

CHAPTER 4

Education and skills

Introduction

Good quality education is among the most powerful measures known to reduce poverty and inequality and promote sustained economic growth.

South Africa's education and training system is currently undergoing a number of fundamental transformations. The need to redress past inequalities and quality shortfalls while also enhancing responsiveness to current and future needs are being addressed. The system is being changed so as to facilitate the transformation and restructuring of the economy from a resources-based mining one towards a globally competitive manufacturing and services-based economy. This transformation will also have widespread implications for education infrastructure planning and future education infrastructure requirements.

Education infrastructure includes both hard infrastructure (buildings, land, and equipment) and soft infrastructure (policies, regulations and information systems). The analysis here focuses on hard infrastructure issues and priorities, but also highlights soft infrastructure issues and priorities where these are seen to impact on hard infrastructure.

Within the broader educational context, two points need to be made. These points illustrate the fact that the provision of hard education infrastructure is only one of a number of factors which contributes towards improvements in the quality of education provision and the attainment of improved education outcomes:

- Broader community dynamics in poorer communities related to poverty, crime, and health pose significant challenges to ensuring learners are able to participate effectively in, and complete, schooling. The recognition of this informs the emphasis that the Department of Education (DoE) places on a range of multi-sectoral strategies, including the Safer Schools campaign;
- It is widely recognised that the quality of teachers and teaching is the most critical factor determining the quality of educational outcomes. Therefore significant attention at national and provincial level is being paid to teacher training and support and curriculum issues.]

The education and training infrastructure focus spans the following components:

- early childhood development (ECD: ages 1-6, up to and including grade R/0);
- general education and training (GET: grades 1-9);
- further education and training (FET: grades 10-12 and technical colleges);
- higher education;
- adult basic education and training; and
- teacher colleges;

The broader human resource development system also includes the following components:

- the youth labour market;
- world of work and enterprise training; and
- the national and regional system of science and innovation.

At present these elements, and the related transformation process, are sometimes contradictory. The Human Sciences Research Council (2003: 6-7) notes that 'key institutions in each sub-system are not aligned with the dynamics and needs of other institutions, creating an environment of contradiction and disconnection.'

This chapter focuses on the components of the education and training system that are relevant to provincial government's core role in education infrastructure planning, delivery, and maintenance, namely the ECD, GET, and FET components. These components are seen as the bedrock of the education system in that the quality of service provision and learner outputs at these levels impacts on the ability of subsequent education levels to operate effectively.

Role of the education and training systems in supporting provincial development priorities and strategies

The type and level of education achieved by individuals and the collective society are widely recognised as being central to the achievement of optimal personal development, economic growth and sustainable development. The Western Cape educational system plays a vital role in enhancing individual competencies as well as enhancing societal progress through the generation of new knowledge and innovation.

Improvements in education outcomes and the alignment of education supply with social and economic needs are central to accelerating economic growth and sharing the benefits equitably. More specifically, education plays the following roles in contributing towards the extent to which shared and accelerated economic development, growth and social development will be achieved or not:

- Democracy, social capital and reduction in poverty and inequality:
 - An individual's personal level of education is directly and positively correlated to the level of personal income achieved. Addressing past inequities in access to education will therefore positively impact on reducing past income inequalities;
 - Widespread education is necessary to reduce crime and social disruption;
 - An educated workforce is vital to a successful democracy.
- Shared and accelerated economic growth:
 - Lack of skills at the managerial, technical (IT, artisans), and basic levels (literacy and numeracy) is the primary constraint to firm growth and breaking the 4-5% level of economic growth of the past decade.
 - Advanced skills are critical to strengthening the National Innovation System through improving the extent and quality of

research and development, which in turn will impact on new product development and commercialisation opportunities.

- o Management skills allows businesses to survive and sustain and grow employment through meeting local customer needs efficiently and effectively. Strategic management skills are required for international growth using management expertise to develop and implement an export strategy and compete internationally

Historically, the South African educational system has not been designed to support the needs of a globally competitive manufacturing and services-based economy. Instead, it reflects widespread inequalities between communities, associated quality deficiencies, and weak mechanisms for promoting industry partnerships and leveraging public-private partnerships.

