International Network INASP for the Availability of Scientific Publications

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Empowering Youth and Connecting Schools: Lessons from the SchoolNet Namibia Approach

Schools in developing countries are beginning to get computers and access to the Internet. They are using them in teaching and administration; learners also use them to become computer and Internet literate. Resulting from an evaluation commissioned by Sida, this *infobrief* draws on the SchoolNet Namibia approach and its achievements. It suggests that programmes like this should give priority to the provision of affordable access using open platforms, pay attention to longer term cost of ownership issues, leverage change through partnerships, work closely with governments, involve school principals and teachers, and seek to ensure that necessary capacities are developed in schools themselves.

Quality education for all

In April 2000, the world's education community met in Dakar and affirmed its commitment to six goals leading to Education For All. These goals call for:

- expanded and improved early childhood care;
- all children to complete primary education of good quality;
- all young people to have equitable access to appropriate learning and life skills programmes;
- a 50 per cent improvement in adult literacy;
- no gender disparities in primary and secondary education;
- improved quality of education so measurable learning outcomes are achieved by all.

The emphasis on quality in the Dakar Framework for Action is important. It argues that "quality is at the heart of education, and what takes place in classrooms and other learning environments is fundamentally important to the future well-being of children, young people and adults. A quality education is one that satisfies basic learning needs, and enriches the lives of learners and their overall experience of living".

Among the twelve strategies identified to achieve these goals is to "harness new information and communication technologies" (ICTs). In terms of potential benefits, ICTs are expected to contribute towards "knowledge dissemination, effective learning and the development of more efficient education services". They can also help to "improve access to education by remote and disadvantaged communities, to support the initial and continuing professional development of teachers, and to provide opportunities to communicate across classrooms and cultures". Affordability of the ICTs is seen as a key factor to be taken into account.

In the search for quality education for all, numerous ICTs in schools projects have been launched around the world. One very visible model is the "schoolnet" that introduces computers and Internet connectivity to schools. There are now schoolnets in at least 9 African countries, there are also schoolnets in Canada, Switzerland, India, Iran, and Lebanon, there is a European schoolnet, a global schoolnet, and plans for schoolnets in 9 Southeast Asian countries. The latest evolutions in this area are the global e-schools initiative of the United Nations ICT Task Force and the NEPAD schools programme.

This *infobrief* presents some lessons emerging from one of these initiatives – SchoolNet Namibia. It is part of a wider evaluation of Swedish support to SchoolNet Namibia that was commissioned by the Swedish International Development Cooperation Agency (Sida) and carried out in late 2003. The evaluation looked at how Sida's support contributed to SchoolNet Namibia's aim to provide Internet access to schools in Namibia, how it helped to improve the preconditions for education and for the gathering of knowledge and participation in a democracy for the country's youth, and the strengths and weaknesses of SchoolNet Namibia's approach.

About SchoolNet Namibia

SchoolNet Namibia was established in February 2000 to empower youth through the Internet. Its main objective is to provide sustainable low-cost technology solutions for Internet to all Namibian schools. What does it do? In late 2003, the following main roles and tasks were carried out.

Connect schools to the Internet

In 2002, SchoolNet set up its own Internet Service Provider (ISP) hosted at the Polytechnic of Namibia. Schools gain access in two main ways – dial-up over phones using a modem, or via wireless. For poorer schools, the phone access is subsidised using funds from Sida.

Under a new agreement, these tasks will largely move to Telecom Namibia which guarantees fixed access rates for all schools, irrespective how they connect.

Acquiring computers and equipment

SchoolNet Namibia provides refurbished computers to schools. Increasingly, SchoolNet buys multiples of standard refurbished computers instead of relying on "trick or treat" containers of mixed equipment that require a lot of work before they can be used.

Building, installing, maintaining computer labs

Most schools get an Internet-connected computer laboratory. Configurations differ according to the local situation. The current package is the open source OpenLab application (which includes a bundle of educational content). Most schools still use older Linux (Suse 7.3+) solutions, some "fatclient" labs contain computers with some Microsoft and Macintosh operating systems and usually a Linux server. Until recently, all installation and support was provided from Windhoek. A depot in northern Namibia now provides local support.

Addressing technical queries

Most teachers and learners are computer beginners and they cannot troubleshoot and fix technical problems. When they encounter a problem, they call a toll-free telephone number to register the problem, receive immediate advice, or to arrange for a technician to visit.

