



education

Department of Education
REPUBLIC OF SOUTH AFRICA



The Dinaledi Schools Project

Report from a strategic engagement between
the national Department of Education and business
on increasing support for mathematics and science
education in schools

“Leadership becomes critical in creating a
modern learning culture in South Africa”

– Prof. Brian O’Connell
Vice-Chancellor,
University of the Western Cape

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Introduction

On 24 March 2009, the National Business Initiative and the Department of Education convened a meeting to discuss ways of improving the quality of mathematics and science education through private sector support for Dinaledi schools.

The purpose of the meeting was to:

- Explain the rationale and progress of Dinaledi;
- Explore the different models of support by the private sector; and
- Encourage the private sector to consider stepping up support for the Dinaledi initiative.

The outcomes of this engagement are captured in this report, which forms the basis for further discussion with business representatives and the nine provincial Dinaledi coordinators, and provincial and national heads of curriculum. Future interactions at these levels will focus on how to improve the partnership between business and provincial education departments to ensure that the Dinaledi project has maximum impact.

The meeting was facilitated by Professor Brian O'Connell, Vice-Chancellor of the University of the Western Cape, and was addressed by the following speakers:

- André Fourie, CEO, National Business Initiative
- Penny Vinjevold, Deputy Director General, Further Education and Training (FET), national Department of Education
- Edward Mosuwe, Chief Director: FET Schools, National Department of Education
- Dr Nomsa Masuku, Head of Corporate Social Investment, Standard Bank of South Africa
- Ms Marianne Scott, NBI Director: Education and Skills Unit

1 South Africa's Mathematics and Science challenge

South Africa's education system is facing a major challenge in increasing its output of matriculants with university-entrance mathematics and physical science passes. While the country has seen spectacular growth in secondary school enrolment since 1994, the focus is moving to strengthening the quality of education and increasing in the number of matriculants who have strong foundations in mathematics and science.

Since 1994 South Africa has achieved almost 100% enrolment in primary and secondary schooling, with the participation rate among girls being among the highest in the world. Although participation in grades 11 and 12 drops by 10-15%, grade 12 participation rates are growing at between 20 000 and 30 000 learners each year. This compares favourably with secondary school participation in China at 89% on average and in India at 49%. Figures for secondary school enrolment in Africa are even lower: 45% in Northern Africa, 25% in Southeastern Africa and 13% in Central Africa (cited in Brian O'Connell presentation to the meeting).

The matriculation pass rate increased from 58% in 1994 to 65% in 2007, but at both secondary and primary level the country's performance in mathematics and science lags way behind that of other countries, many of which are much poorer than South Africa. In 2003 South African scored lowest in the Trends in International Mathematics and Science Study (TIMSS), while in 2007 only 15% of grade 3 learners achieved the required numeracy and literacy levels in the National Systemic Evaluation.

The DBSA roadmap process indicates that approximately one out of every 40 children that started school in 1995 passed matric mathematics at higher grade level and that 93% of maths passes came from 21% of schools. Penny Vinjevold, Deputy Director-General for FET in the national Department of Education, points out that to some extent rapid growth in school enrolment has occurred at the expense of quality in education, which is now the department's key focus. Clearly, poor mathematics and science results affect the availability of key skills required in the economy, such as engineering, and these and other skills shortages constitute a significant constraint on growth and employment creation.

Factors fostering change

What are the factors influencing poor learner performance in science and mathematics and what is the potential for change?

In the past, only about half the senior certificate candidates who could pass higher grade mathematics did so. Perceptions of mathematics as a difficult subject led some to do mathematics at standard grade level, while others chose not to take the subject at all. Half of secondary schools did not offer the equivalent of higher grade mathematics, with the result that the option of studying mathematics at the higher grade level was not available to many young people (CDE 2007). In 2006 and 2007 over 25 000 learners achieved A, B or C symbols at standard grade level – these

learners would have had a very good chance of passing mathematics at higher grade level, had they been given the chance.

Estimates are thus that the number of passes in mathematics at higher grade level can be doubled, provided that more learners can be persuaded and supported to take science and mathematics as subjects. If the subjects are not offered at schools close to where they live, learners with an aptitude for these subjects must be given the opportunity to attend schools that do offer them.

