

Globalisation, Education and Training: Insights from the South African Automotive Sector

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INTRODUCTION

Education and training has a strong relationship with globalisation. te Velde (2004) suggests three major elements of this relationship. First, the quantity and quality of existing education and training in a country helps determine the extent to which a country is likely to be involved in globalisation. Thus, having an “acceptable” level of skills and knowledge is a necessary condition for a range of foreign direct investment (FDI) decisions. This is not to say that all FDI requires high levels of education and training but that the nature of FDI will bear a relationship to the types of skills available or potentially available. Equally, education and training is clearly part of the equation when understanding the dynamics of “brain drain”, “brain gain” and “brain circulation”. Thus, education and training levels are important factors in both the importation of employment and its exportation.

Second, te Velde argues that the extent to which a country is engaged with FDI, trade and migration also inevitably impacts upon its supply of education and training. Again, it is possible to distinguish between supply responses to new employment opportunities within the country (for instance in various countries’ – including South Africa’s - attempts to build skills training for the call centre industry) and supply responses to the growing emigration possibilities for graduates. Often this is less explicit but one high profile recent example would be nurse training in India specifically for employment overseas.

Third, te Velde argues that a focus is needed on how policy seeks to combine a strategy for a positive engagement with globalisation and its overall human resources development (HRD) strategy. Most countries would claim that they have such a coordinated vision but recent work on Southern Africa suggests that few live up to these claims (Akoojee, Gewer and McGrath 2005). Nonetheless, Mauritius would be one positive example in the Sub-Saharan Africa region of a country that has deliberately, and relatively successfully, sought to use HRD as a way of positively engaging with globalisation (Gewer 2005), whilst other studies point to East Asian successes in this area (e.g., Ashton and Green 1996; Brown, Green and

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Lauder 2001). South Africa can be argued to have a very strong aspiration in this direction and to have made positive strides in this regard. Nonetheless, a 2005 special issue of the *Journal of Education and Work*, devoted to this issue, shows the limitations to South African policy coordination in the area of skills.

This study seeks to explore these relationships between globalisation and education and training through an examination of certain transnational corporations, operating in one sector in a specific country. Through an examination of skills development within the South African automotive industry (focusing particularly on the cases of DaimlerChrysler South Africa and BMW South Africa) I seek to shed further light on the broader debate on the relationship between globalisation and education and training. It is intended that this largely sociological study located in a particular context can provide a useful companion to the global study of te Velde, which is argued primarily from the disciplinary position of a development economist.

The study also considers the issue of corporate social responsibility as it results in education and training interventions. I do so in the belief that the decisions made by these transnational companies regarding corporate social responsibility in education and training are shaped in part by their desire to be seen to be “good corporate citizens” in a foreign country. Hence, globalisation and corporate social responsibility do exist in relationship with each other.

This study also complements another investigation for DFID by myself and a colleague (Akoojee and McGrath 2004b) regarding the importance of post-basic education and training (and most of what I am writing about is post-basic) for South Africa’s strategy for poverty and unemployment reduction. Thus, a small part of the focus of this study will be on one way in which globalisation impacts on poverty and unemployment through education and training interventions.

The automotive industry provides a useful case study given the centrality of knowledge and skills to investment decisions. It is a prime example of an industry that has sought to move from a strategy located within the context of import substitution to a strategy designed to take advantage of liberalisation and globalisation. In doing so, it has sought to move from a position in which quality and costs were not comparable with international benchmarks to one in which some South African produced vehicles can be viewed as “world class”.

The industry is an important one in South Africa in terms of contributions to employment and output and is accorded considerable importance in national and provincial industrial policies. Moreover, the industry’s location within South Africa shows a presence in both the most developed and wealthy and the poorest and least developed regions. It is because of this latter dynamic that my research focused on manufacturers with a presence in Gauteng and/or Eastern Cape provinces.

Thus, although the industry is not typical of South African sectors, it does reflect an example of an important type: an industry at the leading edge of responses to globalisation. Such responses are necessarily uneven across economies and such core globalising sectors are likely to be important in countries seeking to succeed in the global economy.

