Teacher training sessions are an integral part of the TICE project.

ICT for Education in Burkina Faso

Lessons learned from the TICE-Burkina project

This brief describes the lessons learned from one of the IICD-supported projects in the Education sector. It is intended for practitioners in the field who would like to learn from the experiences of this project as well as organisations that would like to implement similar systems.

The brief takes much of its learning from the evaluation exercises that have been performed by the project, with the help of IICD and local Monitoring & Evaluation (M&E) partners. This evaluation system consists of questionnaires filled in anonymously by the end-users of the project on a yearly basis (all users of the project or a representative sample) and analyses of the data coming out of these questionnaires: user profiles, use and satisfaction levels, and the impact of the project. It also consists of Focus Group meetings attended by the project team members and end-users, to reflect on the data and discuss successes, challenges and solutions.

Apart from the lessons coming out of the evaluation data and discussions, many other lessons have also developed over the years. These too have been captured in this thematic brief. The brief has been constructed in close collaboration with the project partner. The project team and IICD are available to provide further information on specific items or answer any questions that might arise after reading the report. For more information about the project in particular, and IICD in general, please see the last page of this thematic brief for the website addresses of all the organisations involved in the TICE-Burkina project.

Context

A supply of skilled human resources is a matter of permanent concern to all countries in the world. Developing countries in particular need high-quality human resources to take on the many development challenges facing them. It has long been recognised that ICT has great potential for

Burkina Faso

education, and all education and training authorities are trying to exploit this potential, with the aim of improving the quality of education provided at all levels. In Burkina Faso, only 2% of the country's 662 secondary schools had any form of computer equipment during the 2007-2008 school year. Under these circumstances, these schools cannot exploit the potential of ICT for improving educational quality and keeping abreast of the latest methods and innovations in the education sector.

Several initiatives aimed at harnessing the educational potential of ICT were undertaken very early on in Burkina Faso at the beginning of the 1990s. One of these was the Global Teenager Project (GTP) initiated by IICD, which promoted the use of ICT in the classroom in order to improve the quality of instruction. The project was implemented by the company Zongos Consulting & Productions. In 2004, based on the lessons and experience from the GTP project, Zongos launched the pilot project "Information and Communication Technology for Education in Burkina Faso" (TICE-Burkina) to promote the use of ICT in the classroom to improve educational quality in Burkina Faso. Twelve secondary schools – five in the capital city and seven in the provinces – took part in this experiment. The project, in conjunction with resource persons from the ministry, selected the schools on the basis of specific criteria: the commitment shown by the school management and parents, geographical location, the availability of certain items of equipment, experience in using ICT, and the supervisory staff available (particularly teachers), etc.

Project objectives and activities

The objectives of the TICE-Burkina project are:
- Capacity building for all categories of stakeholders within secondary schools;
- Production of teaching/learning materials that are suited to the local context and follow the official programme laid down by the ministry in charge of secondary education;
- Advocacy of the use of ICT for education, addressed to decision-makers at all levels (schools, local and central government); Facilitation of access to ICT equipment and Internet access;
- Use of educational technologies to teach classes.

The project pursued these objectives through a number of activities:
- Building the capacity of stakeholders in senior secondary

Burkina Faso Profile

Land area:	274,000 km²
Population:	13. 2 mln
Life expectancy:	48.1 years
Net enrolment ratio (primary)	21.8%

Source: World Development Indicators database, 2006.

Access to communication technologies
per 1,000 people

Mobile phone subscribers:	19
Internet users*:	4
Personal computers:	2

Source: World Bank, ICT at a Glance, 2004. * Year not specified

Data on secondary education

Net enrolment ratio (secondary):	14.67%
Avg. class size:	54 pupils

Source: Annuaire Statistique de l'enseignement secondaire 2006/2007, May 2007, DEP/MESSRS.