Research has shown that the output of school-leavers with mathematics and science is also likely to be improved by:

- Improving the qualifications of mathematics and science teachers;
- Improving the proficiency of learners and teachers in the language of instruction;
- Increasing the time spent teaching and learning the subjects in class;
- Equipping schools with the textbooks and equipment required for mathematics and science study; and
- Supporting designated schools to become centres of excellence for mathematics and science teaching and learning.

National strategy

In 2001 Cabinet adopted the National Strategy for Mathematics, Science and Technology Education (NMSTE). In 2005 the national strategy set itself the goal of doubling the number of learners passing high-level (higher grade) mathematics and science to 50 000 by 2008. The strategy aims to achieve this by means of the following:

- 1 Setting performance targets in all schools
- 2 Ensuring that a qualified and competent teacher is available in every classroom
- 3 Improving the language of teaching and learning (LOLT)
- 4 Identifying and nurturing talent and potential
- 5 Co-operating with the Department of Science and Technology – National Science Week, camps, etc.
- 6 Partnerships with relevant stakeholders to generate the necessary resources and technical support
- 7 Evaluation and monitoring of mathematics, science and technology in provinces
- 8 Introducing ICTs in all schools.

In 2008 the Senior Certificate (matriculation examination) was replaced with the National Senior Certificate. Under the National Senior Certificate, it is compulsory for learners to take either mathematics or mathematical literacy (a more rudimentary subject). Science remains an elective subject. A mathematics or

“The growth of matriculants passing grade 12 and passing mathematics at the same time (up from 88 000 in 1995 to 140 000 in 2007) gave us the courage to say everyone should do mathematics. The first National Senior Certificate results in 2008 suggest that this was the right decision.”

– Penny Vinjevold, Deputy Director-General FET, national Department of Education

science pass at 50% and above has been benchmarked as similar to the level of higher grade under the previous Senior Certificate.

2 What is the Dinaledi schools initiative?

In 2001 the Department of Education established the Dinaledi School Project to increase the number of matriculants with university-entrance mathematics and science passes. The strategy involves selecting certain secondary schools for Dinaledi status that have demonstrated their potential for increasing learner participation and performance in mathematics and science, and providing them with the resources and support to improve the teaching and learning of these subjects. The Dinaledi School Project will be expanded to other schools in the long term.

“Dinaledi schools are intended to raise the participation and performance by historically disadvantaged learners in National Senior Certificate maths and physical science.”
 – Edward Mosuwe, Chief Director: FET Schools, National Department of

The programme started with 102 schools in 2002-2004 and by 2008 this number had increased to a total (capped) of 500 (8% of secondary schools). Over the years, a number of under-performing schools were removed from the project. Table 1 shows that 77 of the original 102 schools were retained when the project was expanded to 400 schools in 2006. Similarly, in 2007, 371 of the 400 schools were retained when the number of Dinaledi schools grew to 488.

Table 1 Number of Dinaledi schools by province and year intervals

Province	Number of schools			
	2002-2004	2006	2007	2008
Eastern Cape	15	60	60	60
Free State	6	30	35	36
Gauteng	11	70	101	101
KwaZulu-Natal	23	70	84	88
Limpopo	23	50	51	51
Mpumalanga	7	30	44	46
North West	7	40	51	53
Northern Cape	4	10	17	17
Western Cape	6	40	45	48
TOTAL	102	400 (77)	488 (371)	500 (478)

Source: Department of Education 2009

Which schools qualify for the project?

Initially the programme focused on improving the performance of African learners and former African schools rather than former white, coloured and Asian schools. The criterion for inclusion was that schools had to have achieved at least 35 Senior Certificate mathematics passes by African candidates, either at higher grade or standard grade level. In Gauteng, the Western Cape and KwaZulu-Natal, some former white schools that meet this criterion are included in the Dinaledi programme.

The Dinaledi project thus consists of 500 schools that serve black learners. They are not necessarily the best-performing schools, but have the potential to expand the provision of high-quality mathematics and science teaching and learning.

Targets

In 2008, the Dinaledi schools were expected to achieve 20% (10 000) of the national target of 50 000 learners passing high-level mathematics. Since the divide between higher grade and standard grade no longer applies under the National Senior Certificate, the minimum equivalent of the old higher grade pass in a subject is set at 50%. In other words, a pass in mathematics and science at 50% and above would constitute a minimum higher grade pass.

