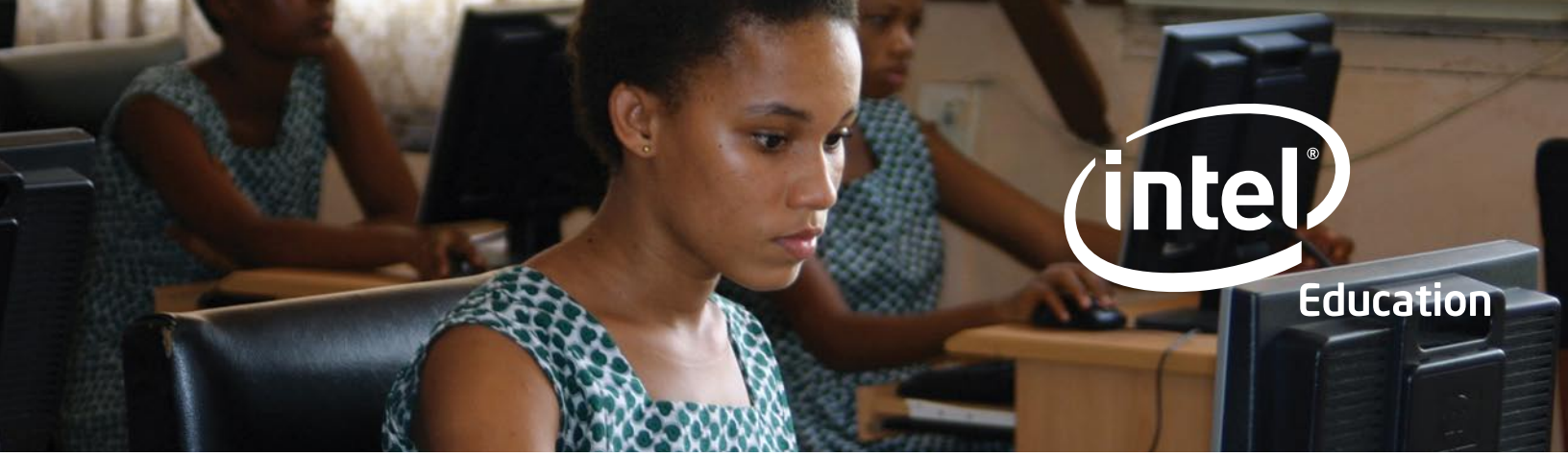

Case Study

South Africa

Intel® Teach Program

The Intel® Teach Program Promotes the Effective Use of Technology in South African Schools

"The Intel Teach Program has revolutionized the way we can use the computers that were donated to us. It has revolutionized the way we teach."

Mercy Ntlemo
Teacher, South Africa

South Africa faces many challenges in incorporating information and communication technology (ICT) in its education system, including limited access to technology, a lack of teacher computer literacy, and a need for methodologies to help students use technology. However, with the Intel® Teach Program, South African teachers are learning to effectively integrate technology in the classroom and bring 21st century skills such as digital literacy, problem solving, critical thinking, and collaboration to students.

Challenges	▪ Teachers and students have limited access to technology ▪ There is an absence of properly developed curriculum for integrating ICT into subject teaching ▪ There is a need for student-centered learning and outcome-driven educational approaches
Approach	▪ The Intel Teach Program provides hands-on ICT learning opportunities for teachers to become more comfortable with technology, allowing them to incorporate the Internet, Web page design, and project-based approaches to support learning ▪ The Intel Teach Program provides training in how, when, and where to incorporate technology tools and resources into lesson plans ▪ The Intel Teach Program training exposes teachers to new approaches for creating assessment tools and aligning lessons with educational learning goals and standards
Benefits	▪ The Intel Teach Program has helped improve ICT fluency among South African teachers ▪ Through their Intel Teach Program training, South African teachers are better prepared to develop technology-enriched projects and project-based approaches that promote 21st century learning among their students

Located in the township of Nkowankowa in a semirural region of the Limpopo province of South Africa, DZJ Mthebula High School serves a student body of 550 in a few small, single-story brick buildings. As with many rural schools in the country, funds are tight. Though there is no money for basics such as building maintenance, the school is fortunate enough to have a room equipped with computers donated to the school a few years ago by Telkom, the country's telecommunications provider.

