

A valuable lesson in education

Boksburg high school starts digital revolution in classroom

BRENDAN PEACOCK

IN an unassuming suburb of Boksburg, located just off the N17 to Springs in Gauteng, the most forward-thinking government school in South Africa shares something in common with some of its peers: it has no textbooks. However, this state of affairs is entirely by choice because Sunward Park High School has gone fully digital.

To date, three schools in South Africa have gone digital, two of them private primary schools. Sunward Park's initiative took the Department of Education by surprise and its changeover business model is being analysed for three months by a departmental task team to provide a case study.

"The department is using this information to inform the e-learning strategy we are developing," said Charles Phahlane, head of communications of the Gauteng department of education.

If this sounds a little like a vague scramble, it is because Sunward Park conducted all its own research and sought its own sponsors. "Back in 2008 we had the idea to install smartboards for the science department. From there, teachers could motivate for the installation of a smartboard from the school's discretionary budget. Today we have 42. Soon all 52 classrooms will have smartboards. The smartboard bundle includes the board, projector and a laptop for the teacher," said deputy principal Enoch Thango.

In 2010, hotel and resort group Peermont wanted to sponsor school

projects, and after evaluating about 100 candidates it sponsored seven.

"We got Macbooks and a science lab with iPads. We started using apps for teaching, but teachers had to book equipment and it wasn't an ideal situation. We allocated them to student journalists during the Fifa World Cup and some of their video content was broadcast on DSTV channels. We saw how keen they were and we knew we had to embrace more technology," said Thango.

The school has 1 225 pupils.

"In June 2012 we had been looking at introducing tablets or iPads when we read an article featuring MIB Technology and some ICT solutions they'd been installing in rural KwaZulu-Natal. We liked what they

We filled the hall with parents three times over; only a few had concerns

were doing and invited them to present a proposal for the school," said Thango. "They devised a solution that used tablets and a portal with resources loaded onto a server — a digital library including Learning Channel videos, web books and other digital learning content that would all be fed through a Wi-Fi hot spot covering the school."

The digital library also stores past exam papers and marking memos, content from National Geographic, Wikipedia, TED Talks, material from the Massachusetts Institute of



TECHNO-BOFFS: Enoch Thango, deputy principal of Sunward Park High School in Boksburg, and his pupils use tablets to study

Picture: SIMPHIWE NKWALI

Technology and further content from the Royal Society of Chemistry, and Mindset Learn is on the way.

"The school pays a R5 000-a-year licence fee. We first addressed the students about our intentions and then we asked all the parents to vote — which they did in an overwhelming majority — for the digital system. We filled the school hall with parents three times over and only a few had concerns. Till today, no students have been mugged and the four cases of theft in seven months are, by number, relatively low compared

with the usual theft of cellphones," said Thango.

Sunward Park negotiated aggressively with textbook publishers and benefited from early-mover advantage. "Macmillan was the first publishing house to agree to sending us content in digital format. They agreed to a substantial discount, but to fulfil the requirements of the Gauteng department of education catalogue we also had to source elsewhere. Pearson agreed to fill the holes and we managed to negotiate an affordable complete package. In

fact, the publishers offered us a four-year licence for each book, which means the price of each textbook is effectively 25% of what it was."

Parents were spending R1 800 to R2 000 a year on textbooks, which has been brought down to a licence fee for each tablet of just R300 a year. "We had to agree to locking in the content on each tablet because the publishers were worried about copying, so the content is protected and cannot leave the device."

Next the school had to make sure the tablets were affordable. "We

came down to two options: a 7-inch display for around R1 000 or a 10-inch display for R2 000. Most parents went for the 10-inch device. MIB provided the entire solution, using a supplier in Midrand for the tablets. Some parents have opted to supply their own devices, in which case they pay only the R300 licence fee."

The Wi-Fi server has the capacity for the large number of connections required as well as space for content and back-ups; it cost R60 000. The portal cost a further R30 000 and the Wi-Fi technology R250 000, and the school spent just less than R800 000 on e-books.

"There is obviously a challenge if the prescribed textbook changes while the licence is in place, but the publishers have agreed to let us either swap out the books we use or get credits on remaining licences. The R300 licence fees we collect go towards books, maintenance and re-couping costs. We used two years' allocation of our Gauteng education department budget to put the system in place, with special permission, and we reimburse the kiddy as we go along. The department was supportive and we just had to apply to deviate from the usual allocations."

"Will pupils still learn how to write?" "We have kept some traditional work forms — class work and homework are done in exercise books. But there are many advantages to going digital. We found a free learner-management system called Moodle for teachers to prepare and set up lessons. We're busy training teachers in delivery using the system and creating question banks for tests. Marking is automatic in Moodle, and it helps greatly with going back to do revision work where students have clearly been struggling," said Thango.

All content from Macmillan allows modification — such as highlighting, crossing out and making notes — and contains embedded content such as videos. Teachers can upload notes and materials to the server.

"The deputy minister of education was present at the launch and 100 principals came to see the system. Forty stated their interest immediately. We have hosted schools and we've been invited to conferences such as African Education Week to showcase our classroom system. We've been extremely busy, commanding a lot of attention and many schools are showing interest. It's the first of its scale in a school so there have been some teaching problems, but we've given ourselves a year. MIB had to modify their solution hundredfold to meet our requirements, so it's also meant a growth path for them. We're in the process of fine-tuning the system, and of course there are external issues like Telkom exchanges and cable theft to contend with."

A learning experience all round

WHEN MIB Technology began working in rural KwaZulu-Natal 16 years ago, it "just wasn't possible to consider using broadband to power learning solutions for schools", said Vivian Naidoo, the company's owner. "So the idea was born to use a Wi-Fi hot spot."