Connecting schools to power

SchoolNet Namibia aims to ensure that any school can participate in the programme. This includes schools off the power grid. So far, SchoolNet has provided solar power sufficient for a computer lab in six schools, two of which also access the Internet by wireless.

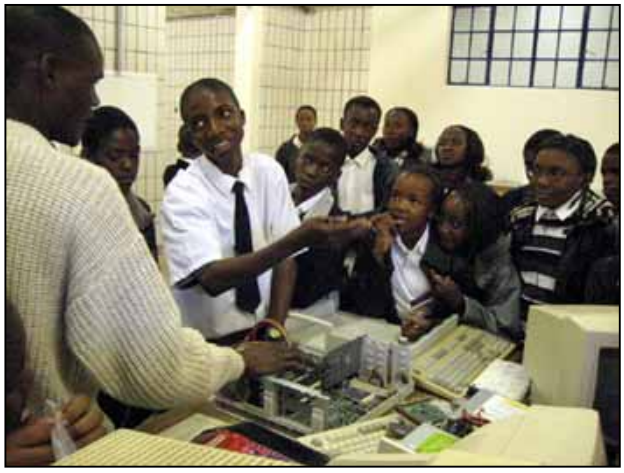

Photo: Ceiran Bishop, SchoolNet Namibia

Strengthening ICT skills and capacities

Local skills are essential if the labs and connectivity are to be used. Some initial training is provided to selected teachers and learners at installation.

SchoolNet also provides ICT learning opportunities to street kids, usually unemployed and with little formal education. Through training and mentoring, they become ICT literate. Many become SchoolNet ICT volunteers and work for a while in schools. Thereafter, some continue working in their schools, some join the staff of SchoolNet; most use their ICT skills to get a job. SchoolNet also sponsors web-based competitions for school teams to produce their own content.

Delivering educational and web content

SchoolNet mainly focuses on connectivity and computers. On the back of these, demands are growing for more content applications – beyond games – for learners and teachers. In 2003, SchoolNet joined with Direqlearn to include some educational content in new OpenLab 2 installations.

An agreement with the Government's National Institute for Educational Development makes it possible to also include their local educational materials for teachers in the bundle.

Influencing wider policies

In partnerships with Government, the private sector, and others, SchoolNet tests and demonstrates new technologies and new ICT access models.

Results

What has SchoolNet Namibia achieved? In just over two years, it launched an ISP, connected around 120 schools and many other educational groups to the Internet, and set up computer laboratories in these schools. It has also shown how these can be done in rural areas where there are neither telephone lines nor connections to the power grid.

It has pioneered affordable strategies and solutions for schools. Its models combine low-cost refurbished computers, open source operating systems and software applications, discounted access to the Internet, and the offer of ICT volunteers to provide basic ICT support after set up and installation.

It has begun to tackle the lack of ICT skills in Namibia and in Namibian schools. Through mentoring and training, young people have gained computer-related skills that help them to get jobs. In the schools, the pool of ICT-aware teachers and learners has also grown, and these individuals are starting to use computers and the Internet in both their daily lives and in the classroom.

Finally, SchoolNet has become a test bed for technical solutions that challenge more widely used proprietary operating systems. In particular, it offers alternatives that may be more sustainable over time, given limited local funding for ICTs in schools. Beyond technologies, innovative joint ventures and partnerships suggest ways that all disadvantaged schools can begin to use the new ICTs.

Key elements in the approach

Probably the most important feature of the SchoolNet Namibia approach is the focus on **affordability** – providing solutions that will ultimately be within the budgets of all Namibian schools. For cash-strapped schools, it is essential that they can afford, in the future as well as now, their ICT infrastructure and applications. By focusing on affordability and longer-term costs of ownership, schools can avoid some of the dangers of the 'free' market in which, for example, donated computers are more costly than expected. Donated 'free' computers that need licenses to be legal can result in large unanticipated costs.

Working with open source has stimulated SchoolNet to explore the real **costs of ownership** of ICTs in schools. Its model demonstrates, from a SchoolNet perspective, the typical costs needed to install and support basic ICTs in Namibian schools. This will be a critical tool for Government to help determine what resources schools will need to sustain their ICTs.