DaimlerChrysler South Africa (manufacturing plant in the Eastern Cape and head office in Gauteng) and BMW South Africa (manufacturing plant in Gauteng) were selected as representing these two provincial nodes. Both were also selected as they have been involved in key piloting activities for the new national skills development system. BMW was one of the first sites for the South African piloting of the Investors in People standard, whilst DaimlerChrysler were part of the piloting of learnerships for the manufacturing and engineering sector, the first sector to get learners to the certification stage (MERSETA 2003). Both firms were also in the vanguard of South African automobile production for an international market.² It may be argued that these two firms are not typical of the sector precisely because they have been in the forefront of responses to globalisation. Nonetheless, there is growing evidence that the other manufacturers are following the path first trod by these two firms. Thus, the study serves as an indicator of where the sector is rapidly heading.

The study draws upon a variety of existing literatures, both academic and policy. It draws primarily on literature on the impact of globalisation on South African education and training and on education and training policy debates, on the one hand; and literature about the automotive industry on the other.

It builds from these to consider the specific interactions between education and training and the automotive industry. This is done through a series of interviews and access to enterprise and industry documents. These include interactions with managers from various departments of BMW and DaimlerChrysler, as well as officials from government departments and other industry-related agencies, and managers from selected education and training providers.

The rest of the paper is divided into three broad sections. First, the context is set through a discussion of the existing literature on globalisation and education and training in South Africa; an outlining of the nature of the South African auto industry; and a review of South African HRD policies. Second, attention shifts to the two case study enterprises' activities in education and training and the location of these in the broader education and training activities of the sector, followed by a consideration of the interactions between the sector and industrial and HRD policy at both national and provincial levels. Third, this account is analysed for what it contributes to a broader understanding of the education and training impacts of globalisation both in South Africa and internationally.

SETTING THE CONTEXT

Reviewing the existing literature on globalisation and education and training in South Africa

Akoojee and McGrath (2004a) have reviewed the existing literature on the impact of globalisation on education and training in South Africa. The literature from educationalists has tended to focus on different areas of the impact of globalisation

² See Barnes and Morris (2004) for a discussion of the leading role that German firms have played in the South African automotive industry.

than in the current study. Instead of considering the effects of trade and investment, more conventionally the terrain of economists, the focus of most educationalists has been on the ways in which globalisation and its associated discourses have impacted upon public policy and public expenditure on education. Akoojee and McGrath argue that the fiscal conservatism that accompanied South Africa's entry into the global economy had the effect of depressing educational expenditure. This in turn undermined key elements of the educationalists' vision for a post-Apartheid education system built on the principles of equity and redress.

At the heart of the problem has been the reduction in teacher numbers in the late 1990s, which has then had a knock-on effect of reduced levels of teacher training. This has led to recent concerns about a likely shortage of teachers in the near future (Crouch and Perry 2003). Moreover, there is evidence that many of those who were retrenched soon reappeared in private schools or in the semi-privatised "model C" schools (Crouch and Perry 2003). These teachers were predominantly white and with above average experience. The effective transferring of such teachers to certain, already advantaged, types of schools has clear equity and performance implications.

A number of educationalists have noted that one way in which educational policy was explicitly supposed to be responding to globalisation was through the National Qualifications Framework (Kallaway et al. 1997; Morrow and King 1998; King and McGrath 2002; Allais 2003). The NQF was seen as a way of simultaneously addressing equity and competitiveness concerns. However, its success in either regard remains very meagre.

Akoojee and McGrath also went beyond the conventional educationalists' debates to consider the issues of brain drain and brain gain. A literature on this topic has developed in South Africa since 1994 in response to the highly publicised and often over-dramatised phenomenon of "white flight" (e.g., Brown and van Staden 1998; Kaplan, Brown and Meyer 1999; Meyer, Brown and Kaplan 2000; Bird 2001; Bailey 2003; Kahn et al. 2004).