For the Boksburg project, the company also had to find appropriate devices that had, for example, the right battery life and were affordable.

"The research and development was quite expensive," said Naidoo. But vendors and manufacturers allowed the company to pass on any price benefits to Sunward Park High School.

"Mostly, the content has been

We didn't realise how much they would be saving — it's affordable for any school

supplied by open education resources, but the three biggest players — Learning Channel, Learnthings Africa and Mindset Learn — have now become involved with fully digital content."

The process also transformed the technology company. "MIB has grown R50-million in business out of this project," said Naidoo. "Because it's simply impossible for one company to monitor and maintain systems in schools around the country, our model is to go into the community and train and share skills with entrepreneurs, who then look after and service the equipment once it's installed."

"In total, Sunward Park spent R2.4-million between the parents and the school, and I expect they'll get that money back in savings. We didn't realise how much they would be saving — it's affordable for any school. It gets resources into kids' hands and the knowledge economy in South Africa needs this."

"The Department of Basic Education is keen. We're demonstrating to them nationally and they're recognising us for aggregating educational resources under one roof," said Naidoo.

— *Brendan Peacock*

Invitation to tender

Hire of AS350 B3 Helicopter for Boulders-Khanyazwe - Mpumalanga

Roshcon SOC Limited hereby invites bidders to submit tenders for the whole of the works:

Tender no	Contract period	Closing date and time	Contact person
ROSH/2013/03	Approx. 300 hours	August 22, 2013 at 12:00	Noma Ndlovu Tel: +27 11 621 3108 E-mail: NdlovuNo@eskom.co.za

Tender documents are available from Monday, August 12, 2013 to Thursday, August 15, 2013 during working hours at Roshcon's offices, Heritage Office Park, Cnr Hundlet and Lower Germiston Road, Rosherville.

1. Mandatory pre-qualification criteria:

Commercial and financial:

All tenderers must qualify to be registered as a supplier and for this purpose the following documents must accompany their tender:-

- Original and valid SARS tax clearance certificate (Gatekeeper)
- Valid letter of good standing obtainable from the department of labour or stamped proof of registration with the compensation fund for workers compensation - including that of subcontractor if subcontracting will be applicable (Gatekeeper)
- Detailed audited financial statements for the last two (2) years (Gatekeeper)
- Certified copy of B-BBEE verification certificate obtained from an accredited verification agency or a letter from the auditor confirming business annual turnover and ownership
- Original cancelled cheque or an original stamped letter from the bank confirming the tender's banking details.
- Certified copy of VAT certificate
- Business profile
- Proof of UIF Registration
- Proof of general liability insurance covering plants and labour
- Certified copy of your business registration documents
- Certified copies of the ID documents of directors and shareholders /partners/ members/ sole proprietor.
- Acceptance letter to register as a vendor on Eskom portal with the list of documents required (Gatekeeper)
- Certificate of compliance with the Employment Equity Act
- Proof of pilot qualification, to execute external load long line vertical reference flying – provide certificate (Gatekeeper)
- Pilot experience level – minimum of 500 hours vertical reference flying experience – please provide confirmation letter indicating pilot experience (Gatekeeper)
- Single engine turbine helicopter – capable to lift external loads in excess of 900kg at 5000' AMSL at 25 degrees centigrade and to land in unprepared mountainous confined landing areas – registration documents to be provided (Gatekeeper)
- Proof of previous work completed – project requirement: target size 500mm. The placement is a load in excess of 900kg, with precision placement within in area of 500mm (Gatekeeper)
- SHEQ plan
- Fire control

"In terms of the Preferential Procurement Policy Framework Act (PPPFA) the 90/10 scoring system will be applicable to this tender. Failure to submit a B-BBEE certificate will result in the tenderer not qualifying for preferential points."

Roshcon reserves the right not to evaluate and consider the tenders that do not comply strictly with this tender document.

Roshcon reserves the right to enter into mandated negotiations with any one or more selected tenderers in accordance with Roshcon's approved Procurement Policies and Procedures.

Roshcon also reserves the right to:

Cancel this tender or any part thereof at any time, Accept any tender in part of full at its own discretion,

Not to provide any reason whatsoever for the rejection for any or all tenders,

Contact any supplier during the evaluation process in order to clarify any information without informing any other supplier,

Reject a tender based on the aesthetic appearance only,

Award a contract to one or more suppliers,

Audit the contract from time to time.

Submission of the following duly completed documents (these will accompany a document that contains all details that will enable tenderers to compile their tender bid (RFT) that will be handed to participating tenderers):

- Authorisation form, declaration of interest form, declaration regarding fair bidding practices, confirmation of receipt of addenda to tender documents

Quality and technical

- Proof of SHEQ management system equivalent to ISO9001, ISO 14001 and OSHAS 18001, pricing schedule

2. Tender logistics

Prices to exclude VAT. Late tenders, telegraphic tenders or tenders sent by fax or e-mail will not be considered. Roshcon representative will publicly open the tenders, read out tender's names and disclaimer. Prices will not be read out.

2.1 Tender queries

All enquiries related to the tender must be submitted in writing to the company representative: Mrs Noma Ndlovu by no later than Tuesday, August 20, 2013 by no later than 12:00 pm email: NdlovuNo@eskom.co.za Tel: +27 11 621 3108.

2.2 Tender submission

Method of submission: Tender box deposit (No faxed or emailed or posted tenders will be accepted). The bid must be submitted in two closed envelopes (reflecting tenderer's name on each envelope) (one original and one copy) in separately sealed envelopes and placed in the appropriately denominated Roshcon tender box. Tender documents addressed to: "Roshcon SOC The Procurement Manager Enquiry ROHS/2013/03" & deposited in the tender box located in the Rotek Engineering Security Office, Stand 46 and Lower Germiston Road, Rosherville.