MPUMALANGA DEPARTMENT OF EDUCATION

ABSA LIGBRON ACADEMY OF TECHNOLOGY PROJECT

**Development of an ICT interactive learning environment:
Ligbron Academy of Technology, Umzimvelo Combined
School and Camden Combined School in the
Gert Sibande Region, Ermelo**

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1.   NAME OF THE PROJECT

The Development of an ICT interactive learning environment at Ligbron Academy of Technology, Umzimvelo Combined School and Camden Combined School in the Gert Sibande Region, Ermelo

2.   PURPOSE OF THIS PROPOSAL

The purpose of this proposal is amongst other, to set the guidelines relating to:

- The background of the project
- The rationale of the project
- The scope of the project and
- The objectives of the project

3.   BACKGROUND

A global revolution is currently taking place in education and training. It is driven by the changing nature of work, the realities of the information age, new global partnerships and an awareness of the need for equal distribution of educational opportunities.

If South Africans are to participate in the knowledge economy, every effort must be made to prevent social exclusion. President Thabo Mbeki has underscored the importance of ICT for social and economic development at numerous South African and international fora.
"We must continue the fight for liberation against poverty, against under-development, against marginalization" and "…information and communication technology ... is a critically important tool" (Imbizo for African Youth, 2001).

The use of ICT in Africa recorded a 20% increase in 2002, mostly due to increased usage in urban areas and countries with a higher GDP per capita. However, while 72.7% of Americans currently use the Internet, only 6.4% of South Africans have access to and use the Internet.

Within education specifically, NEPAD recognizes the pivotal role of ICT in the establishment of regional distance learning programmes to improve education delivery. In order to realize the benefits of ICT, schools must develop and produce a pool of ICT-proficient learners, from which the country can draw trainee ICT engineers, programmers and software developers. In pursuit of this objective, a network of institutions that build subject knowledge must be established.

According to the School Register of Needs (2000) only 24.4% of schools had computers for teaching and learning with a learner-computer ratio of 164:1. In Mpumalanga only 8.7% of schools had computers with a learner-computer ratio of 298:1.

In the light of the above and the critical shortage of skilled teachers in scares subjects, Ligbron Academy of Technology took a decision to develop an ICT learning environment that is different from the majority of schools in South Africa. Teachers teaching at Ligbron Academy of Technology are using ICT on a daily basis to help learners to do their work more effectively. Teachers are now working smarter and not harder.

The vision of this project in phase 1 is to share expertise, subject knowledge, lesson planning and to expand the current use of ICT in classrooms at Ligbron Academy of Technology to Umzimvelo Combined School and Camden Combined School. The plan is that in phase 2 Ermelo Combined school will be included.

4. PROJECT RATIONALE

This project is an Mpumalanga Department of Education, Gert Sibande Region, Ligbron Academy for Technology, Camden Combined School and Umzimvelo Combined School initiative to bridge the rural urban divide on both technical expertise and ICT facilities. Ligbron Academy for Technology was selected based on their advanced status on e-teaching.

Professional development time is especially important when teachers are learning new technology skills, notes Renyi (1996:12):

> "This time for learning is especially important as schools incorporate information and multimedia technologies into the classroom. When a school proposes to install these technologies, each teacher must become adept at their use, identify appropriate hardware and software for his or her subject matter and students, and sit down to work on the computer. Learning to use new technologies well is accomplished best when teachers have time available to learn in a variety of ways. Teachers need large blocks of time to gain initial familiarity with new hardware or software, learning and practicing for sustained periods."

Staff development and teacher support are to be seen as one of the key strategies to improve teaching and learning. It is envisaged that this project, through the use of ICT interactive communication and the internet will add value to the knowledge, skills and values of all teachers and learners taking part in the project and to promote effectiveness, improved results and achievements in subjects such as: Technology, Mathematics, Science and ICT.

This project will support the Mpumalanga Department of Education's vision:
PROVIDING QUALITY EDUCATION AND TRAINING TOWARDS A BETTER LIFE FOR ALL

5. PROJECT SCOPE

<u>The project intends to</u>:

- Establish high-tech wireless ICT facilities at Ligbron Academy of Technology, Umzimvelo Combined School and Camden Combined School in the Ermelo area in Gert Sibande Region;
- Support interactive learning opportunities for teachers and learners;
- Support live transmissions of Mathematics, Science, ICT and Technology lessons per planned schedule of lessons, during school hours from Ligbron Academy for Technology to Umzimvelo Combined School and Camden Combined School;
- Support classroom embedded peer teaching and peer mentoring support, tutoring and follow-up activities to teachers at Umzimvelo Combined School and Camden Combined School;
- Support opportunities for teachers and learners in the two rural schools to observe and to take part in the effective use of technology to improve lesson quality and to build capacity.

