

Wireless Broadband Brings E-learning to South African Schools



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Canopy Connects Learners

The Ulwazi E-Learning Partnership in South Africa has successfully implemented an e-learning initiative run on Canopy, Motorola's wireless broadband access technology. The pilot created a connected learning community by linking five schools in the Tshwane (Pretoria) area to promote shared learning, cultural experiences and knowledge.

“This project was launched in response to the dire need to improve and accelerate education throughout South Africa, particularly among disadvantaged communities where a lack of teachers, resources and funding is hindering their path to progress,” explains Ron Beyers, Ulwazi project leader.

“Lack of affordable broadband connectivity is crippling the cost of education and preventing us from delivering quality education where it's needed most. With the high-speed network we've installed, we can reach far more students and create an extended connected learning community,” he says.

The five schools - St. Alban's College, one of South Africa's leading private schools, and four schools in Mamelodi (Gatang High School, Tshwane North College, Mamelodi High School and Modiri Technical High) - fall within a 15 kilometre radius and are connected via a high-speed broadband wireless network.

The project is materially supported by a number of private companies, with Motorola supplying the Canopy wireless network and Omega Digital Technologies providing electronic whiteboards from SMART. It also has the support of the Knowledge Management and Multimedia units of the Department of Communication, the Department of Education, the CSIR Innovation Hub, the University of Pretoria, the Universal Service Agency and Schoolnet SA.

A lack of resources is hindering the progress of education among disadvantaged schools in South Africa.

The Ulwazi E-Learning pilot project, using Motorola's Canopy wireless broadband access technology, has demonstrated that inter-connecting classrooms can have a significant impact on the results of learners.



“Being wireless, Canopy is ideal for regions where infrastructure is scarce, which makes it perfect for poorly-served urban and rural areas. It has the potential to provide world-class broadband connectivity to disadvantaged communities at low cost, allowing Internet access at super-high speeds, as well as many other applications requiring high data rates, such as digital video.”

Roger Warner, business manager for Motorola's Networks and Enterprise business unit



Motorola's Canopy system operates in the 5GHz band and provides data rates of up to 7 Mbits/s. It is highly flexible, transparent, quick to configure and easy to use.

“The network is key to the execution of the project. Motorola's Canopy system operates in the 5GHz band and provides data rates of up to 7 Mbits/s. It is highly flexible, transparent, quick to configure and easy to use - in just two days, we would be able to connect another ten schools, which is how we would like to expand the project in the future. In fact, there is no limit to the number of classrooms we can interconnect, so we hope this pilot will result in a model for nationwide roll-out,” Beyers notes.

Canopy allows teachers to share skills and resources by using webcams, audio communication and electronic whiteboards. They also have instant access to material such as multimedia presentations and can interact in real time with other teachers. For pupils, it promotes cultural exchange, assistance through study groups, the development of communication skills and interactive project work.

The introduction of multimedia into the learning environment and collaboration with learners from other schools provides a much higher level of interactivity and makes the learning experience more dynamic.

Beyers adds: “The Ulwazi e-Learning project has demonstrated that a small scale pilot project can have a significant impact on the results of learn-

ers. The pilot project focused on Grade 10 Science over a period of three terms during 2004 with one hour of extra lessons per week. Learners were also able to access on-line learning resources on demand in a closed network that was specifically developed for the project.”

“The students have benefited tremendously from their correspondence with other students who are of a similar age. We have already seen increases of up to 15 percent in the marks of Grade 10 Science pupils. It is a truly empowering experience that has opened up so many opportunities for them and tapped into new potential,” says Leslie Hlangani, science teacher at Gatang High School.’

One of his pupils remarked: “We have now got access to all the information we need as well as educators to support us. There is no reason to fail anymore”.

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