Historically, South Africa was a labour importing country, both in terms of African "unskilled" and "semi-skilled" workers and in terms of white "skilled" and professional workers (McGrath 2004). Thus brain gain was an integral part of the overall Apartheid model. However, since 1994, both elements of the racially differentiated inflow of labour have changed. There has been a net outflow of whites to the developed Anglophone countries. Official immigration from the rest of Africa has slowed down, but it is widely perceived that there has been a rapid increase in the number of refugees and illegal migrants.

The fiscal austerity noted above for the education sector (and true also for health) has led to a significant outflow of teachers and complaints about the aggressive poaching strategies of other countries, such as Britain. This process has inevitably compromised already fragile public service delivery. At the level of the overall economy, Kaplan, Brown and Meyer (1999) estimated that there had been a R67,8 billion³ lost investment in human capital as a result of emigration in 1997 alone.

³ South Africa has experienced major exchange rate volatility over the last decade making sterling comparisons difficult. At the end of 2004, the exchange rate was approximately R11,25 to £1.

However, there is some evidence in sectors such as ICT (Moleke, Roodt and Paterson 2003) of large numbers of returnees after some years overseas. The overall effect of this on output and productivity is clearly complex.

Part of the reason for brain drain from South Africa is the quality and quantity of further and higher education that the country produces. Bird, the senior Department of Labour official in charge of skills development, argues that South Africa's capacity to produce skills is in advance of its capacity to retain them, given the high demand for certain skills internationally and the relative inability of South Africa to pay competitive salaries (Bird 2001). However, at the same time, South Africa's levels of wealth and infrastructure mean that it is also well positioned to act as a magnet for the most skilled in poorer countries (Akoojee and McGrath 2004a).

The current study marks a more conscious effort for engagement between educationalists' and economists' ways of looking at the relationship between globalisation and education and training. As will become evident, the argument presented in this paper provides a corrective to the highly pessimistic tone of much of the educational literature. However, it also needs to be remembered that the existing educational literature also serves to nuance the more positive story that emerges from a rather limited study of one leading economic sector.

The nature of the South African auto industry

An overview of the sector

In 2002, the automotive sector was the third largest sector in South Africa's economy (after mining and financial services) and was the leading manufacturing sector, contributing 6,3% to the country's GDP (TISA and MIDC 2003: 8). South Africa was the world's thirteenth ranked producer of autos in 2002 and produced 83% of the African total vehicle output. Employment in the manufacturing sub-sector has been almost constant at 32 000 since 1998 (TISA and MIDC 2003: 48).

There are seven car producers in South Africa, and they are concentrated in three provinces. Gauteng is home to BMW SA, Nissan SA (incorporating the assembly of Fiat), as well as Ford Motor Company of Southern Africa (incorporating the assembly of Mazda, Volvo and Land Rover). KwaZulu-Natal is home to Toyota SA and the Eastern Cape is home to Volkswagen SA, DaimlerChrysler SA and General Motors SA. There are also twelve lorry and bus manufacturers, including Tata who are reported to be considering entering the car market as manufacturers. A number of other companies have a presence solely as importers of vehicles manufactured elsewhere.

There are approximately 270 first-tier suppliers and more than 300 lower-tier suppliers operating in the South African automotive industry (TISA and MIDC 2003: 27), many of which are also foreign-owned, either in part or entirely (Black 2003). The rand value of domestically sourced components more than doubled between 1998 and 2002, with local value-added standing at 47% in 2002. While capital-intensive components, such as engines, gearboxes and cockpits, are largely imported, the remainder are sourced domestically (TISA and MIDC 2003: 20).

Globally, there is a trend towards increasing outsourcing of component manufacture and assemblage, which places greater importance on the quality assurance and skills development systems of suppliers. As we shall see, this trend has been encouraged in South Africa through state-industry collaboration around the Motor Industry Development Programme.

The globalisation of markets and the focus on international standards

Under the Apartheid regime, the automotive industry, like other sectors, was very inward-looking, with a focus on import substitution rather than export growth. Both the industry and the government have sought to transform this focus in the past decade.

