

The Shongololo Interconnectivity Pilot Project: A work in progress

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ABSTRACT

The Shongololo project of the KwaZulu-Natal Department of Education and Culture in South Africa aims to endorse the notion that a school can quite effectively cross the digital divide with a single online computer that is accessible to both learners and educators and which is managed by an enthusiastic and committed information specialist/teacher-librarian or IT person. ELITS (Education Libraries and Information Technology Services: a Directorate in the KwaZulu-Natal Department of Education and Culture) believes that a bank of networked computers is not necessarily a pre-requisite for online interaction, indeed this model brings with it attendant complications and expenses that can be prohibitive.

The project was designed to run on a similar basis to the Global Teenager project with short relevant topics being set for e-mail discussion for set time periods. The initial plan called for the involvement of sixty schools: 20 developing/disadvantaged schools in deep rural KwaZulu-Natal, 20 technologically developed schools in the same province and 20 schools in and around Manchester in the United Kingdom.

The main challenges experienced in the project relate to ongoing lack of capacity, insufficient technical support, problems with use of equipment in developing schools, differences between developed and developing schools and the collapse of the partnership with the UK-based NGO. The degree of success has ranged from a school that is operating on the most basic e-mail correspondence to schools which have had learners visit one another on a face-to-face basis. Many schools are communicating successfully despite problems such as stolen hard drives, unpaid phone accounts and the uninitiated interfering with settings.

Keywords: *Digital divide, rural schools, library services, developing countries, educational technology rollout*

INTRODUCTION

KwaZulu-Natal (KZN), one of South Africa's nine provinces, has a pupil population of over 2.5 million learners and approximately 76 000 educators. Of the 6 000 schools, 27% have some sort of school library, very often simply comprising books in a storeroom. Scattered throughout the province there are also numerous education centres to provide for educator needs on a local level. The terrain and size of KZN present a challenge, especially when it comes to issues of connectivity. An additional challenge is the diverse distribution of resources; these range from historically-advantaged well-equipped urban schools which continue to enjoy world-class facilities, to mud-and-wattle schools with no electricity, no running water and little in the way of educational resources. KZN has a unique set of circumstances in terms of provision of resources, with logistical problems like no other South African province.

The KZN Education Department includes a Directorate called the Education Library, Information and Technology Services (ELITS). ELITS is mandated to cater to the school library/resource

collection of the schools. A school library policy for the province has been created and firmly entrenched within that policy is the necessity for technology within the school library/resource collection environment. ELITS does not consider computers to be solely in the realm of library administration, indeed library automation often creates its own time-consuming problems. Computers are primarily seen as a means of delivering information, be it online or offline, and to enable electronic communication between professionals and also the learners.

The principles guiding the ICT vision for ELITS are summarised below:

The rationale is that:

- ICT is seen to be a tool; a means to an end, not an end in itself;
- Computers are used first and foremost by learners and educators for accessing information as opposed to administrative work by educators;
- For computer training to have meaning, applications are taught within context and at point of need (just-in-time versus just-in-case) across the curriculum and with meaning.

Provisioning principles include that:

- Reading and literacy are not taught using a computer therefore the provision of books and libraries remains an essential in our schools. Digital libraries cannot replace book libraries;
- Where there are computers there should be a library and where there is a library there should be computers (information centres). This principle applies to all educator resource centres in the province as well as schools. Also, libraries and computer centres should be adjacent;
- A bank of networked computers is not a prerequisite for effective use of technology. A single online computer, accessible to learners and educators in a school, and managed by a nominated person such as an information specialist, provides an excellent starting point for information retrieval and collaborative learning projects, for example, Global Teenager.

The key pedagogic principles are that:

- New teaching methodologies need to be used if educators are going to use the potential of the technology (e.g. currency of information allows for authentic versus contrived problem solving i.e. PBL, problem-based learning);
- The philosophy of outcomes-based education take place i.e. learners exercise choice as opposed to traditional teaching whereby the learners all follow the same instruction (free-range versus the battery hen approach). Beyond being a sound pedagogic principle, it means that resources are more equitably shared and that learners are developing different skills through using a range of resources.