Improving the performance of the education system and its alignment with the South African and Western Cape's cultural values as well as the needs of the global, national, and regional economy has the potential to reinforce provincial strategic objectives in a number of ways, as shown in Table 1:

Table 1 Potential contribution of education to provincial strategic priorities

Provincial strategy	Potential contribution of education
Provincial Spatial Development Framework (PSDF)	<ul style="list-style-type: none"> • ECD, GET, and FET infrastructure capacity utilisation, as well as public transport systems and routes, can be made more efficient and reduce travel times of those living in poor communities through the location of new facilities
Micro-economic Development Strategy (MEDS)	<ul style="list-style-type: none"> • Skills needs and gaps at the basic, intermediate, and advanced skills levels exist in provincial growth sectors, which can constrain innovation and economic sustainability and movement up the value chain. The FET sector possesses greatest potential for providing critical intermediate skills. • Industry partnerships at the GET, FET, and higher education levels have the potential to enhance alignment between education supply-side curriculum and economy demand-side needs. • The increased use of public-private partnerships (PPPs) in the delivery of education infrastructure and support programmes can potentially strengthen the private sector, grow small, medium and micro-enterprises (SMMEs), and promote job creation. • Improvements in education curriculum and quality can reduce the industry trend towards capital intensiveness and increase workplace placement and employability of youth graduates. • The MEDS focus on SMMEs can ensure that support is provided to SMMEs to address constraints to providing learnerships and other workplace training and placement of the youth. • Career guidance at GET level will need to focus on economic opportunities in MEDS growth sectors to influence future study choices in FET and higher education
Human capital development strategy (HCDS)	<ul style="list-style-type: none"> • The focus on general education lays the foundation for improving the provincial skills profile as the foundation for shared and accelerated economic growth, job creation, and poverty reduction
Social capital formation strategy	<ul style="list-style-type: none"> • Infrastructure investment in low-income and new communities which is designed to promote community safety can lead to reductions in crime

(SCFS)	<p>levels which in turn will support enhanced skills development and economic growth and job creation through enhanced business competitiveness.</p> <ul style="list-style-type: none"> • Multi-sectoral programmes to address community pathologies and economic conditions are needed to support improvements in educational outcomes. • Community and political leadership are required to promote the importance of participating in education as a means to improving social conditions and upward mobility. • Infrastructure delivery models based on PPPs can strengthen productive collaboration between public and private sectors. • Infrastructure planning models will need to be refined to incorporate detailed geographic predictions on the impact of HIV/Aids and learner support programmes may need to be developed for children affected by HIV/Aids
Improved coordination and communication	<ul style="list-style-type: none"> • A range of education and skills forums, including the provincial skills forum, and proposed provincial higher education forum, promise to ensure greater vertical and horizontal government alignment, as well as coordination with other key service providers.
Improved financial governance	<ul style="list-style-type: none"> • Institutional changes to school management will improve corporate governance and financial management at the GET level. • Potential education PPPs and community-public partnerships will need to be based on strong financial management systems.
Improved interface between local and provincial governments	<ul style="list-style-type: none"> • An integrated ECD delivery strategy requires clarification of the role of local government as well as provincial training support to local government health inspectors. • Expansion of the FET infrastructure in Cape Town, West Coast, and South Cape will require integrated development and a partnership with local government regarding land and infrastructure.

Current and future education infrastructure profile

Current profile

Table 2 shows the current education system facilities and enrolments in the Western Cape.

Table 2 Current Western Cape education infrastructure profile: 2005

Education level	Size
Early childhood development:	<ul style="list-style-type: none"> • 1 550 DOE facilities • 446 subsidised Grade R sites • Approximately 55 000 learners excluding private facilities • Additional social services, community-based and private provision
General education and training, including special needs	<ul style="list-style-type: none"> • 1 470 ordinary DOE facilities (about 1/3 in rural areas or on farms) • 76 DOE special needs schools • 948 926 learners • 30 812 educators (28 443 state-employed) • Additional private schools
Further education and training	<ul style="list-style-type: none"> • 6 colleges on 42 campuses • 49 185 learners (19 350 full-time equivalents) • Additional private colleges
ABET	<ul style="list-style-type: none"> • 112 community learning centres
Higher education	<ul style="list-style-type: none"> • 5 universities

- | | |
|--|---|
| | <ul style="list-style-type: none">• 82 000 enrolments in 2003 (26 000 at Cape Peninsula University of Technology) |
|--|---|

Between 2001 and 2004, grade R enrolments in community sites and public schools grew by over 28 000 learners, from 16 000 to 25 000 in community sites, and from approximately 10 800 to approximately 30 250 at public schools.