Table 2 Dinaledi schools mathematics and science performance targets for 2008

Province	HG Performance Target for 2008	Dinaledi Schools' Performance Target for 2008
Eastern Cape	3 000	600
Free State	3 000	600
Gauteng	14 000	2 800
KwaZulu-Natal	11 000	2 200
Limpopo	4 000	800
Mpumalanga	3 000	600
Northern Cape	1 000	200
North West	3 000	600
Western Cape	8 000	1 600
TOTAL	50 000	10 000

Source: Department of Education 2009

In 2008, 314 000 grade 12 learners enrolled to write mathematics in the National Senior Certificate. Of these, 55 000 were in Dinaledi schools. This represents 17% of the total learners enrolled for mathematics in the public school system. The results are outlined in section 3 below.

Project implementation

In terms of the constitutional allocation of powers, the selection of Dinaledi schools is a competence of provincial education departments in collaboration with the national department. This has led to some unevenness in the implementation of the Dinaledi project, with procedures for adding or excluding schools not being applied uniformly across provinces. For example, some provinces de-listed schools that had not significantly improved their output of mathematics and science learners, whereas others have retained schools with low higher grade enrolments. In some cases schools were not allocated sufficient mathematics teachers and learning materials

and some provinces had too few subject advisors to support the Dinaledi schools in their provinces.

The implementation of the project may also have been affected by the relatively small budget allocated in the education departments for mathematics, science and technology, compared with the needs of Dinaledi schools. The Department of Education finds it difficult to divert funds to Dinaledi schools when there are still schools without running water and toilets. For this reason it encourages private sector organisations to 'adopt' Dinaledi schools in order to strengthen the levels of resourcing and other support available to them, and has developed a framework to guide the process (see section 4 below).

Support provided by the Department of Education to Dinaledi schools

The Department of Education has provided basic levels of support to Dinaledi schools to meet their greatest needs.

The Department of Education is committed to ensuring that learners in Grades 10-12 each have **textbooks** for each of the seven subjects. In 2007 the department conducted a survey of grade 12 textbook requirements in Dinaledi schools for the 2008 school year. With a grant from the Royal Netherlands government, it was able to supply English language, mathematics, and mathematical literacy and science textbooks to all Dinaledi schools that requested them for grade 12. However, severe shortages of textbooks persist in grades 10 and 11, and in 2009 Dinaledi schools experiencing such textbook shortfalls will be prioritised for support, based on a survey of their textbook requirements. This is to ensure that learner preparation for grade 12 is not hampered.

In 2008 a 100-hour **teacher training** process was undertaken with 2 400 teachers in Dinaledi schools across all nine provinces to strengthen their content knowledge, improve their teaching of mathematics and science and improve learner performance. The impact of the training is being assessed. In 2009, following reports from moderators of the 2008 mathematics and physical science National Senior Certificate examinations, further training will be made available to at least 500 teachers in each of mathematics and science on specific content areas. The training will take place in the June and September school holidays and will be decentralised in provinces. The training team will consist of members of the SA Mathematics Foundation (SAMF), higher education experts and subject advisors with demonstrated levels of subject competence. The impact of this training will be assessed through pre- and post-tests conducted at the start and conclusion of the training.

Textbook provision

The Department of Education has produced a list of quality textbooks and has developed a national catalogue of textbooks from which schools and provinces are encouraged to purchase textbooks for learners.

Textbook provision in adequate numbers has been hampered by the costs of textbooks relative to the funds available for schools, by the transition in curriculum implementation in grades 10-12 between 2006 and 2008, and by the capacity of publishers to provide sufficient supplies. In some cases provinces acquired the wrong titles, which could not be used by schools.

With funding from the Netherlands government in 2007, the Department of Education has demonstrated the advantages of buying textbooks in bulk.

In order to ensure that teachers at Dinaledi schools are well supported, the Department of Education subject specialists in mathematics and science conducted a series of workshops for **heads of department** for mathematics, science and technology in Dinaledi schools in August and September 2008. The training focused on principles and methods of good classroom practice, and their roles and responsibilities in curriculum management and assessment.

Since some Dinaledi schools lack **laboratory infrastructure and equipment**, the education departments have provided temporary relief through the supply of micro-science kits to encourage practical work. They have trained Dinaledi school science teachers on the use of the science equipment and in some cases introduced mobile laboratories. The Department of Science and Technology is establishing a network of science centres across the country, which will be used *inter alia* to support schools without laboratories. As is shown in section 4 below, the support of universities and companies has helped to revitalise school laboratories.