Few teachers, however, were taking students to the computer room to access this valuable resource, said school language teacher Mercy Ntlemo. It's not that teachers did not have awareness of the benefits of incorporating technology into instruction. Their Educators' Network training had provided introductory material, and some instructors were beginning to take small steps, notes the teacher. But most lacked the specific knowledge and training to integrate technology in any substantive way.

"The teachers were using ICT to prepare their classroom activities and to type exam papers," explained Ntlemo. "In some cases, teachers were using spreadsheets for marks administration, and in fewer cases, teachers were taking students to the computer room. These activities with students were largely limited to information retrieval and simple word processing. There was little evidence of systematic planning and implementation of lessons that required students to critically think, work collaboratively, and integrate ICT in support of this kind of learning. I felt that it was time for something more than that."

Things began to change two years ago when Ntlemo enrolled in the Intel® Teach Program, a professional development program designed to help teachers integrate technology effectively in the classroom with the objective of helping students build 21st century skills. Ntlemo said that the course was offered as a "next step" solution for teachers who had participated in another professional development training course.

Ntlemo, whose job includes mentoring the other teachers at her school in ICT development, hoped the Intel Teach Program training would help her colleagues "conquer their technophobia" and give them the confidence to take students to the school's computer room for lessons.

In the program, Ntlemo learned from other teachers how, when, and where to incorporate technology tools and resources into lesson plans. The instructor was exposed to new approaches for creating assessment tools and aligning lessons with educational learning goals and standards. Additionally, she discovered new ways to incorporate the use of the Internet, Web page design, and student projects as vehicles for powerful learning.

Ntlemo was so impressed with the Intel Teach Program and the effect it had on her approach to teaching, she said that she wanted her colleagues to benefit in the same way. So she became trained as an Intel Teach Program facilitator and organized courses at her school for her colleagues at DZJ Mthebula and other area schools. Despite the fact

To date, 35,000 South African educators from 852 schools have taken part in the Intel Teach Program

that these courses were offered in the evenings, during personal time, many teachers still signed up for them, and Ntlemo found herself teaching 4 separate classes, each with 16 teachers, 4 nights a week. Ntlemo's belief in the value of the Intel Teach Program curriculum was so strong, that she continued to teach while she was pregnant.

As a result of the Intel Teach Program, Ntlemo says that technology is now an integral part of the curriculum at DZJ Mthebula High School, and project-based learning is the norm.

"I have noticed that before teachers studied the Intel Teach Program, they did not plan their lessons well, nor did they consider how work was to be assessed other than through the traditional examination methods," observed Ntlemo. "Some teachers would enter their classrooms completely unprepared for the topic they were about to teach. Since they have completed the program training sessions, I have noticed that they are planning units of work well ahead and even starting by planning the assessment."

Ntlemo added, "The Intel Teach Program has revolutionized the way we can use the computers that were donated to us. It has revolutionized the way we teach."

As a result of improved teaching and student performance in Limpopo, the premier's office in that province has allocated USD 251 million to expand ICT in schools.

The Education Landscape in South Africa

The South African education landscape is complex, with schools that differ widely with respect to resources, management expertise, and educator capacity and commitment. Many of these differences are a legacy of the apartheid regime. In addition, provincial differences with respect to management capacity as well as financial status further complicate the situation.

Under the apartheid system, 19 separate education departments existed, each organized on the basis of race, geography, and ideology.

Since 1994, the South African education system has been engaged in a process of transformation. This has involved all areas of the system, including governance and management, curriculum development, and moves toward learner-centered approaches and outcome-based education. A national core curriculum was published in 1997, followed by a revised version in 2002. In 2006, a new curriculum for grades 10 to 12 was implemented.

In the area of educator training, a range of new policies and approaches has emerged to address curriculum issues and standards for educators, among other issues. However, while there has been improvement in some schools, many have yet to experience the benefits of the new policies.

According to a 2004 survey, more than 97 percent of learners attend public schools in South Africa. There are 12.1 million learners who are served by 362,042 educators. The learner to educator ratio is approximately 33:1.[1]

A 2002 School Register of Needs Survey reported that 34 percent of schools had no access to water, 16.6 percent had no access to toilets, and 34 percent had no access to telephones. In addition, the survey reported a decline (compared to 1996 figures) in the number of schools that reported buildings in good and excellent condition. According to figures, 12,000 buildings are in need of repair.[2] While there are wide variations from province to province, these national statistics provide an overview of the extent of the challenges facing the education sector.