Total automotive industry exports (vehicles and components) stood at over R40 billion in 2002, four times the level of 1998. Automotive exports in 2002 comprised 12,8% of South Africa's total exports, a three-fold increase in the export share from 4% in 1995. Growth of vehicle and component exports were essentially in parallel with each other (TISA and MIDC 2003: 8 and 24).

The three German-owned manufacturers were unlike the others in being majority foreign-owned at the end of South African isolation (Black 2003). This appears to have encouraged them to be the first to respond to the new opportunities for exportation. It was only in 2002 that Toyota joined BMW, DaimlerChrysler and Volkswagen as an exporter of cars for the first time (TISA and MIDC 2003: 12). Ford, Nissan and Fiat are also about to begin exporting cars. Whereas cars are exported to Australia, Europe, Japan and the USA; commercial vehicles are largely for African markets.

Component exports are largely concentrated around catalytic converters (where South Africa is the leading source for the European market and second in the American market) and leather seat covers. However, there has been diversification into tyres and engines (the latter in the case of Ford) (TISA and MIDC 2003: 27).

The growing export orientation of the industry has led to a strong focus on meeting international standards. BMW's South African plant was the first globally to meet the triple benchmark of ISO 9000, ISO 14001 and BS 8800 standards, whilst all seven car manufacturers had attained the first two of these standards by 2003 (TISA and MIDC 2003: 17).

In 2002, 195 automotive component suppliers (out of approximately 270) also had ISO 9000 series accreditation. ISO 14001 is increasingly being seen as necessary for exports to advanced economy markets (TISA and MIDC 2003: 17-8).

Industrial cooperation

There are a number of structures that facilitate cooperation within the industry. The Motor Industry Development Council is a tripartite structure that was established in 1996 as a forum to recommend automotive policy and to encourage better

communication and cooperation among all role players in the industry. The Auto Industry Export Council was established in 1999 and brings together various enterprise associations and government to promote the export capability of the industry (TISA and MIDC 2003: 50-1).

The Automotive Industry Development Centre was established in 2000 as a joint venture between Blue IQ (an initiative of Gauteng's provincial government – see below) and the Council for Scientific and Industrial Research, specifically focused on Gauteng Province. Since June 2003, the AIDC has also established a presence in the Eastern Cape, in partnership with the Eastern Cape Development Corporation. Its services include supplier development, logistical services, design, engineering and testing services, human resource development, SMME development and support to government programmes in support of the Motor Industry Development Programme (TISA and MIDC 2003: 52-3).

Vehicle manufacturers come together in the National Association of Automobile Manufacturers of South Africa (NAAMSA), whilst component manufacturers are grouped in the National Association of Automotive Component and Allied Manufacturers (NAACAM). The main trade union in the sector is the National Union of Metalworkers South Africa (NUMSA), which has played a major role in debates about skills development historically, as I show below.

The Motor Industry Development Programme

Government assistance to the automotive industry in South Africa began in the 1920s. Until the early 1960s, such support was on a classical import substitution model, favouring assembly of completely knocked down kits for the domestic market. Very high tariffs on imported vehicles fostered the development of a series of small assembly plants producing small runs of a wide range of vehicles at high cost. From the early 1960s, there was a growth in attempts at enhancing local sourcing and by the late 1980s, the beginning of an interest in supporting export growth (Bell 2003; Black 2003; TISA and MIDC 2003; Barnes, Kaplinsky and Morris 2004).

The Department of Trade and Industry (DTI) implemented the Motor Industry Development Programme (MIDP) in September 1995. This initiative needs to be seen in the context of the new South Africa seeking to open up rapidly to the global economy. Government rapidly removed tariffs and was seeking to find new tools that could support domestic industries but make them more internationally competitive.

The analysis of the motor industry was that it was not internationally competitive, having a high cost structure and low volume production. Its protected status over the previous three decades meant that it was in no position to compete internationally. However, it was a large-scale employer and so appeared to be worth attempting to support. After a period of consultation with NAAMSA and NUMSA, the government came up with the MIDP proposal as a way of supporting export orientation and employment.