The provision of **ICT equipment and connectivity** is being achieved in 233 Dinaledi schools through cooperation between the education department and the Forum of South Africa Directors-General (FOSAD) Cluster on Information on Society and Development (ISAD). These schools will form the hub around which information activities for government services in neighbourhoods will be centred. All Dinaledi schools will receive software packages aimed at the teaching of reading, mathematics and science.

In 2009 the quality of mathematics and science teaching at Dinaledi schools will be further strengthened through an **audit of the qualifications of the mathematics and science teachers**. This will enable the DoE to establish the teacher: learner ratio in Dinaledi schools with a view to establishing class size and finding high-performing schools that have the capacity to expand enrolment.

In 2008 Dinaledi schools were supplied with **additional teacher posts** in mathematics, over and above the normal post provisioning, and a further 500 mathematics posts are targeted for 2009. However, the implementation of this aspect of the programme varied across provinces. In 2010 and 2011 the focus will be given to science teaching posts. The Department of Education will also appoint teacher assistants in Dinaledi schools. Retention of mathematics and science teachers is proving to be a challenge, with some Dinaledi schools losing teachers who accept senior promotional posts elsewhere.

In 2009 a **supplementary tuition programme** of Saturday classes and winter classes will be conducted in mathematics and science. Fifty hours of dedicated tuition time will be provided in September and October. This is open to all learners in the Dinaledi schools, but will target learners who achieved 35-49% in the June examinations.

In order to expose learners to opportunities that stimulate high order thinking, the DoE enrolled and paid the registration fees of 100 learners in each of the 500 Dinaledi schools to participate in the 2009 **Mathematics Olympiads**.

Monitoring

The Dinaledi school project is closely monitored by a team comprising senior education department officials and individuals from outside the department who have experience in mathematics and science teaching as well as in education research. In 2006 the monitoring team monitored 134 of the then 400 Dinaledi schools and was thus able to supply resources and ensure that schools at risk could be identified and supported. In 2008 the criteria for selecting schools to be monitored included learner enrolment in grade 12 mathematics and science, as well as the school's performance in the Senior Certificate examinations in 2007. A total of 212 schools were monitored

Information tracked in 2008 Dinaledi monitoring process

- Biographical data of the school which assists to update records on DoE databases
- Infrastructure information on science and ICT labs, media centres and libraries
- Equipment in laboratories to support mathematics and science
- Learner enrolment in Grades 10-12 and the provision of textbooks for English, mathematics and science
- The number of teachers in mathematics and science in schools
- Information on the management of the curriculum.

between April and June 2008, being a mix of schools with high enrolment and declining performance. This represents 42% of all Dinaledi schools and is 12 over the target of 200.

The monitoring process has been extremely valuable in enabling the Department of Education to establish where progress is being made in the implementation of the Dinaledi project, what the infrastructure and resourcing needs are of the Dinaledi schools (including the need for textbooks and laboratories), and where further support is required.

In 2009 the following categories of Dinaledi schools will be monitored:

- The 54 schools that had between 0 and 20 learners passing mathematics in the 2008 National Senior Certificate examinations and those schools that obtained a pass rate of 60% and below. Here the focus will be on the capacity of school management teams to provide leadership for curriculum management at the school, and to assess the role of and support provided by subject advisors.
- The 220 schools that had high numbers of learners passing, but lower numbers obtaining 50% and above in mathematics.

3 Results to date

“Change in education takes a long time,” says Penny Vinjevoold, Deputy Directory-General for FET in the Department of Education, “and it may still be too early to say whether Dinaledi as an initiative will work.” She points to the huge growth in African matriculants, from a small elite of 12 000 in 1954 following the passage of the Bantu Education Act (no 47 of 1953) to 370 000 in 2007.

National Senior Certificate 2008 results

As stated previously, the specific goal of the Dinaledi Schools Project is to increase the number of university-entrance endorsements among matriculants with mathematics and science.

Mathematics

In 2008, following the first examination written under the National Senior Certificate, the results for mathematics were as follows:

- Of the 298 821 learners who wrote the National Senior Certificate examination with mathematics in 2008, 136 503 (46%) passed mathematics.
- Of the 136 503 who passed mathematics, 63 035 passed at a high grade i.e. achieved a pass of 50% and above. These learners make up 46% of the total who passed mathematics.
- Of those who passed mathematics with 50% and above, 24% come from Dinaledi schools (see Table 3).