Error! Reference source not found. Learner enrolment in public schools has grown by about 75 000 learners over the past five years. The increase would have been even greater if the dropout of almost 40 000 learners after Grade 10 had been less. Total enrolment in public schools has grown from 875,299 to 950,565 between 2000 and 2005.

Of the approximately 38 000 grade 12 candidates, 8 000 (20%) typically fail. Of the other 30 000, about 20 000 typically pass without exemption, and 10 000 (32%) with exemption.

The key causes of the high dropout and repetition rates include (Arends, 2004: 8):

- poverty and the need for learners to generate income and/or lack of affordability of school costs;
- schooling that cuts young children off from their home language;
- children without access to ECD and therefore unprepared for school;
- heavy domestic responsibilities for girls as well as teenage pregnancies (sometimes linked to gang culture);
- health (especially HIV/ Aids and tuberculosis) and poor nutrition;
- inadequate level of educators' qualifications;
- poor management of schools, and in particular management of the available resources

Another possible reason for the high drop-out rate is the mismatch between curriculum design and the learning needs of the general population. Given the skills backlog in South Africa, it may not be appropriate to offer more than 87% [where does this very exact figure come from?] of the equivalent of Grades 10, 11 and 12 FET learners a general academic education designed for university admission. This is an area which requires further research.

At the FET level, growth in enrolments between 2000 and 2004 has been slow at about 7 000 learners (from 38 000 to 45 800 learners), equivalent to about 2 000 full-time equivalents. The low number partly reflects the historically poor image of vocational training, as well as the large-scale institutional restructuring which this sector has experienced over the recent period. More importantly, this is a reflection of the limitations of the FET infrastructure and the inability of the state to invest in the sector because of inadequate budget allocations. No purpose-built FET college has been built in the Western Cape for almost 30 years. According to the provincial DOE, FET colleges are currently understaffed by approximately 30% on current provisioning norms, and 95% of the budgetary expenditure goes on personnel costs. The fact that the sector has recorded an enrolment growth of 7 000 learners under these circumstances is therefore impressive and represents external resourcing from sources other than the education budget.

At the higher education level, of the 30 000 eligible to enter higher education, a total of 21 000 (42% of candidates) do not enter public higher education institutions. Instead they enter FET, private higher education, the labour market or are unemployed. Therefore, only 10 000 grade 12s (16%) typically enter the public higher education system each year. This is clearly not sufficient to fulfill the high-level HRD needs of the province.

Future education infrastructure profile

Future education infrastructure planning needs to be informed by a wide range of factors influencing the quantity and quality of demand. The key factors which education institutional and physical infrastructure planning needs to take into account when determining future education infrastructure needs are shown in Table 3.

Table 3 Education infrastructure demand forces

Education level	Demand forces
General	<ul style="list-style-type: none"> • <i>Investment patterns and capital stock:</i> Previous historical patterns of investment and under-investment in various components of the education system in relation to current and future demand for different types of educational qualifications. • <i>Demographic changes:</i> The size, age and income distribution, and geographic distribution of future population growth (influenced by migration patterns between provinces and within the province). • <i>Economic changes:</i> Changes in unemployment levels influence the demand for, and affordability of, education as well as community expectations regarding the value of a proper education. • <i>Perceived value of education, affordability and relative access for the poor:</i> Community expectations regarding the expected future value of education (job prospects) and the extent of state subsidies influence affordability and access and learner enrolment.
GET	<ul style="list-style-type: none"> • The planned introduction of free schooling will increase the relative attractiveness and cost-benefit of schooling for poor families.
ECD	<ul style="list-style-type: none"> • Increasing economic participation by women.
FET	<ul style="list-style-type: none"> • Enrolment at FET colleges is still historically very low at 1% compared to norms from similar developing countries of 5-6%. A doubling to 2% will increase learner numbers by 40,000. Some developed countries such as the United States enrol 10-12% of the total population in FET vocational training. • Curriculum changes impact on new premises requirements and equipment

The province's human capital development strategy is clear that the reality of scarce resources and massive demands will require provincial prioritisation of the GET sector as the key education foundation, as well as exploration of delivery partnerships to improve ECD and ABET delivery.