It is acknowledged that human resource requirements are central to a successful educational process and that teacher-librarians are professionals and thus need to be qualified as such (i.e. as educators, librarians and competent in the use of ICT). Teacher-librarians need to collaborate with educators to ensure that information literacy takes place across the curriculum; and they must ensure that effective information skills are taught so that learners become ethical, competent and discerning users of information.

ELITS is dedicated to creating information-literate individuals who can manage the wealth of information available online. This concept extends beyond acquiring mere information skills to making sense of this information and using it to create new and unique information.

The ELITS position is that a single online computer managed by a competent, interested individual can go a long way into taking a school from a bicycle on the edge of the information highway to a fast motorcar. The emphasis is on access to information and communication, not training in computer applications. Ideally, it is acknowledged, every KZN learner should have the resources to become completely computer literate. However, if one waits for this ideal to materialise, the learners in KZN will remain locked in a time warp of expectation and turn-of-the-last century education forever; the single online PC is therefore an interim strategy.

While committed to redress, ELITS is also committed to staying current with trends in Information and Communications Technology (ICT) in keeping with policies such as the White Paper on e-Education. It is to this end that the Shongololo Project was conceived.

SHONGOLOLO PROJECT OBJECTIVES

A shongololo (or eShongololo) is an African millipede with a black shiny shell-like skin and sensitive antennae. It is a shy creature which is seen most often after a tropical thunderstorm. When touched, it curls into a circle. Shongololo was chosen as the name for the project as on the one hand, participants have to be sensitive to others and on the other hand, hard-skinned and robust in the face of technology. In addition the project 'grew legs' quite quickly as increasing numbers of schools came on board.

Shongololo was a one-year pilot project designed to link 20 developing schools and 20 developed schools (technologically speaking) in KZN, South Africa, with 20 schools in the United Kingdom. At its start the project was run under the auspices of the KZN Department of Education and the AfriTwin Education Trust, a non-governmental organisation (NGO) based near Manchester, England.

The main objective was for learners to communicate with each other via e-mail in order to mutually solve problems, identify and enjoy differences, and discover commonalities. Twenty e-mail mailing lists were created to include three schools at a time in similar phases, i.e. Foundation, Intermediate and Senior. We also planned for:

- Communication on professional topics between the facilitators (educators) involved;
- Teacher exchanges, both locally and overseas (such as an informal internship between the librarians in the developing and the developed schools);
- E-Mail exchanges between other bodies in the school community (such as a library monitor body);
- Fundraising by the overseas schools for the developing schools in South Africa;
- Information retrieval using the Internet for both educators and learners;
- Exposure to professional mailing lists for the educators.

PROJECT OUTLINE

Developing schools in KwaZulu-Natal

KZN's ELITS Directorate made the finance available, and 20 schools in deep-rural KZN were carefully selected over a three month period. Lunga Molapo was elected as the project co-ordinator and Joy Rosario, ELITS Head Office i/c ICT, as the project manager. The KZN Regional

Heads nominated schools in their regions and all potential candidates were visited. Selected schools needed to include all three school phases as well as the three regional school circuits.

The list of criteria for selection included:

- A willingness to participate;
- Support from management;
- Preparedness to fund the online connection;
- The provision of strong security;
- A person in the school who was prepared to drive the project;
- Time for face-to-face training.

The principal in each school had to agree to the participation of the school as well as to a year long commitment from the date of the actual start of the project. ELITS reserved the right to withdraw the investment of the computer if a school failed to maintain e-mail contact for any reason (for example, unpaid telephone or electricity accounts). Should a school manage to sustain the project, the computer and all the peripherals would stay in the school and it would continue to be supported by ELITS.