These results show that the 50 000 target set in 2008 for matriculants with high level mathematics passes was exceeded nationally by 13 000, with Dinaledi schools having exceeded their target of 10 000 passes of 50% or more, by 5 051.

Table 3: Total learners passing mathematics at more than 50% and above

Province	Total number who wrote	Number passing =>50%	Total wrote in Dinaledi	Number passing =>50%	Dinaledi passes as % of total passing
Eastern Cape	37 069	5 362	4 921	1 068	20%
Free State	14 719	3 614	3366	922	25%
Gauteng	50 885	15 298	13 635	4 100	27%
KwaZulu-Natal	81 780	14 929	10 517	3 199	21%
Limpopo	49 643	7 283	5 906	1 858	26%
Mpumalanga	23 822	4 013	3 921	844	21%
Northern Cape	3 866	898	965	227	25%
North West	17 080	3 607	5 666	1 415	39%
Western Cape	19 957	8 031	4 572	1 418	18%
TOTAL	298 821	63 035	53 469	15 051	24%

Source: Department of Education 2009

When broken down, the performance in 2008 shows that 268 Dinaledi schools produced 50 or more learners passing mathematics and 76 produced more than 100 learners passing mathematics. Seventeen Dinaledi schools produced fewer than 10 learners passing mathematics, 38 produced between 11 and 20, and 177 produced between 21 and 50 passes.

Physical science

In the case of physical science the results were as follows:

- Of the 218 156 learners who wrote the National Senior Certificate examination with physical science in 2008, 119 823 (55%) passed physical science.
- Of the 119 823 who passed physical science, 30 975 passed at a high grade i.e. achieved a pass of 50% and above. These learners make up 26% of the total who passed mathematics.
- Of those who passed physical science with 50% and above, 27% come from Dinaledi schools (see Table 4).

When broken down, the performance in 2008 shows that 186 Dinaledi schools produced 50 or more learners passing physical science and 53 produced more than 100 learners passing physical science. Twenty-one Dinaledi schools produced fewer than 10 learners passing physical science, 48 produced 11-20 and the majority (192) produced between 21 and 50 passes.

Table 4 Total number of learners passing physical science at 50% and above

Province	Total number who wrote	Number passing =>50%	Total wrote in Dinaledi	Number passing =>50%	Dinaledi passes as % of total passing
Eastern Cape	25 595	2 568	3 502	479	19%
Free State	12 469	2 062	2 806	549	27%
Gauteng	40 340	8 795	10 505	2 373	27%
KwaZulu-Natal	54 251	7136	7 461	1 616	23%
Limpopo	34 926	3 811	4 253	1 142	30%
Mpumalanga	20 193	2 201	3 460	429	19%
Northern Cape	3 058	518	842	118	23%
North West	13 713	2103	4 478	797	38%
Western Cape	13 611	4 349	3 072	786	18%
TOTAL	218 156	30 975	40 379	8 289	27%

Source: Department of Education 2009

Other gains in Dinaledi schools

Dinaledi schools were set a **target of 60:40 enrolment for mathematics compared to mathematical literacy**. The 2008 monitoring data show that Dinaledi schools are beginning to respond to the education department's call to double the number of learners passing mathematics: in seven provinces this ratio is adhered to, the exceptions being Mpumalanga and Northern Cape. These two provinces will receive additional support in this area.

The examination of learners' books by the monitoring team showed that in 2008 there was a marked improvement in the **amount of work covered** by learners in Dinaledi schools. Although this was uneven across the schools, in many instances there was evidence of extended writing exercises and tasks of suitable quality.

Finally the feedback from the 2008 monitoring visits showed that the **quality of assessment tasks improved significantly** in Dinaledi schools. The goal is to establish a high standard for quality assessment at the end of the year in grades 10 and 11 so as to prepare learners for the National Senior Certificate examination at the end of grade 12.

Ratio of mathematics to mathematical literacy in grades 10 – 12 in 2008

In 2008, the monitoring data from Dinaledi schools show that the ratio of learners taking mathematics to mathematical literacy is 2:1 in grades 10 and 11, while in grade 12 the ratio is 5:1.