SchoolNet aims to provide **generic ICT platforms**, if possible from an open perspective. Because it does not have its own applications and products to 'sell', the schools get neutral platforms that they can use for various purposes and projects. They thus avoid being 'locked in' to any specific system or software that may restrict future options and applications.

SchoolNet forms **partnerships** with specialist organisations to jointly address the ICT needs of schools. The joint venture with Telecom Namibia to create a Trust to support affordable Internet connectivity in schools shows what can be done.

Lessons

What can be learned from this experience? As well as the many achievements, SchoolNet Namibia faces many challenges and issues. After only a few years operating, it would be arrogant and impossible to propose any 'best' practices. Instead, we list some aspects of its experience that may assist others in developing activities in this area.

1. Sustainability in schools is closely linked to the affordability of the ICTs. To be affordable, it is not enough to provide cheap or free computers and connectivity, the wider costs of ownership now and in the future need to be known.

2. From a 'supply' perspective, ICTs can be made more affordable, and thus accessible to schools. These include the use of volunteers, refurbished computers, open source operating systems, and providing discounted or free connectivity.

3. However, a well-informed 'demand' from schools and the wider education system is necessary to ensure that ICTs are sustained in schools. Principals and teachers need to understand the wider potentials of the ICTs and to take ownership of them. This is much more than just becoming computer-literate.

4. Providing an affordable and open ICT platform in schools is essential. Getting it used is quite another challenge. It requires commitment from the school and probably the involvement of specialised partners in areas like e-learning or content development.

5. The government has a vital role in this area. Since ICT developments in and around schools often move much faster than ministries are able to determine policy and standards, it is vital that the various actors communicate effectively and work towards common goals and priorities.

6. The schools are key stakeholders and partners in this type of exercise. Their active involvement in the programme should result in dividends in the future. Seeing them as 'beneficiaries' may miss out on opportunities for the sustainability of ICTs in both schools and of a 'schoolnet.'

7. There is a tension between installing ICTs in new schools and supporting ICTs in partner schools. Since many schools do not have in-house ICT expertise, the technical support

challenge can grow substantially. Without good support, schools and other actors may become disenchanted with the whole programme.

8. Some tasks, such as providing and supporting Internet access, can be delivered through partnerships with specialised agencies. Getting the attention of the prospective partner requires that the feasibility of the 'market' is tried and tested, that enough credibility is built up, and that a political demand is created.

9. Ultimately, a schoolnet may see its core tasks evolve from the implementation of technical tasks to a situation where, through partnerships, it enables and mobilises the efforts of others, directing them towards shared goals.

10. ICTs can contribute to the quality of education in schools. Through schools, they can also contribute to informal and lifelong education and the general empowerment of youth and communities. Clear goals can help to frame expectations and to set out progress indicators. Indicators are very difficult, and very important. Quantitative usage indicators can be collected – numbers of schools connected, numbers of schools connecting, etc. It is more difficult to get qualitative data on how the ICTs are used.

11. The capacities required to make effective use of ICTs in schools should not be under-estimated, nor restricted to technical skills. A wider understanding of ICT potentials by teachers and administrators is also essential.

More information

This infobrief was prepared by Peter Ballantyne as part of a review of SchoolNet Namibia commissioned by the Swedish International Development Cooperation Agency (Sida). The views expressed are those of the author and do not necessarily reflect the views of INASP, SchoolNet Namibia, or Sida.

The full evaluation report is available from www.sida.se/publications or via www.eldis.org/ict/.

The Dakar Framework for Action is at:
www.unesco.org/education/efa/ed_for_all/framework.shtml

About INASP

Enabling worldwide access to information and knowledge

The International Network for the Availability of Scientific Publications (INASP) aims to enhance the flow of information within and between countries, especially those with less developed systems of publication and dissemination. The International Council for Science (ICSU) established INASP in 1992.

The objectives of INASP are: to map, support and strengthen existing activities promoting access to and dissemination of information and knowledge; to identify, encourage and support new initiatives that will increase local publication and general access to scientific and scholarly literature, and; to promote in-country capacity building in information production, organisation, access and dissemination.

International Network for the Availability of Scientific Publications (INASP)
58 St Aldates, PO Box 516, Oxford OX1 1WG
United Kingdom
Tel: +44 1865 249909
Fax: +44 1865 251060
Email: inasp@inasp.info
Web: http://www.inasp.info