Each of the schools was then provided with a Pentium 4 PC, a printer and an external modem. Software was bought and installed according to age appropriateness and this included Kidspiration, Inspiration, Literacy Bank, Dorling Kindersley World Explorer and all the schools received Libwin, a South African library automation programme. The Microsoft Schools Agreement (which provides South African state schools with free MS office licenses) was duly completed by each school and they received MS Office, Encarta encyclopaedia with atlas and dictionary as well as Publisher and Frontpage. The schools were also provided with a selection of other paper-based material, in the form primarily of reference materials such as dictionaries, encyclopaedias and atlases. In addition each school was also provided with the Dorling Kindersley Travel Guide to South Africa, a content-rich, illustrated title which provides learners with information about their own country, especially important as many have not had the opportunity to travel very far from home.

Once schools were selected, training took place over a period of three days. The principal of each school was invited to the initial orientation day as experience has shown that support from management helps avert problems. It was also important for principals to understand that a computer will not necessarily circumvent shortfalls in the education system, since a perception exists that technology is the answer to all ills; there is little realisation that technology brings its own separate and expensive issues.

Two educators from each school were trained – the teacher-librarian and another person chosen to support the project. This was necessary, given that already one of the teacher-librarians has been found by the Education Department to be ‘in excess’ and has moved on. The aim of the training was to create computer-confident individuals and ensure that all individuals had at least practised sending e-mail using Microsoft Outlook, as a skill necessary above all others for the success of the project. Permission was granted to use the Educators’ Network CD (produced by SchoolNet) in the project, primarily for the excellent tip sheets on using different software applications. A website in FrontPage was created by each trainee and the basics of FrontPage then taught in order for the site to be maintained locally. It was suggested that the schools use the national telecommunications provider (Telkom) as the ISP as it was the most reasonable dial-up option available, offering 10mgs of web space on the server. This, however, has proved to be

a problem because the 'free space' does not support Windows. Discussion is underway at present because the Microsoft School Agreement offers free software to schools and this includes FrontPage, yet Telkom does not support it. Telkom has otherwise been supportive in expediting telephone lines; schools that could provide a reference number were prioritised.

The educators then returned to their schools geared up with the necessary hardware, useful software and elementary training to support the project. The next stage required those involved at the schools to familiarise themselves with the equipment, to ensure the phone lines were available, security was in place, to get connected and start e-mailing.

Developed schools in KwaZulu-Natal

In order to identify 20 regional 'developed' schools, the Shongololo Project was advertised on InfoLink, a South African mailing list for teacher-librarians and ICT educators, which is, on the whole, representative of functional school libraries in South Africa. Participation was voluntary and it was gratifying to note the number of these schools which came forward, possibly because most developed schools have outreach-type activities and this project offered a good platform.

It was felt that the inclusion of the schools was a necessary aspect to the project as:

- It needed to be underpinned by local support;
- Local developed schools are of world-class standard;
- Children in the same country do not have the opportunity to talk to each other (while equally they enjoy the interaction with 'overseas' friends).

The facilitator in each school (usually the teacher-librarian) made contact with the developing school and UK school. Problems to date have included incorrect e-mail addresses, firewalls, unpaid electricity and telephone accounts, and school holidays. Despite these challenges, there has been interaction, including telephonic discussions, between most of the schools.

United Kingdom schools

When this project was originally mooted we planned to contact the School Librarians Network (SLN) in the UK. Fortuitously a UK-based educator working with a schools-twinning NGO was proposed as a contact and ELITS initiated contact with the NGO. Joy Rosario met the UK contact in South Africa in December 2003 and subsequently visited the relevant schools and met the UK school principals in Manchester in April 2004.

The visit consisted of a presentation at one of the participating schools, a meeting of the principals involved and visits to the other schools, which included technology colleges. These visits were revealing: for example, a "Shongololo twin" school has closed the library, put the books in storage and converted the space into two computer laboratories. The Deputy Head Teacher involved has been endeavouring to reverse the decision, as he understands what the school has lost in the process. This particular school boasts one computer for every two pupils.