4 Models for corporate support to Dinaledi schools

In order to swell the resource base for Dinaledi Project Schools, the Department of Education is encouraging private sector organisations and universities to 'adopt' Dinaledi schools.

Penny Vinjevoold, Deputy Director-General FET in the Department of Education points out that business in South Africa has had a long history of involvement in schools. A number of phases can be identified during which the private sector supported individual schools and NGOs and this collaboration has helped strengthen government intervention:

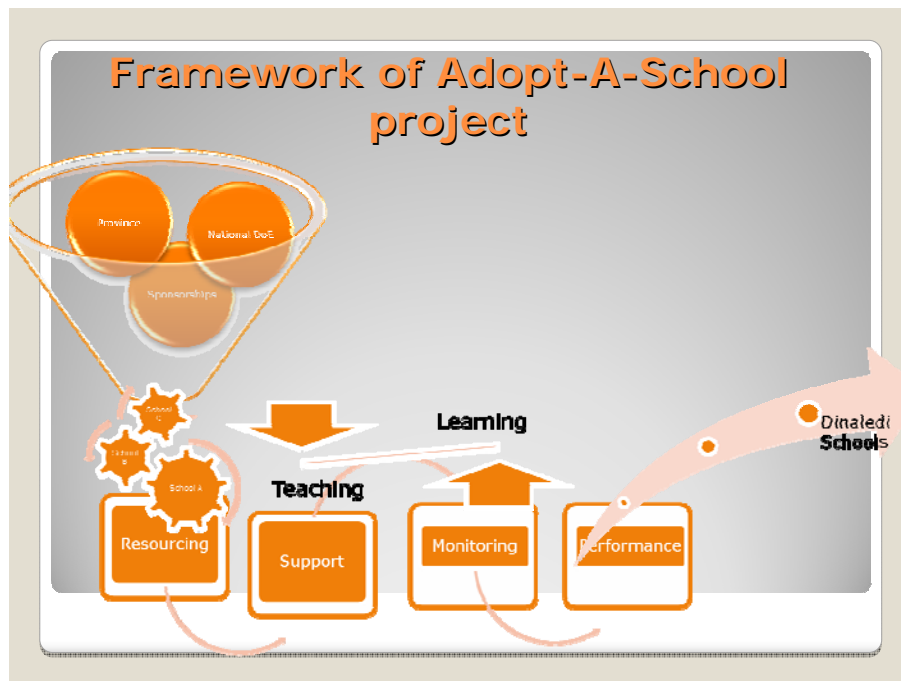
- The 1970s saw the rise of donors and NGOs working in areas neglected by the former government (such as READ working in townships and teacher development).
- After 1976 there was an intensification of business support coordinated by organisations such as the Urban Foundation, Joint Education Trust and the Business Trust. Here parties moved from working in opposition to government to working with the democratic government, and helped to introduce the importance of monitoring and evaluation to measure results, find out if one is making a difference and establish whether there is a return on investment.
- The third phase in the late 1990s saw business working with government in schools through the Quality Learning Project (mathematics, science and language in 500 high schools) and the Thousand Schools Project (reading and writing in primary schools).

In each of these phases important lessons were learnt that have informed the Dinaledi Schools Project and the Foundations for Learning Project, both currently running.

Today private sector partners can play an important role in encouraging efficiency at Dinaledi schools and promoting effective teaching and learning in them. According to the Department of Education's framework, the purpose of the Adopt-a-Dinaledi-School project is to:

- Encourage increased participation and outstanding performance in Dinaledi schools, especially in mathematics and science;
- Mobilise resources for Dinaledi schools to support effective teaching and learning; and
- Coordinate private sector support to Dinaledi schools and ensure equitable distribution and sustainability of assistance to schools.

The department has established a Dinaledi project sub-directorate that is responsible for the coordination of the project. One of its functions is to monitor and coordinate support for Dinaledi schools.



How to 'adopt' a Dinaledi school

- Obtain a list of Dinaledi schools available for adoption from the Department of Education.
- Liaise with provincial coordinators for Dinaledi schools to make an appointment for school visits.
- Establish the level of support required by the school to meeting the goals of doubling performance in high level passes in maths and science.
- Provide support to the school needs that have been identified. This must be directly linked to ensuring increasing performance.
- Establish relevant communication channels with selected Dinaledi schools for the delivery of required support.
- Provide regular updates to the Department of Education after each visit to the school for record purposes

Private partners are also encouraged to:

- Promote and guide the schools in the effective and efficient utilization of resources
- Promote good corporate governance at the school
- Advise and encourage the development of proper administrative systems for asset management and resource utilization to safeguard the resources.