6. PROJECT OBJECTIVES

The following are the key objectives of the Project:

- To ensure ICT for inquiry. This includes using technology as media for thinking and theory building. It includes technology as a way to access data and connect to the world of text. This also includes technology for data collection and data analysis.
- To ensure effective ICT communication. It includes more direct communication technologies such as e-mail, interactive lesson presentation and the use of the World Wide Web.
- To ensure that the ICT facilities at the project schools support the instructional learning goals. The use of ICT technology must be integrated into instruction in a meaningful way so that it contributes to the attainment of high standards by all teachers and learners.
- To ensure that ICT at the project schools is used for challenging, long-term projects that promote teachers and learners' higher-order thinking skills instead of merely drill-and-practice programs to improve basic skills.

- To ensure access to and availability of ICT opportunities for all teachers and learners and to expose teachers to a variety of technologies to support their work.
- To ensure the effective utilization of ICT equipment available at the project schools.
- To ensure flexibility in managing the technology and to ensure that all teachers and learners have equity of access.
- To ensure Professional Development is considered as an important part of the project.
- To build digital and information literacy so that teachers and learners become confident and competent in using technology to contribute to an innovative and developing South African society.
- To enrich the Professional Development environment within the context of outcomes-based education.
- To develop a culture for life long learning about ICT, exploring what can be done with ICT, and learning through the use of ICT.
- Using ICT to support new ways of teaching and learning, supporting and enriching each other at the same time.

7. PROJECT CHALLENGES

The assumption is that all teachers who are part of the project are trained in the use of interactive ICT equipment and are willing to help and support teachers who are not confident in using ICT equipment.

Specific challenges are as follows:

- The importance of focusing on the use of ICT on improving the teaching and learning of academic skills, content, and higher order thinking rather than on learning how to use the technology;
- The importance of providing reliable and easy-to-use ICT that both maximizes the time educators can spend using the technology to learn and minimizes the support cost to keep that technology operational;
- The importance of teachers understanding the benefits of integrating ICT into their work compared with current approaches and tools in the classroom.
- The most important benefits from embracing the new technologies would be improved student learning and superior work flow management, from standards-based lesson planning and media use, to implementing and supporting student learning activity customized to needs, to assessment and next-step responsive teaching;
- The importance of providing easy ways for teachers to locate appropriate software for ICT that provides high-quality learning and teaching;
- The importance of addressing ICT-related change with systemic approaches that better align and integrate curriculum, instruction and assessment, and appropriate educator development;
- The importance of defining and investing in long-term research to develop and test new approaches for improving learner learning with ICT.

8. ROLES AND RESPONSIBILITIES

8.1 Roles and responsibilities of the ABSA Foundation

- Donation of R250,000.00;
- Procurement of video conferencing hardware and software;
- Procurement and installation of the V-SAT wireless connectivity;
- Procurement of the interactive Smart Boards and data projectors.

8.2 Roles and responsibilities of Ligbron Academy of Technology

- Delegate a teacher to the project as Project Manager;
- Developing and presenting lessons in Science, Mathematics and ICT;
- Developing schedules for the transmitting of lessons to the project schools.

8.3 Roles and responsibilities of the Mpumalanga Department of Education

- Appoint a Project Manager;
- To manage all project phases properly: Initiation, Implementation or Execution, Control and Close-out;
- Training of staff;
- Provide ICT facilities at the project schools:
  - 10 computers per school;
  - Installation of alarm systems;
  - Procurement and installation of Smart Boards;
  - Procurement and installation of software in physics, chemistry and mathematics;
  - Training of staff to use the software effectively.

9. PROJECT BENEFITS

Direct beneficiaries are:

The teachers and learners of Ligbron Academy of Technology, Umzimvelo Combined School and Camden Combined School.

Indirect beneficiaries are:

The educational system in Mpumalanga, the World of Work and the community of the greater Gert Sibande Region.

10.   PROJECT DURATION

It is anticipated that the life duration of this project will be six months. The Mpumalanga Department of Education is committed to sustain the project for the next 3 years.

11.   PROJECT LOCATION

The project will be located in the greater Msukaligwa Municipality (Ermelo) in the Gert Sibande Region.