The MIDP was to run till 2002, later extended to 2012. In its initial form it used five mechanisms to increase export orientation:

1. A tariff phase down schedule that reduces nominal rates of protection of over 100 percent under Phase VI of the previous regime's Local Content Programme to 40 percent for completely built-up units (CBUs), and 30 percent for completely knocked down (CKD) components by 2002.
2. A duty free allowance for domestic manufacturers of 27 percent of the wholesale value of the vehicles they manufacture.
3. A small vehicle incentive, which operates as a subsidy for the manufacture of more affordable vehicles. It operates via a duty drawback mechanism with the value of the drawback being contingent upon the ex-factory value of the motor vehicle.
4. The complete abolition of a minimum local content provision for domestic manufacturers, and
5. An import-export complementation scheme that allows both vehicle manufacturers and component manufacturers to earn duty credits from exporting. These duty credits can then be used to offset import duties on cars, components or materials, or alternatively they can be sold on the open market. (Barnes and Morris 2000: 2-3)

Competitiveness in both the vehicle and component manufacturing sub-sectors appears to have improved significantly since 1994, especially for the more export-oriented segments (Barnes, Kaplinsky and Morris 2004). The German car manufacturers were particularly well positioned to gain benefits from their integration into world production and sales networks, and this has also resulted in new FDI into South Africa from German components manufacturers (Barnes and Morris 2004). Ironically, this ability to benefit from globalisation was a result, in part, of the decision of the German manufacturers to pay less heed to the sanctions movement than their American counterparts (Barnes and Morris 2004)

Prices of vehicles dropped significantly between 1995 and 1999 before beginning to rise again, most sharply in 2002 (Barnes and Morris 2000; TISA and MIDC 2003: 44). Output levels fell between 1996 and 1999 but grew again after this. Exports of components and light vehicles showed strong increases by the late 1990s. Although imports to the sector still exceed exports, this negative gap has been reduced significantly under the years of the MIDP's operation (Barnes and Morris 2000; Barnes, Kaplinsky and Morris 2004). Indeed, the export:output ratio doubled between 1994 and 2002 (Barnes, Kaplinsky and Morris 2004).

The sector's share of gross output value increased from 9,7 to 13% between 1994 and 2002, the largest growth in share of any of the 29 2-digit ISIC sectors. Moreover, between 1991 and 2000, the auto sector's ranking in the share of value added rose from 35th to 18th in a categorisation of 46 subsectors (Barnes, Kaplinsky and Morris 2004).

Although approximately 14 000 jobs were lost from the industry between 1995 and 1999 (Barnes and Morris 2000), this situation has now stabilised (TISA and MIDC 2003). However, the state of employment in the sector needs to be placed in the context of an overall decline in industrial employment. Thus the share of the auto sector in manufacturing employment grew from 5 to 6,2% between 1993 and 2001 (Barnes, Kaplinsky and Morris 2004). Moreover, evidence suggests that employment trends were more positive in those manufacturers with export programmes (Bell 2003).

The MIDP and the broader policy environment of liberalisation have clearly forced, and encouraged, the motor industry to respond to the challenge of global competitiveness in a serious manner. However, there are concerns that the MIDP allows transnationals to exploit the regulations in ways that reduce their strategic intent. In order to import more, manufacturers must export more (Bell 2003). This has led to worries that the export boom in catalytic converters and leather seat covers is driven by a desire to build up imports rather than through the genuine comparative advantage of such exports. This is particularly problematic where such exports are essentially of low value components. The scale of these exports are such that it amounts, under the MIDP, to allowing duty free importation of assembled vehicles and CKD kits of models that are not being manufactured in South Africa.