All business partners interested in participating in the Adopt A Dinaledi school Project can obtain further information from the Department of Education. The contact address is:

Mr Edward Mosuwe, Chief Director: FET Schools, Department of Education, Private Bag X 895, PRETORIA 0001. Tel: (012) 312 5317 and Fax: (012) 328 9828 and email: Mosuwe.e@doe.gov.za

Types of resources needed in Dinaledi schools

In 2008, the Department of Education supplied Dinaledi schools with 232 000 textbooks in mathematics, mathematics literacy, physical science and English first additional language in grade 12 for study in 2008. In addition, 5 700 scientific calculators were distributed to Dinaledi schools that had requested them. Each Dinaledi school received two copies of the DoE/Old Mutual Grade 10-12 exemplar papers for mathematics and mathematical literacy, and 14 000 copies of the Maths 911 workbooks were distributed to Dinaledi schools.

Despite the provision of these resources, the monitoring process shows that there are still areas of need. The Adopt-a-School project has a critical role to play in assisting Dinaledi schools to acquire resources and much-needed support.

For example, the Standard Bank's research into the needs of its 114 adopted Dinaledi schools shows that priorities in poorer schools include a need for school security, counselling services, feeding schemes and support for teachers in relation to discipline and parent involvement initiatives. In the wealthier schools there are needs for infrastructure support such as desks and chairs, calculators and scientific equipment, and mathematics and science textbooks.

The Department of Education's 2008 Dinaledi schools monitoring report points to the following needs in Dinaledi schools:

Table 5: Number of Dinaledi schools with additional needs by category

	Province	Provinces								
		EC	FS	GP	KZN	LP	MP	NC	NW	WC
ADDITIONAL NEEDS BY SCHOOLS	Total Number of Schools Monitored	19	12	42	19	29	39	8	21	23
	More Mathematics & Science Educators	9	3	9	17	2	27	3	14	15
	Additional Textbooks	14	7	20	13	9	26	3	15	7
	More Subject Specific Workshops	10	6	17	8	6	23	0	7	9
	Exemplar Question Papers	4	6	1	3	3	7	1	1	3
	Study Guidelines	5	5	7	8	3	6	1	3	4
	Visits by Subject Advisors	8	1	7	0	2	22	0	3	1
	Science Laboratory Chemicals	15	17	17	5	7	41	0	16	7
	Building Upgrading	2	5	4	5	3	12	0	2	3
	Laboratory Equipments	18	12	23	16	31	38	2	16	13
	New Buildings	8	1	16	8	12	15	2	7	5
	Content Document (Guides)	7	4	5	1	8	1	0	0	3
	Calculators	8	2	17	1	19	19	1	5	10
	Examination Guidelines	8	2	0	2	9	20	0	0	4

Source: Department of Education 2009

Extent of private support for Dinaledi schools

By February 2009, 370 of the 500 Dinaledi schools had received support from companies, higher education institutions and other organisations. Companies currently providing support to Dinaledi schools include: Absa, Anglo American Corporation, Group 5, Jasco, Nokia, Siemens, Standard Bank of SA, Sasol, Transnet, WBHO, Woolworths, the universities of the North West, Cape Town, Pretoria and Witwatersrand, the Industrial Development Corporation, Epoch and Optima Foundations, and the Zenex Foundation.

Available information regarding numbers of schools is as follows:

Corporate support to Dinaledi schools

Sponsor	Number of Schools
Absa	10
Anglo American	17
Nokia/Siemens	3
Standard Bank of SA	114
Sasol	18
Transnet	11
WBHO	2
Woolworths	10

University support to Dinaledi schools

North West University	5
UCT/MEEPT	5
University Of Pretoria	10
Wits University	28

Corporation and foundation support to Dinaledi schools

Epoch and Optima	45
IDC	30
The Zenex Foundation	80

Models of private support to the Dinaledi Schools Project

Corporate and other support for Dinaledi schools takes a range of forms:

- In 2008 Anglo American Chairman's Fund provided R750 000 to monitor Dinaledi schools. This funding enabled the department to appoint an external monitoring team to swell its capacity and provide independent views of progress.
- In partnership with the Zenex Foundation, the Department of Education piloted teacher training in English as a language of learning and teaching in schools where the majority of learners are not learning through the medium of their home language. Dinaledi school teachers of grade 10 and 11 learners received a 35-week learning programme along with subject knowledge, classroom support and learning materials.
- Mindset and Intel will work with the Department of Education to expand the provision of ICT in Dinaledi schools.
- The University of Pretoria has agreed to make available postgraduate students in physics and chemistry to help refurbish and recondition science laboratories at 10 schools in the vicinity of Pretoria.