Ligbron Academy of Technology

Centre from where Technology, Mathematics, Science, Technology and ICT classes will be transmitted to Umzimvelo Combined School and Camden Combined School

Umzimvelo Combined School

Camden Combined School
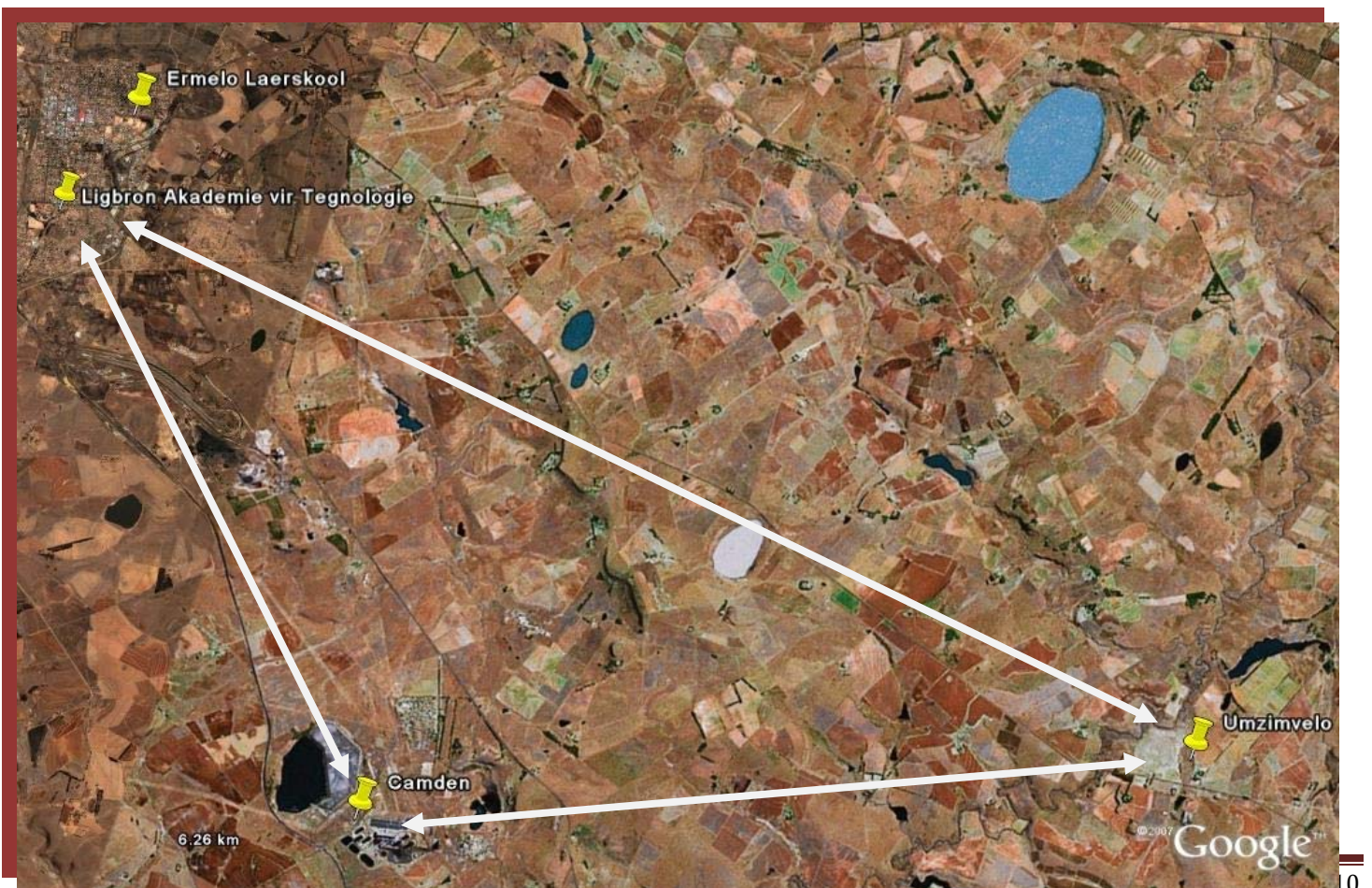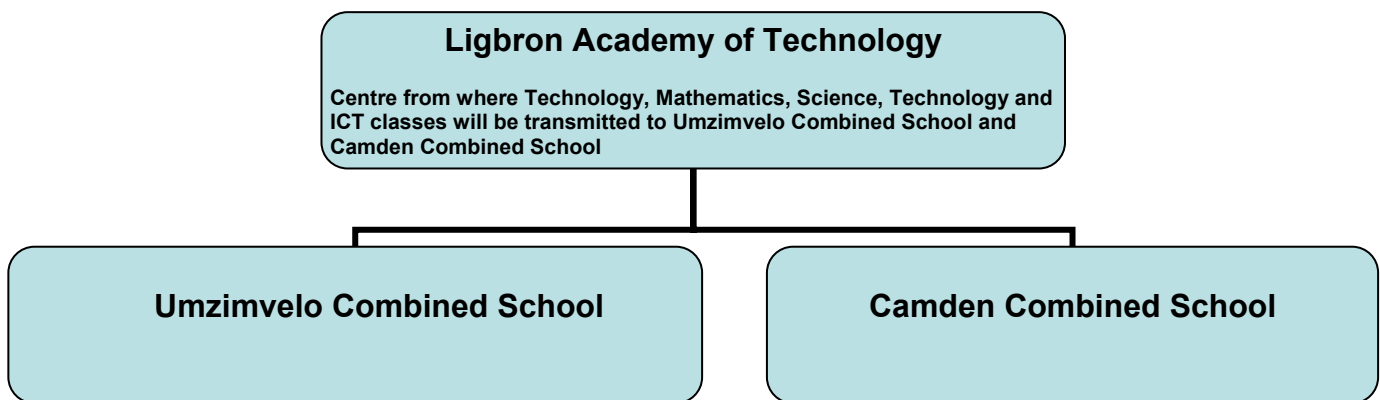
12. FUNDING

