bodies, usually religious organizations of various denominations. The Trinidad and Tobago education system also has 63 private primary schools and 66 private secondary schools.

Sources: World Factbook, UNESCO, MOE

Source: MOE

Policy and planning

The FastForward plan has led as planned to increased competition in the telecommunications sector, including two new mobile-telephone competitors complementing competition among ISPs and in the Cable TV (CATV) market. FastForward calls for initiatives to support ICT in all levels of formal education and in the establishment or improvement of Community Information Centers (CICs) with all schools fully equipped by 2008.

Also, in response to *Vision 2020*, in 2006 the Ministry of Public Administration issued a number of "policy and procedural guidelines" for ICT-related topics, such as e-mail and Internet usage, and e-government portal development.

Note that the MOE has received funding from the World Bank to support education, but that ICT are not funded. A 2006 IDB grant of US$67,000 was matched by US$45,000 from the government to jumpstart development of the country's IT sector by increasing capacity in software development.

ICT in primary and secondary Schools

The Trinidad and Tobago education system has a long history in relation to the use of ICT in schools. Despite that history, current levels of ICT access and use are not adequate. Plans are in place, however, to significantly improve both access to ICT and the way that computers and the Internet are used in schools.

In 1984, the National Institute of Higher Education placed 4 Macintosh computers in 35 secondary schools. (Note that 1984 was the year that the Macintosh product line was launched.) This program sparked interest, leading schools to buy additional PCs, primarily IBM clones.

In 1998, oilfield-development leases tied to corporate social responsibility activities presented the MOE with an opportunity to provide more schools with ICT. AMOCO contributed over 40 schools with 10 computers each.

About 1999, the MOE purchased 720 additional computers for primary schools, with 46 schools receiving labs equipped with ten computers, a server,

ICT Resources in Schools			
School type	**Number**	**Median enrollment**	**ICT profile**
Primary schools, govt. government	481	283 (2002/3)	■ Roughly 80 schools have received 10-computer labs; many computers are no longer functioning
Secondary schools, govt.	132	817 (2002/3)	■ 2006–2007 installation of 34-computer labs, networks, computers on carts, and administrative computers in all schools

Source: MOE

and Classworks software addressing reading and math. With minimal technical support and TPD, the value returned by these and other previously installed computers was limited. In addition, the small (10–15 computer) labs enabled levels of use that were insufficient to achieve impact.

Also in 1999, a US$100 million loan to the Government of Trinidad and Tobago was approved by IDB for SEMP. This comprehensive program addresses:

- Improvement of the quality of education through measures addressing the curriculum, teaching and learning strategies, TPD and other elements
- Increased equity in education through construction of new secondary schools and upgrades to existing school facilities
- Strengthening of the capacity of educational institutions
- Studies and other measures to improved sector performance

Under SEMP, an operational plan was developed to install computer labs in every secondary school to support IT education and enhanced learning in other subjects. Conversion of school libraries to multimedia learning centers offering students open access to computers and the Internet was planned. However, progress in implementation of the ICT-specific portion of SEMP has been slow, with many limiting factors in common with other large-scale projects described in the Survey.

Primary schools
Approximately 80 of the 450 primary schools have received computer labs under government programs supported by the oil companies CONOCO and Shell as part of their CSR efforts. Of these 2,300 computers distributed between 1998 and 2001, roughly half are no longer functional as a result of age and maintenance challenges.

Under the FastForward initiative, programs are in place in 2006–2007 for distribution of 7,000 computers to primary schools, ensuring that all schools have up-to-date equipment.

Primary schools will be provided with Classwork Gold, a CAI product, supporting math and language arts. Classwork Gold offers opportunities for self-paced learning accompanied by diagnostic

assessments and remediation. Initial implementation targeted one school in each of the Trinidad and Tobago's eight school districts; all teachers in those schools were expected to participate in a four-day training intensive.

Secondary schools
Under the FastForward initiative, all government secondary schools receive labs of 34 computers each, supplemented by computers on carts and wireless connections for use in classrooms. Current and planned Internet connections are via ADSL, with some schools still connected via dial-up. Review of broadband connectivity requirements in relation to planned educational activities (e.g., video conferencing) may be in order.

An estimated half of secondary teachers have ICT skills. Between 1998 and 2001, the MOE provided training to approximately 3,000 teachers; many teachers have acquired computers for home use through a government subsidy started in 1998. Partly as a result of demand for lab-time by ICT classes, teachers with well-developed basic computer skills lack both training in and opportunity for integration of technology into their teaching practices.

Teacher professional development

Teacher training to support the FastForward agenda is provided by the University of Trinidad and Tobago, which offers all in-service teachers the opportunity to participate in a four-year, part-time ICT professional development program. The incentive for participation is the potential for significant increase in salary, in combination with free tuition offered to all government personnel via the Government Assistance for Tuition Expenses (GATE) program.