'Citizenship' is a subject in the UK curriculum and several citizenship teachers are running with the project. Sustainable development, fair trade and environmental issues are relevant to learners in both countries. This is an interesting and useful development as there is plenty of material on these topics both online and offline. They also provide an opportunity to discuss issues which are

new to local learners and extend conversation beyond our current exhaustive local focus on issues such as HIV/Aids, crime and drugs. Topics for the project are therefore based on real-life problem-solving issues that are 'citizenship based' and phrased according to phase level. Topics are generated by the facilitators and pertain to issues in their schools that are of common interest.

Challenges experienced

The main challenges experienced in the project relate to ongoing lack of capacity, insufficient technical support, problems with use of equipment in developing schools, differences between developed and developing schools and the collapse of the partnership with the UK-based NGO.

Lack of capacity: The training was sufficient to build confidence. However, there may have been too much confidence without enough knowledge to back it up. For example, computer settings have been changed to the extent that it has been impossible to provide support by phone.

Lack of technical support: The Education Department has not been in a position to provide technical support. As a result, when schools 'go down' there is no one to call to provide on-site support. In theory the State Information Technology Agency (SITA) is supposed to provide support as part of the two-year warranty on each computer acquired through them and although the staff is willing, it has been unreasonable to expect them to drive hundreds of miles to fix what is normally a very minor problem.

Use of equipment: In some of the developing schools the computer has been used for administrative or private purposes and thus was unavailable for use in the project.

Differences between overseas, developed and developing schools: Some of the overseas schools, and some of our local developed schools (mostly in the independent sector), have lacked understanding and tolerance for the challenges faced in the developing schools. Consequently some overseas and local developed schools withdrew from the project despite considerable time spent apologising and explaining the challenges.

Collapse of the UK partnership: The UK-based organiser broke away from the NGO that was organising the partnership with schools in the UK. After she approached, as an independent consultant, the schools already recruited into the project for funding, many of the UK partners withdrew from the project. It then became necessary to cut ties with the UK organiser for ethical reasons and to run the project as a wholly South African venture.

Further challenges included the damage caused by lightning strikes to equipment in local schools and the difficulty of deciding on appropriate topics for conversation. Some of the topics mooted for discussion by South African schools – such as rape, HIV/Aids, domestic violence and teen pregnancy – have been considered inappropriate discussion topics by UK schools, despite being daily realities for South African learners, even at the primary level. 'Safe' topics, such as animal rights or genetically modified foods, equally, have been considered quite trivial and irrelevant locally.

Successes

The most immediately visible success of this project has been the delight and amazement of educators and learners alike as they receive their first e-mail! The degree of success has ranged

from a school that is operating on the most basic e-mail correspondence to schools which have had learners visit one another on a face-to-face basis. Many schools are communicating successfully despite stolen hard drives, unpaid phone accounts and the uninitiated interfering with the settings.

It is already evident that as the project grows there will be significant benefits to educators and learners alike. Everybody involved in the Shongololo Project has experienced a steep learning curve, including the project managers. ELITS and the KZN Department of Education as a whole continue to be supportive of the project, especially as the lessons learned to date will ensure sustainability.

The Shongololo project is informing the rollout of other connectivity initiatives. The project is now being used to persuade key stakeholders that the information highway is accessible for both learners and educators. As and when funding becomes available, the project will grow and it is hoped that there will be a reciprocal exchange with other countries as well as within KZN.

CONCLUSION

The aim of the Shongololo project is to facilitate communication, build confidence and enhance skills for school educators and learners alike. There has been a considerable investment in both time and money in this project, with the ELITS Directorate committing itself to its success. It is vital to demonstrate that a single online computer in a school can make a difference to education. As the dynamics of the project change so will the management. It is not possible to foresee all the challenges that may arise, especially as they include the specific internal issues which differ from school to school. A belief in global connectivity and thus cross-continental relationship building remains core as a *raison d'être* of the Shongololo Project and it will thus be continued, no matter how demanding the challenges.

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