The Western Cape receives approximately 48 000 new migrants a year. This, combined with natural population growth, exerts massive pressures on education infrastructure demand and supply. A recent population projection exercise for Cape Town showed that Cape Town's population could grow by about 400 000 (with a low estimate of 150 000 and a high estimate of 850 000) over the next 15 years. This could translate into about 100 000 new learners, which in turn means that 500-1 000 new schools will be needed. The high level of variability around these future population projections illustrates the very

difficult task facing educational planners in estimating future infrastructure facility needs.

The desired service levels and targets for the education system identified in the human capital development strategy and DOE Strategic Plan are shown in Table 4.

Table 4 Desired service levels for education infrastructure

Education level	Desired service levels
General	<ul style="list-style-type: none"> All buildings are used optimally Every child is accommodated in a well-lit, ventilated and comfortable classroom All buildings used for education are made of brick / cement
GET	<ul style="list-style-type: none"> The compulsory provision of GET to all learners aged 6 to 15 in the province. Learners in rural areas must be able to attend a school within 5km radius of residence or learner transport will be provided. One primary school for every 1 000 new residential sites. One secondary school for every 2 000 new residential sites
ECD	<ul style="list-style-type: none"> Ensure that all five-year-old grade R learners are enrolled by 2010. An additional 35 000 children must be reached in the period 2005-2010. This means enrolling 5 000-6 000 additional five-year old children each year in the period 2005-2010. Ensure that those schools with adequate space make excess space at their schools available for grade R learners.
FET	<ul style="list-style-type: none"> The progressive provision of FET to increasing numbers of learners in the 16-20 year category, so as to reach 45 000 FTE learners by 2010. By 2006 10% of FTEs must comprise youth at risk, to increase to 15% in 2007 and 20% in 2008. Ensure that learners after grade 9 do not drop out of the education system. Develop adequate opportunities to create an enabling environment for the delivery of high quality, globally competitive vocational education and training.
Higher education	<ul style="list-style-type: none"> National DOE has placed a cap on enrolment growth of 5-7% (or 4 000-5 600 in the Western Cape) through the subsidy. The national funding formula is being reviewed. Current enrollment of 10 000 new Western Cape matriculants (30% of total matriculants) is seen to be too low.
ABET	<ul style="list-style-type: none"> The provision of ABET to increasing numbers of learners

Table 5 provides more detail on the FET targets over the period 2004-2104. Importantly, the infrastructure capacity and provincial funding implications of these targets at the FET level have not yet been developed. While the FET college budget remains static, no growth can be expected as the current infrastructure operates beyond capacity.

Table 5 Targets for FET participation 2004-2104

Year	Population 16-20 years	16-20 year old learners in schools	16-20 year old learners in FET colleges/ learnerships	16-20 year old learners in adult centres of private study	FET total
2004	400 000	174 000	20 000	26 000	220 000
2005	400 000	170 000	32 000	28 000	230 000
2010	400 000	154 000	45 000	30 000	240 000
2014	400 000	160 000	60 000	30 000	250 000

The DOE Strategy and human capital development strategy targets are vague for the ABET components, and non-existent for the higher education sector. This reflects the province's explicit choice to prioritise the GET component. In addition, discussions with the higher education component are at an early stage and it is possible that concrete targets will emerge from these discussions, even though provincial government has limited direct funding or legislative control over this component. (It has some control in areas such as health where staff are shared).

With respect to infrastructure expenditure, the provincial DOE education infrastructure budget and plan focus on GET and FET school levels. The 2005/06 budget documents record the following budgets and deliverables:

- Total WCED infrastructure/maintenance budget will decline from R293,3m in 2005/06 to R271m in 2007/08;
- 2005/06-2007/08 main items include:
 - additional classrooms: 41 projects at cost of R45,5m;
 - maintenance: R222m;
 - new primary schools: 24 projects at R190,4m; and
 - new secondary schools: 24 projects at R223,6m.