In the area of technology access, significant divides still exist across provinces and schools. Nationally, 39.2 percent of schools have computers, while only 26.5 percent have computers for both teaching and learning.[3] When broken down by province, the percentage of schools with computers varies greatly from 82.4 percent in the Western Cape province to 22.9 percent in the Mpumalanga province. Schools with computers for both teaching and learning vary widely as well, from 56.8 percent in the Western Cape province to 4.5 percent in the Eastern Cape province.[3]

A survey in 2000 found that the principal factors preventing schools from using computers as a tool for teaching and learning included insufficient funds, inadequate numbers of computers, lack of computer literacy among teachers, lack of subject teachers trained to integrate computers into different subject areas, and lack of properly developed curriculum for integrating ICT into subject teaching.[3]

While statistics for technology access in South Africa may seem bleak, it should be noted that the number of schools with computers for teaching and learning has increased by 12.3 percent between 1996 and 2002.[3] Further, in an e-Education white paper released by the South African Department of Education in 2003, the government committed to ensuring that all schools have computers by 2013.

The Intel® Teach Program in South Africa

Intel is committed to improving education to prepare students around the world to thrive in the global knowledge economy. One of Intel's most successful worldwide education programs is the Intel Teach Program, a professional development program that helps educators improve the effective use of technology in the classroom to promote 21st century learning. In South Africa, this program was launched in January 2003.

Along with other Intel® Education programs, the Intel Teach Program is adapted in each country to address specific needs and focuses on building a local competency for teacher training and technology innovation. Materials for the Intel Teach Program in South Africa were initially localized by the University of Pretoria and SchoolnetSA (SNSA), and have since gone through various revisions, including the incorporation of portfolios created by South African teachers during the training. Based on evaluation research and implementation experience, a modified version of the program was launched in 2006. This course focuses on the planning and preparation of effective classroom projects integrating ICT. Thorough attention is paid to the roles of curriculum outcomes and assessment strategies at an early stage of planning. The emphasis on a strong focus question ensures that learners are challenged to think at higher levels as they process the information they have gathered during research.

The Intel Teach Program has successfully expanded to all nine provinces in South Africa, and has gained wide acceptance among both elementary and secondary educators. Additionally, a number of South African universities have incorporated the Intel Teach Program into both pre-service and in-service qualifications. The national Ministry of Education and local governments have expressed support for expansion of the program.

The Intel Teach Program is one of the professional development initiatives specifically mentioned in the South African Department of Education's 2003 e-Education white paper as a vehicle for helping meet technology integration and student learning goals.

To date, 35,000 South African educators from 852 schools have taken part in the Intel Teach Program, and 783 facilitators have been trained to deliver the program curriculum.

Future plans for the Intel Teach Program in South Africa include a well-structured, capacity-building program for provincial department personnel. The program helps local educators build capacity by training departmental officials in each province who then train facilitators at each school. These facilitators then train other educators at their school and are on-site for ongoing support. This will ensure the sustainability of the program and, thus, the long-term support for teachers in the integration of ICT across the curriculum.

Intel® Education Initiative

The Intel® Education Initiative is Intel's sustained commitment to prepare all students, everywhere, with the skills required to thrive in the knowledge economy by improving teaching and learning through the effective use of technology, and advancing math, science and engineering education and research. Through a sustained public-private partnership with educators and governments in more than 50 countries, Intel works with international organizations and governments at an international, national, and local level and invests approximately USD 100 million per year in education programs adapted to address the needs of each country to advocate for 21st century educational excellence through policy work and awareness efforts.

- **For more information visit: www.intel.com/education**
- **For more information on the Intel Teach Program, visit: www.intel.com/education/teach**

---

1. Education Statistics in South Africa at a Glance 2004 can be downloaded from http://www.education.gov.za/EMIS/emisweb/statistics.htm.

2. 2002 School Register of Needs Survey can be downloaded from, http://www.info.gov.za/aboutsa/education.htm#tsro.

3. Draft white paper on e-Education can be downloaded from http://www.education.gov.za/EMIS/emisweb/statistics.htm.

Programs of the Intel Education Initiative are funded by the Intel Foundation and Intel Corporation.

Copyright © 2006 Intel Corporation. All rights reserved. Intel and Intel Education are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. *Other names and brands may be claimed as the property of others. Printed in USA.
1206/KEL/CMD/PP/1K 315478-002US

intel® Education