From 2002 to 2004 the OAS sponsored a program to train primary teachers to develop and integrate e-content through a program implemented by the National Institute of Higher Education, Science and Technology (NIHEST), which also trained teachers in Antigua, Belize, Guyana, and Jamaica. Fifteen to 20 teachers were trained to use technology in the classroom and to use Macromedia software to develop multimedia learning resources. An additional 300 teachers were trained with support

Teacher Professional Development Programs

TPD program type	Target population	Objectives	Scale	Barriers
Community College courses	In-service primary and secondary teachers	■ Familiarize teachers with ICT	■ Open to all teachers	■ No incentives ■ Few teachers have completed course
Microsoft Partners in Learning	In-service primary teachers	■ Provide teachers with basic IT skills ■ Train teachers to integrate technology into their regular curricula	■ Two teachers per schools ■ Cascade model deployed when those teachers train others	■ 16,000 teachers currently in service ■ Progress is slow, the number of teachers trained is small ■ Curriculum integration remains elusive
NIHEST	Regional In-service primary teachers	■ Train teachers to use ICT in their classrooms ■ Train teachers to use Macromedia software to develop learning resources	■ 20 teachers ■ 300 additional teachers received similar training from MOE	■ Lack of multimedia tools (e.g., digital cameras) in schools

Sources: MOE, The Natoma Group

from the MOE. However, the impact of this project was limited by the absence of tools—including digital cameras, multimedia projectors, and Internet connectivity—that were crucial for continuation of skills gained via training.

Tertiary education

UWI offers administrative support and resources via the Internet, including email addresses for staff, and a student portal for the contact-based St. Augustine campus that allows students to manage their profiles, access email accounts, and perform other administrative functions. A limited number of courses are supported by e-learning delivered via WebCT (an integrated learning package for higher education). As of 2006, students can also use the portal to access electronic editions of journals and other publications to which the university library subscribes.

UWIDEC operates six campuses in Trinidad and Tobago. These campuses offer online admissions (via email and downloadable forms).

The recently organized University of Trinidad and Tobago offers a small array of full- and part-time undergraduate and graduate programs targeting development of capacity in industrial arts and sciences, and related fields including education. Applications and information are available online.

Nonformal, distance, and open education

As mentioned previously, FastForward calls for the creation of CICs to support both formal and non-formal learning as well as access to government services and other resources. The CICs and the overall development of Internet access in Trinidad and Tobago will be complemented by several other initiatives that remain in the planning stages:

■ LibraryNet will offer access to catalogs, downloadable resources, and other information.
■ Skills and Knowledge for the Information Era (SKIE) will offer training and job creation in the technology sector for young adults
■ Student Connections will engage new college graduates in supporting the CICs and the development of e-businesses

The MOE is also planning a national open school. Open School Trinidad and Tobago will provide youth and adult school-leavers with enhanced educational opportunities, including the ability to gain essential ICT skills.

EMIS

The MOE has started planning and procurement processes for EMIS. However, the timeline for these processes is not known.

Barriers and challenges

- **Teacher attitudes toward ICT are not positive:** Teachers are not engaged in the process of ICT implementation in schools. Given the vision of comprehensive and systemwide use of ICT for learning, this situation must be addressed directly.

- **Technical capacity in the MOE may be inadequate:** Respondents stated resource allocation to the MOE's IT unit is too low, limiting TPD opportunities, development of curricula and resources, and knowledge sharing. As a result, respondents suggested that TPD should focus on the ability to make good use of less powerful computer hardware and software.

- **IT curricula may limit use of ICT for FastForward activities:** In many schools secondary-school teachers of computer science and IT, in particular, may replace out-dated hardware and software rather than allowing incoming resources to be used by teachers and students in other subjects.

- **The FastForward program is not supported by curriculum or assessment:** Development or introduction of learning resources mapped to existing curriculum has yet to progress—teachers may find that mobile computers and data projectors are potentially important resources limited by lack of relevant content. Allocating resources directly to schools to create curriculum teams or resource teachers may be one way of addressing this challenge.

- **Maintenance remains an issue:** Service contracts and warranties are inadequate for computers' and networks' day-to-day requirements. Plans have been made for district-level IT units, but these plans have yet to be implemented.

Lessons learned

- **Address maintenance and repairs during planning and procurement:** The first purchase contract entered into by MOE (2000–2002) did not include provisions for service or installation. As noted previously, roughly half of the computers installed in schools prior to 2006 are no longer functional.

- **Individual schools should plan their use of ICT:** Schools are now strongly encouraged to develop IT plans prior to receiving new hardware. Planning committees comprised of all five department heads and led by the deputy principal are intended in part to offset the practical and political strengths of head IT teachers.