There is almost no infrastructure expenditure allocated to the FET sector. This is of concern, as enrolment at FET college's in South Africa and the Western Cape is still historically very low at 1% of total population, compared to norms from similar developing countries of 5-6%. A strong argument exists to double the 2006/07 provincial budget allocation from R180m to approximately R360m.

Education infrastructure challenges and opportunities

The education system is in the midst of a major restructuring designed to address major past inequalities, lack of maintenance, and current and future societal and economic needs and demands.

The DOE states in the human capital development strategy (2005: 41) that:

Apart from the fact that building projects have been identified, prioritized and planned for until 2014, it is more important that a Physical Infrastructure Provisioning Strategy consider new school designs, pursue the mobilization of PPPs to fast-track delivery of our required infra-structure needs, and develop an intervention that will enable us to utilize existing structures to maximum capacity. Key for us will be to initiate programmes of community-managed minor works (upgrading, rehabilitation, beautifying, etc) programmes at their schools. We envision that such programmes could enhance community ownership of schools and more importantly, provide economic benefit for those communities.

Education infrastructure challenges

Significant infrastructure backlogs exist simultaneously with utilisation inefficiencies. The key challenges in terms of human resource development and specifically the educational system are:

- Poor performance with respect to educational outcomes at the GET level linked to inefficiency of existing infrastructure asset utilisation as well as socio-economic challenges. Poor outcomes are not primarily due to infrastructure deficiencies but instead reflect both socio-economic challenges related to wide-spread poverty, inequitable access to educational resources, as well as weak provincial Department of Education performance management systems, and inefficiencies in the use of existing infrastructure capacity (closure, amalgamation, re-use as opposed to a focus on visible new builds).
- Contradictions and incoherence between the ECD, GET, FET, higher education, the youth labour market, enterprise training systems, and the regional system of innovation. The education sub-systems need greater alignment to meet the economy's global competitiveness challenges. There are numerous national education system re-structuring processes which are aimed at promoting greater alignment, and the renewed focus on FET institutions is critical in this regard.
- Lack of pro-active, well-developed, medium-term plans which model growing and changing education system demand forecasts. The need to grow learner enrolment in certain aspects of the education system, which is crucial to future economic sustainability, exists. This must be linked to efforts to increase affordability and access to the system.

Against this background, Table 6 summarises the challenges facing education infrastructure in the province.

Table 6 Western Cape education infrastructure challenges

Education level	Challenges
System-wide	<ul style="list-style-type: none"> • Low levels of learner and adult literacy and numeracy. Nationally 30% of adults over 15 years old (6-8 million adults) are not functionally literate. • The constrained capacity of the WCED to meet the objectives of the Western Cape's human capital development strategy. • The need for teacher training, to ensure that teachers have the knowledge and skills needed to teach the national curriculum and improve learner performance in all learning areas. • Lack of WCED management capacity for infrastructure programme transferred from the Department of Public Works in 2005/06. • Lack of well-developed and managed performance management systems and accountability, linked to competitive wage remuneration. • Lack of well-developed infrastructure planning modelling methodology, techniques, and IT systems which factor in demographic changes, migration, and economic scenarios. • Maximising the potential for the timeous and cost-efficient delivery of education infrastructure using both expanded public works processes as well as a range of PPP options including NGO delivery and operation.
ECD	<ul style="list-style-type: none"> • DOE policy is to enrol all 5 year olds in Grade R, yielding an additional 85 000 learners or 2 833 classrooms at existing facilities. • DOE policy is not to allow pre-primary facilities at primary and secondary schools. • DOE proposal to limit funding to age 4-5 given limited resources.