Information on the TICE-Burkina project

Sector:	Education
Number of end users:	1,500
Target group:	initially teachers, but beneficiaries now include pupils, school administrators and principals.

schools to make use of ICT in their daily activities: initiation to office automation software, development of educational content, management and maintenance of ICT equipment and computer rooms;
- Organising seminars to inform educational decision-makers at the local level (principals and assistant principals of junior and senior secondary schools) and regional level (regional directors) about the potential of ICT for education;
- Participation in the ministry for secondary education's activities under the sectoral policy for integrating ICT into education;
- Provision of computer equipment and internet access to secondary schools;
- Technical and logistical support to teachers in the production of educational content;
- Support to other initiatives seeking to integrate ICT into education. For example, TICE-Burkina assisted the GTP Burkina project in several ways: capacity building for teachers of virtual classrooms, meetings to exchange information among these teachers, and certification days.

Children playing a computer game in association with Yam Pukri, a local organization that familiarizes young people with computers and the Internet.

Project impact

Equipment provided by the project
"I can use the computer to perform some tasks for my job."
Integrating ICT into education is simply impossible unless schools have at least some computer equipment. In this respect, TICE-Burkina chose to build on the existing equipment situation in secondary schools. It mainly used the system established by another project (BAD IV), which provided some 15 secondary schools with computer labs containing 15 computers each. The network of senior secondary schools set up by the GTP project was also used. TICE-Burkina made it possible to accomplish more with the equipment, some of which was considerably under-used. For some of the partner schools, it was necessary either to install the entire computer lab or to supplement the existing one. As a result, some 50 more computers were installed in senior secondary schools, as well as ten internet connections and ten local area networks (LAN). Peripherals (scanners, CD-write drives and printers) were provided to various partners in junior and senior secondary schools. TICE-Burkina thus helped to raise very slightly the pupil-computer ratio in Burkina Faso.

Capacity building
"I'm not computer-illiterate any more."
The TICE-Burkina project has enabled over 1,500 people – pupils, teachers, supervisors, librarians, administrators and school managers – to learn to use basic office automation and internet tools to communicate and search for information. For each computer lab in the partner schools, there are at least two people in the school capable of performing basic maintenance of the computer equipment available. In addition, some 20 teachers are now able to design and produce websites and educational content using a variety of tools for publishing Internet content. The training in multimedia tools that TICE-Burkina provided to a number of teachers is beginning to bear fruit in the form of educational videos and documentaries.

A sample of recent observations made by teachers participating in the project indicates the many diverse ways in which they put their new ICT skills into practice: "I created my own website; I organised video-conferences between pupils in my school and a Swiss school; I produce higher-quality documents at the school secretariat".

Improving lesson content
"I found out about new teaching methods."
The impact of capacity building and the ICT equipment provided is indicated by the existence of some 12 websites created by teachers for the benefit of pupils and other teachers. An increasing number of secondary level teachers participating in the project supplement the lesson content delivered in class with teaching resources obtained over the internet. There are now CD ROMs of teaching resources,

compiled and distributed by teachers.

In schools that have a video-projector, an increasing number of lessons include digital educational resources. One of the teachers stated, "The content of the class I teach has improved." Moreover, pupils voluntarily use Internet resources to do their homework. In addition to the school websites that they have created and put online, these pupils enjoy better access to teaching and learning materials and consequently understand their lessons much more easily than before. They can do their presentations on the computer, and in some cases can ask the teacher questions directly via email. Perhaps the most important thing, however, is that pupils now have access to the latest educational news, just as teachers do.

Economic impact
"I published a video for a company."
Some teachers, in addition to using their newly acquired skills in their own schools, have proposed to use them on behalf of other organisations and of their communities, which has enabled them to increase their incomes. For example: "I now handle maintenance for the computer in my school and those belonging to people in my neighbourhood." This example shows that capacity building can have an economic impact.

Sharing knowledge, resources and best practice on the use of ICT
"I participate in online discussions."
The technical autonomy acquired through training does not merely raise teachers' incomes; it has also given beneficiaries more self-confidence and enabled them to form a discussion group called the Network for The Exchange of Knowledge on ICT for Education in Burkina Faso (or ICT-Educ-BF). The discussion list that they use allows them to share not only resources and knowledge but also educational practices that incorporate ICT.

Awareness-raising for decision-makers
"I now incorporate ICT more effectively in teaching."
More than 200 school principals, assistant principals and managers attended awareness-raising seminars organised by TICE-Burkina on opportunities to use ICT in education, and on how to integrate ICT into secondary education. The project thus informed local decision-makers about ICT for education and helped to make them aware of the potential of these new tools.