ABSA Foundation is prepared to donate R250,000.00 for the inception and implementation of the project. Mpumalanga Department of Education will have to allocate R967,567.70 towards the project to ensure the successful initiation, planning, implementation, control and close-out of the project. The Mpumalanga Education Development Trust (MEDT) will be the preferred agent to manage the ABSA Foundation contribution.

Below is a draft budget allocation for the implementation of the project.

	Description:	Quantity:	Price per unit:	Total:
1.	Interactive Whiteboard - Smartboard	6	R 21,664.30	R 129,985.80
2.	Crocodile clips - Physics	2	R 7,974.30	R 15,948.60
	Crocodile clips - Chemistry	2	R 7,974.30	R 15,948.60
	Crocodile clips - Mathematics	2	R 7,974.30	R 15,948.60
3.	Absorb - Physics	2	R 5,157.00	R 10,314.00
	Absorb - Chemistry	2	R 5,157.00	R 10,314.00
	Absorb - Mathematics	2	R 5,157.00	R 10,314.00
4.	Logitech X-540 Speaker System (Digital Planet	6	R 750.73	R 4,504.38
5.	Rubitek Wireless Microphone (Digital Planet)	7	R 378.96	R 2,652.72
6	Alarm system	3	R 5,000.00	R 15,000.00
7	Network connection and setup of computers	2	R 4,124.00	R 8,248.00
8	V-SAT Technology & Installation	1	R 24,000.00	R 24,000.00
9	Installation of V-SAT lines	5	R 5,000.00	R 25,000.00
10	Webcam & installation	1	R 14,550.00	R 14,550.00
11	Bridget soft ware,	1	R 30,774.00	R 30,774.00
12	Data Projectors & installation	6	R 16,244.00	R 97,464.00
				R 430,966.70
13	Computers	30	R 8,500.00	R 255,000.00
14	Running costs per month	42	R 6,000.00	R 252,000.00
15	Training of teachers	2	R 4,800.00	R 9,600.00
				R 516,600.00
	TOTAL COST			**R 947,566.70**

13. PROJECT GANTT CHART

Project Gantt Chart	2007 Oct	2007 Nov	2007 Dec	2008 Jan	2008 Feb	2008 March	2008 Apr	2008 May	2008 June	2008 July	2008 Aug
Phase & Activities											
Project Life Cycle	green	green	green	green	green	green	green	green	green	green	green
Phase1 Initiation & Planning	cyan	cyan	cyan	cyan	cyan						
Develop Project Concept Doc	teal										
Secure funding from ABSA	teal	teal									
Procurement of equipment		teal	teal	teal							
Install alarm systems				teal							
Delivery of equipment at sites				teal	teal						
Phase 2 Implementation & Control					blue	blue	blue	blue	blue	blue	blue
Install V-SAT Technology					blue						
Development of schedule					blue						
Set up of Equipment					blue						
Testing systems					blue						
Training of staff					blue						
Rolling out of system					blue	blue	blue	blue	blue	blue	blue
Monitoring	red	red	red	red	red	red	red	red	red	red	red
Phase 3. Close-out											black
Close-out of Project											black