GET, including special needs	<ul style="list-style-type: none"> • Substantial resource wastage due to high repetition and drop-out rates and spatial mismatch in demand and supply and lack of racial and community integration resulting in over R120 million in learner transport costs being borne by the province. • Need for improvements in quality (inputs and outcomes), efficiency (ratio of inputs to outcomes), and equity of access (geographic and income) • Rapid growth in learner population numbers with static infrastructure and maintenance funding levels (R294m in 2005/06) • The high dropout rate in high schools where 50% of learners who register for grade 1 drop out of high school before completing grade 12. • The difference in academic performance between learners from different race, language and income groups. • Large number of learners in grades 3-6 who have not achieved the outcomes required by the national curriculum for their grades in numeracy and literacy. • Low maths and science competence scores when ranked internationally. • Overcrowding in 25% of secondary schools and total excess of 31 600 learners or 907 classrooms required. • The need to ensure safe school environments and to position schools as sacred places of teaching and learning in communities.
FET	<ul style="list-style-type: none"> • Historical neglect of facilities resulting in national maintenance backlog of R4,2bn. • The need to improve access to FET colleges, especially affordability for learners from poor communities. • The need to raise an increasing proportion of operating and capital costs from own sources of funding including the private sector.
Higher Education and ABET	<ul style="list-style-type: none"> • The need to increase provincial enrolment to more than 30% of annual matriculants or 10 000 per annum.

Education infrastructure opportunities

A range of national and provincial processes currently underway will impact on resourcing and delivery options to address various education system challenges. These include:

- ECD national and provincial strategy, norms and guidelines;
- National schools infrastructure audit;
- National FET recapitalisation process;
- Investigation with World Bank into PPP models for financing and operation of schools and pilot project in Free State; and
- Implementation of provincial human capital development strategy.

In respect of FET recapitalisation, at the time of writing the amount of national funding being made available to the Western Cape appears to be severely inadequate in the light of decades of under-investment in FET and the recent pronouncements that revitalisation of the FET sector is crucial to accelerating economic growth.

Table 7 summarises the opportunities facing the province in respect of education infrastructure.

Table 7 Education infrastructure opportunities

Education level	Opportunities
System-wide	<ul style="list-style-type: none"> • Re-engineering of the provincial DOE • Revisions to national norms and standards

ECD	<ul style="list-style-type: none"> • Finalisation of a single delivery strategy between provincial Departments of Education, Social Services and Poverty Alleviation, and Health, local government and NGOs. • Outsourcing delivery of ECD to NGOs can extend reach and quality with appropriate support. • Role of local government regarding construction of pre-primary requires clarification in terms of Constitution in terms of whether it is an unfunded mandate.
GET, including special needs	<ul style="list-style-type: none"> • The proposed Education Laws Amendment Bill aims to ensure that approximately 66% of schools offer free education. The Bill also aims to elevate indigenous African languages to the same status as English and Afrikaans, promote higher pay for teachers, and provide more financial support for students. • National School Register of Needs 2005/06 will measure physical size of facilities for first time allowing for accurate assessments of over- and under-utilisation at facility and suburb/ town level. • Improvements in physical planning models and capacity can significantly enhance asset management and utilisation of existing infrastructure and maximise cost savings with a surplus of about 8 000 classrooms presenting possibilities for closure and amalgamation of schools as well as utilisation for other purposes (e.g. for FET facilities in Mitchells Plain) including FET and ABET. • PPPs and built-operate-transfer (BOT) models have potential for more cost-effective construction of new schools. However, a dedicated provincial fund to lease PPP schools and allow for planning is required. New large-scale middle-upper income housing developments could contribute towards social facility costs. • National process to standardise school design norms and standards. • Draft provincial policy on use of revenues from sale of school land represents opportunity to address maintenance backlogs.
FET	<ul style="list-style-type: none"> • National recapitalisation of R1,5 bn for 2006-2008. • Feasibility study for new FET campus in Mitchells Plain and expansion of False Bay College in Khayelitsha. Closure of 6 schools in Mitchells Plain represents opportunity for re-utilisation of existing facilities, but will require substantial modifications.
Higher education, and ABET	<ul style="list-style-type: none"> • Changing national funding allocations. • Outsourcing delivery of ABET to NGOs can extend reach and quality with appropriate support.

Strategic issues

The analysis of the current education infrastructure profile, the future profile, and education system challenges and opportunities informs the identification of the following strategic issues relevant to the Western Cape's future education infrastructure priorities and subsequent identification of strategic education infrastructure initiatives.

Overall education system

Poor educational outcomes are not due primarily to infrastructure deficiencies, but rather require attention be paid to how we manage what we have better and how to address broader community conditions through multi-sectoral actions. Key issues are:

- Efficiency of existing asset utilisation (closure, amalgamation, re-use as opposed to a focus on visible new builds);
- Quality provision (especially human resource performance management);
- Equity of access and affordability (changing national and provincial funding norms) in a context of rapidly growing learner numbers.