What are the challenges?
Female participation in the project
One of the foremost challenges is to increase women's participation in project activities. The project is considering the creation of a pool of women teachers to run the 'gender programme' and training specifically targeting women. For example, in some geographical areas (such as Pô), women teachers who had not yet participated in the project were identified for training and participation in project activities.

For one of these teachers, the training was an excellent opportunity to get involved with ICT, and this did not go unnoticed: after taking several training courses in ICT, she was appointed secretary to the regional director, a post where she could apply her new skills. After this period, she took another career step by obtaining a post at the ministry. According to her, it is a question of motivation and perseverance: "if you are ready to put in the extra hours, it always pays off".

Although dropout rates remain relatively high, other women who did not continue with the training sessions were also able to use their newly acquired skills to "install computer equipment, search for information on the Internet, and use word-processing software and spreadsheets like Excel."
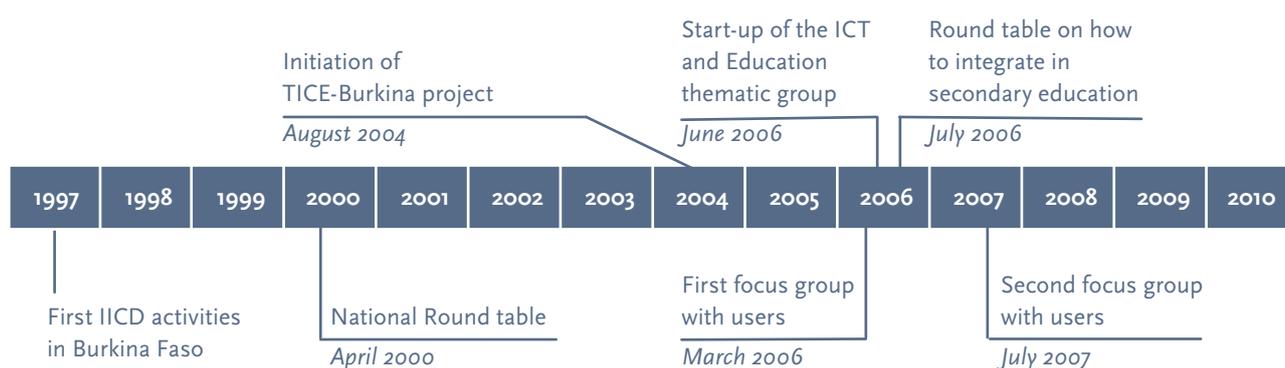
The organisational impact is lagging behind
The impact on organisations or on the sector as a whole is measured by indicators such as improvement in teaching and learning materials and teaching techniques, access to infrastructure and connectivity within schools, and teachers' professional development. Over the course of the project, the impact on the sector declined slightly and showed a tendency to lag behind the other impact indicators. The possible causes for this were analysed during the focus group meeting. Some participants explained that teachers do not have enough incentive to participate in training activities in their secondary schools, because they can make more money by teaching in private secondary schools during the same period.

The consequences of participating in the project are not always seen in terms of pecuniary gain or increased recognition of the teacher for his/her newly acquired skills. Moreover, it is quite difficult to apply these newly acquired skills owing to constraints on resources, such as a well-equipped computer lab, a budget for photocopies or printing, etc. This may be due to the fact that schools do

Two young girls in Ziniare draw on the school computer with an audience of curious students.

Timeline

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010

Initiation of TICE-Burkina project
August 2004

Start-up of the ICT and Education thematic group
June 2006

Round table on how to integrate in secondary education
July 2006

First IICD activities in Burkina Faso

National Round table
April 2000

First focus group with users
March 2006

Second focus group with users
July 2007

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not always regard ICT as a high priority, or because the costs are not covered by the credits allocated to junior secondary schools.

A focus group meeting in 2006 identified a number of measures that could address these challenges, and most of these were adopted by the ICT and Education Group, including more awareness-raising sessions and better communication to ensure that all interested parties see the value and potential of the project. But the main issue remains the insufficient level of equipment in schools: although a huge number of people have been trained, they are not yet in a position to apply their newly acquired skills as they would like to do.

At schools where the right conditions exist – such as support from school management, a computer lab, coordinators and technical resources for computer maintenance – an increase in the number of computers available can make the difference by helping to realise the unutilised potential of the 1,500 people trained in the use of ICT.