The Standard Bank has adopted 114 Dinaledi schools. Dr Nomsa Masuku, Head of Corporate Social Investment at Standard Bank points out that the worldwide economic downturn has made the work of corporate social investment (CSI) executives more difficult because businesses were increasingly anxious to ensure that non-performing units were jettisoned.

For CSI executives this means increased emphasis on, and frequency of, performance measurement with the aim of cutting spending on business units that could not be shown to be performing.

Because most CSI projects in education are geared to reaping long-term results, it is important to look for ways to show short-term gains in order to retain investment in programmes. Standard Bank is thus placing some of its Dinaledi schools on a 'fast

track' programme. These schools are all in Gauteng, close to the bank's head office, so that members of the Board and Group EXCO can easily visit schools to see how the Dinaledi programme is working. "The intention is to create visual and experiential evidence of what is possible if Standard Bank stays the course," says Dr Nomsa Masuku.

The Standard Bank's approach is to treat its adoption of Dinaledi schools as an investment that will contribute to the long-term sustainability of the bank. It sees the Dinaledi schools as a point of entry into the surrounding community. Standard Bank has invested in research to generate data that will guide the nature and extent of its

Dinaledi schools adopted by Standard Bank across 9 provinces	
Quintile	Number of schools adopted
1	10
2	7
3	45
4	23
5	29

investment in each of its adopted 114 Dinaledi schools to ensure that improvements in mathematics and science performance are achieved. A Memorandum of Understanding is signed with each school, setting out the performance agreement in exchange for the grant of R50 000 made to the school.

Dr Masuku believes that the challenge for partnerships between the business sector and the Department of Education revolves around the fact that companies and the department are large and complex organisations governed through matrices in which sign-off is required from a variety of players. For example, data is important in enhancing the accuracy of recommendations because this improves chances of success. However, some parts of the bank regard the Adopt-a-School data as competitive information and are wary of putting it into the public domain. At the same time it recognises that such data mitigates the risk and enhances the bank's competitive edge in the social space. It also needs to be recognised that the Department of Education is custodian of data that it manages on behalf of the state and which it shares judiciously.

How can these two worlds be navigated? Dr Masuku believes that it is important to be patient, firm and courteous, and to take a long-term view whilst ensuring that short-term visible gains are delivered. It is also important never to lose sight of who has ultimate accountability for the Dinaledi schools and thus holds the overriding mandate to deliver. Since the education department has ultimate accountability for these schools, her view is that the department should not be put at risk or be made vulnerable to criticism.

On the business side, it is essential to ensure the social investment is championed by the business rather than by CSI. Demonstrate that the investment in human and financial capital is worth it, and instead of going for compromise, aim for a win-win solution.

5 Conclusion

It is clear from the evidence presented during the discussion that the Department of Education is cautiously optimistic that the Dinaledi strategy is beginning to bear fruit. It is also clear that the private sector is starting to heed the call by the education department for companies to become involved in its Adopt-a –School project. The challenge that remains for companies is how best to support the Dinaledi schools through this initiative.

Companies have certain assumptions about schools and the responsiveness of the education system, the availability and competence of officials, and the readiness of schools to receive support based on identified and prioritised needs. Without closer engagement it is difficult for companies to gain the firsthand knowledge necessary to make sustained support for Dinaledi schools a meaningful reality. There is also the risk that the different stakeholders involved in Dinaledi – education officials, business partners and service providers – do not have a shared understanding of the challenges facing these schools and how to respond to them.

Ultimately joint coordination of private sector support for Dinaledi schools may provide the platform for shared engagement through which companies can increase their participation in the National Strategy for Mathematics, Science and Technology Education and invest in Dinaledi schools to increase national excellence in mathematics and science.

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