Both declining budgets and urbanisation demands require PPPs to build and operate infrastructure with the private sector at lower cost while not compromising access. This will free up funds and allow the province to build more with less and quicker.

The province is experiencing severe skills shortages which constrain the achievement of shared and accelerated economic growth, including infrastructure delivery.

- South Africa faces shortage of 15 000-40 000 skilled artisans, project managers, and specialised engineers in petrochemical, mining, steel and energy industries alone over the next five years;
- Artisan apprenticeship shortages exist as a result of problems in learnership development and adoption despite attractive tax breaks;
- CETA service provider accreditation anomalies at the FET level are holding back learnerships.

Early childhood development

An integrated provincial delivery strategy is needed to ensure role clarification, alignment and coordination between provincial departments, local governments and NGOs to address the following critical ECD infrastructure issues:

- Building of new facilities;
- Registration of existing facilities;
- Upgrading and maintenance of existing home-based facilities in poor communities; and
- Monitoring of existing facilities.

The roles of the provincial DOE as well as the Department of Social Services and Poverty Alleviation must be clarified on specific issues. These include:

- The quality of existing ECD teachers could be enhanced as part of a community based program driven by Social Services whereby community workers are trained to provide teacher training; and
- The DOE policy not to allow ECD facilities at primary schools may need to be reviewed given the large increases in learner numbers expected.

Local government's role must be clarified with respect to:

- Building new facilities: Is this an unfunded mandate and should it be DOE's role?
- Registration of new facilities: Local government health regulations may not be appropriate and may conflict with national facility guidelines.
- A uniform provincial set of facility guidelines may be needed as well as a provincial-wide training programme for local government health inspectors.

The role of NGOs with respect to the establishment, operation, and maintenance of ECD facilities must be clarified and expanded on the basis of service delivery agreements which are sustainable and deliver quality programmes to poor communities.

The development of a shared and comprehensive facilities database between DOE, Social Services, Health and local government is an important pre-requisite for an integrated delivery strategy and will support improved facility registration and monitoring to ensure conformance to standards and minimisation of health and safety risks.

Improvements in teacher support, training, and accreditation are needed to improve the quality of programmes, as well as facility management and improvements in fee recovery. It is currently DOE policy not to allow pre-school facilities at primary and secondary schools. This policy needs to be reviewed.

General education and training

Due to past inequalities and the lack of comprehensive facility data and planning systems, the GET system is characterised by substantial resource wastage, poor asset management, outdated facilities, and poor leveraging of private finance. This is evidenced by:

- Lack of well-developed and well-managed performance management systems linked to competitive wage remuneration results in poor attendance and outcomes in poorer areas;
- Spatial mismatch in demand and supply and lack of racial and community integration resulting in over R120 million in learner transport costs being borne by government;
- Lack of clear PPP BOT policy and funding mechanism results in loss of strategic land and inability to leverage private sector funds for social facilities via new housing developments; and
- School designs based on old curriculum for grades 10-12 and Socratic learning model do not incorporate FET implications.

To improve educational outcomes and return on investments in infrastructure, the development of programmes to develop and support teachers is critical. At present there is no framework for continuing professional development framework and no system for ongoing teacher professional development. Teacher centres need to be re-introduced with the necessary funding for staffing them.

Further education and training

The FET sector has historically been neglected and has only recently been recognised and prioritised as a vital part of the education system which has substantial potential to contribute towards the country's skills upgrading challenges. Nevertheless, a number of challenges remain if the FET sector is going to attract learners in the required numbers and provide quality training using modern curricula and equipment which contribute toward economic growth. These include:

- The National FET Act being amended to improve FET funding, salaries, and staff retention, and allow FET colleges to become the employer. At

this point it is not clear if a national bursary scheme will be introduced to enhance affordability and access;

- There is a historical lack of facility maintenance with a R4,2 billion national maintenance backlog yet only R1,5 billion allocated nationally over the next three years;
- The provincial DOE does not (yet) budget for FET infrastructure;
- Curriculum changes to support skills needs of the economy are needed. Better alignment with the MEDS is underway but the infrastructure implications require further investigation;
- Facility shortages of over R150 million exist in the province's three top population and economic growth nodes (Mitchells Plain/Khayelitsha; South Cape, and West Coast); and
- A marketing campaign is needed to raise the profile of FET and increase its attractiveness to learners.