Lessons learned

Get the school principals on board

From the outset, the TICE-Burkina project team realised that it was essential to train school principals and to get them genuinely involved in the entire process. The training courses for principals focused not only on how ICT can make up for the current inadequacies of the education system, but also on how it can be used for planning, management and facilitation of the various tasks performed in schools by non-teaching staff. This showed them how ICT can raise a school's overall efficiency.

Raise awareness among other stakeholders

The project also included awareness-raising seminars for other stakeholders in education on the importance of ICT for secondary education. These activities were conducted in two regions of Burkina Faso. The objective of the seminars was to make stakeholders more aware of the potential of ICT for education and to show what has been done and is being done in Burkina Faso in this field, not only by the project but also by other parties working to integrate ICT into education.

The importance of a sectoral policy on integrating ICT into education

The political will to use ICT in the education system is now in evidence. Burkina Faso now gives pride of place to the use of ICT in education: during the 2007-2008 school year, as part of the current reform of the education system, the Ministry of Secondary and Higher Education and Scientific Research (MESSRS) provided an ICT initiation for a number of teachers from each secondary school selected during the pilot phase of the reform. In addition, Burkina Faso is formulating its sectoral policy on integrating ICT into the education system generally. The educational community is thus waiting for this policy to be actually implemented. In the meanwhile, the current situation (in which the sectoral policy is not implemented) is such that teachers run into certain obstacles to the use of ICT in their daily teaching activities: difficulties in replacing or maintaining school computer equipment, the marginalisation of activities using ICT, as well as lack of encouragement and motivation from secondary school principals.

Influencing policy

The TICE-Burkina project is one of a number of initiatives in Burkina Faso that seek to harness the educational potential of ICT. The approach adopted by the project involves a constant concern for approaching the ministry. As the results obtained in terms of capacity building and the quality of the educational content produced by teachers caught the attention of the ministry in charge of secondary education, the project became involved in some important activities of the ministry. It was closely associated with the organisation of a round-table discussion on ICT and education aimed at assembling all the ideas and opinions of the various stakeholders in education and using them for a policy paper on ICT for education. In addition, TICE-Burkina worked alongside the ministry on formulating programmes for the integration of ICT in the secondary education sub-sector in Burkina Faso.

A school computer lab in Banfora, south western Burkina Faso, part of the TICE project.

Next steps and plans for the future

The partners consider that their task is to continue to innovate by exploiting the new possibilities offered by ICT, such as Web 2.0. The involvement of women in the preparations for these training sessions is essential in order to ensure that the programme matches teachers' real needs and situations. A core group of women will be created in order to meet these needs more effectively. The project also sees a role to be played in facilitating purchases of computers by teachers; one of the best options would be to work through the central government, which not only can provide subsidies but also has more possibilities for allowing teachers to pay directly through at-source deduction of periodic expenditures from their net salaries.

The partners will also encourage the government to finish formulating an ICT policy for education and push for the official inclusion of ICT in school programmes. The TICE-Burkina project leader has become a resource person for the ministry of secondary education and helped it to formulate policy recommendations in 2007. This will probably lead to closer links between the project and ministry policy so that spin-offs could be created.

Links to institutional websites

Project website:
www.TICE-Burkina.bf. To visit the websites created by teachers, click on "Ressources" > "Sites disciplinaires de Burkinabè Profs".

The Ministry of Secondary and Higher Education and Scientific Research (MESSRS): www.messrs.gov.bf.

The National Network on ICT for Development in Burkina Faso: www.Burkina-NTIC.net. The site contains a link to the gateway of the ICT and Education Group.

Website of Yam Pukri, an association specialising in providing training, information and consulting on new technologies: www.yam-pukri.org.

Website of the partner organisation that initiated the project: Zongos Consulting and Production (ZCP): www.zcp.bf. This firm was not only behind the creation and management of the TICE-Burkina project, but is also a training partner of IICD in certain technical fields, such as Internet connections, maintenance and content development.

IICD website: www.iicd.org. Information on the monitoring and evaluation system:
http://.iicd.org/approach/monitoring_evaluation

Students of all ages benefit from ICT in the classroom.

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