Higher education

The primary issue currently requiring attention at provincial level is the establishment of a formal strategic mechanism for provincial – higher education interaction in order to strengthen higher education alignment with provincial growth and equity needs.

Mechanisms are needed to increase the overall numbers of learners enrolled, especially African learners, at both national and provincial level.

Support mechanisms are needed to strengthen higher education – industry linkages and partnerships in support of the provincial growth sectors in order to accelerate innovation, new product development, commercialisation of innovative ideas emerging from research and development, and higher order skills enhancements.

Strategic education infrastructure initiatives and projects

Given the evolution of the education systems, existing priorities and plans, it is clear that notwithstanding the scope for efficiency improvements in the utilisation of existing infrastructure, existing government funding resources are insufficient to meet demands.

The strategic initiatives and projects shown in Table 8 are proposed based on three prioritisation criteria:

- Improvements in infrastructure and asset management and planning systems are vital to enhance the efficiency, or capacity utilisation, of existing infrastructure ;
- New modes of facility financing, delivery, and operation in the form of PPPs with NGOs and the private sector need to be developed, piloted and implemented to complement scarce state resources; and
- Initiatives which promote greater alignment with provincial priorities as well as coherence between components of the educational system should be prioritised.

The proposals relate to both soft and hard infrastructure.

Table 8 Proposed priority education infrastructure initiatives and projects, 2005-2008

Education level	Initiatives and projects
DOE restructuring	<ul style="list-style-type: none"> • Enhanced FET resources to maximise impact on economic growth and MEDS growth sectors. • Resource capacity and a process to refine the development of Infrastructure Planning Modelling Methodology and Techniques (including IT systems) which factor in demographic changes, migration, and economic scenarios and identify IT and human resource implementation requirements.
ECD	<ul style="list-style-type: none"> • A shared comprehensive facilities database needs to be established between the Department of Education, Social Services and Welfare, Health and Local Government Districts. This needs to be complemented with a uniform provincial facility registration policy, training plan and properly resourced monitoring system. The policy must be aligned with local government health regulations. The feasibility of establishing ECD facilities at GET facilities must also be investigated.
GET	<ul style="list-style-type: none"> • Development of a PPP BOT Policy which includes (a) land sale and lease policy including funding mechanism and (b) linkage policy for social facility contributions in large developments. • Develop new school design guidelines which incorporate FET implications and new learning methods through assistance from South African Architects Association. • Investigate feasibility of introducing a continuing professional development framework and system for ongoing teacher professional development with the possibility of re-introducing teacher centres.
FET	<ul style="list-style-type: none"> • Pending the completion of feasibility studies, business plans based on the efficient utilisation of existing infrastructure and exploration of public-private partnership options need to be developed to expand infrastructure capacity in the province's key economic growth points so that economic growth opportunities linked to call centres, oil and gas amongst others are maximised through the availability of appropriate skills.
Higher education	<ul style="list-style-type: none"> • Establishment of higher education provincial partnership mechanism and process. This involves the design, agreement, and initiation of a broad-based multi-departmental and intergovernmental consultation process to develop a cooperation framework with the four higher education institutions that can inform institutional and curriculum planning and take forward priority issues such as: <ul style="list-style-type: none"> ▪ development of skills strategies aligned to MEDS; ▪ acceleration to equitable access especially African enrolment; ▪ investigation into regional incentive fund (and possibly tax benefits) to encourage regional collaboration and industry partnerships; ▪ audit of higher education training needs in relation to provincial priorities for economic growth, enterprise development and infrastructure development to inform future planning/ resources; and ▪ outsourcing the delivery of ABET to NGOs on the basis of outcomes based performance contracts.

Workplace learning through learnerships and apprenticeships

- A provincial construction skills plan must be developed by the CETA as soon as possible. Provincial support for establishing a Construction Centre of Excellence in partnership with the higher education institutions and construction and engineering industry associations to support this process is required.

Information sources

Human Sciences Research Council. 2003. *Human Resources Development Review 2003: Education, Employment and Skills in South Africa*, Cape Town. HSRC Press and East Lansing: Michigan State University Press.