Clearly, the MIDP's performance has been constrained by problems in the industry at the global level. There is serious overcapacity in what is a highly integrated global industry. The MIDP was introduced at what seemed a positive moment internationally but the industry was seriously affected by the East Asian crisis of 1999. By the end of 1999 it was estimated that there was between 25 and 50% overcapacity in the industry (Barnes and Morris 2000: 14). This has led to a global restructuring of the industry. In the light of the difficulties of the industry globally and of the rapid opening up of South Africa, it can be argued that the automotive industry has proved relatively resilient and that the MIDP has played an important role in this regard (Barnes, Kaplinsky and Morris 2004).

The Eurotype Test Centre

Eurotype is a wholly-owned subsidiary of the South African Bureau of Standards and was established in 1999 to conduct exhaust emission testing to European, American and Japanese specifications. BMW South Africa and DaimlerChrysler South Africa entered into agreements with Eurotype to have their cars for export tested at the Eurotype facility in East London. As well as emission testing, Eurotype in East London also conducts vehicle drive-by noise tests, again to internationally legislated procedures. To that end, a purpose-built track was constructed adjacent to the building, and state-of-the-art equipment was sourced from America to measure vehicle noise levels.

A second facility in Pretoria incorporates vehicle safety testing and vehicle brake testing as well as engine testing capabilities ranging from light-duty automotive engine testing to heavy duty military engine applications.

Eurotype is also collaborating with various tertiary education institutions in both the Eastern Cape and Gauteng to accommodate students interested in developing skills in the automotive industry for practical training periods in four basic fields of automotive testing: emission, noise, engine and vehicle safety testing (Eurotype 2004).

Future prospects

The flow of new foreign direct investment into the industry stood at R2,7 billion for 2002 (more than double the 1998 figure) and is expected to rise for the foreseeable future (TISA and MIDC 2003: 37). In late 2004, it was predicted that the growth of exports would result in approximately 4 000 new jobs in manufacturers or suppliers by 2007 (Business Report 26/10/04: 1).

The South Africa automotive industry has faced particular challenges. Like other industries in South Africa, it has faced a rapid liberalisation after 1994 at the same time as being increasingly expected to address the imbalances of the past in terms of employment equity and skills development. It has also faced the instability of the rand, which has gone through phases of both strength and weakness, and the challenges to employers of the HIV-AIDS pandemic. It has sought to follow an increasingly high skill, export-oriented approach but from a base of a national low skills equilibrium. The move to higher skills has seen the laying off of lower skilled workers. Attempts to follow international good practices in terms of high performance workplaces have had to overcome the legacy of one of the worst national industrial relations contexts.

There are concerns that South Africa's role in the global automotive industry could be negatively affected by the emergence of India and China as exporters of vehicles and components. However, it is likely that South Africa would also benefit partially as the chief entrepot for any exports to Africa and as a source of components such as catalytic converters (TISA and MIDC 2003: 30).

Human resources development policy in South Africa

It may be argued that South Africa's vision for HRD is necessarily both backward and forward looking given the particular history of the country. The systematic denial of access and equity during the colonial and Apartheid eras necessitates concerted efforts at redress. At the same time, the desire to build a new South Africa on sound economic and social foundations requires a focus on an inclusive higher skill future that equips South Africa for improved international competitiveness.

The HRD Strategy

The key intended elements of the overall South African HRD Strategy (DoE and DoL 2001) are as follows:

- an expansion of early childhood development, both in terms of numbers covered and in terms of what the notion itself means;
- a further strengthening of general education, ensuring that quality and quantity of provision are improved;
- a building of a system of adult basic education and training that is responsive to both social and economic demand;
- an increase in participation in both school and college variants of further education and training, and an improvement in quality and relevance of provision;
- a transformation of workplace skills development that is both inclusive and high quality;
- a progressive increase in participation in higher education and a shifting of enrolments towards areas of scarce skill;
- an emphasis on improving expenditure and outcomes from research and development.

There has been progress across these areas but it is evident that the transformation is still in its early stages. The challenge of balancing inclusivity and quality / high skills is particularly challenging.

Department of Labour policies

The HRD vision is further articulated in a set of sub-sectoral legislation and policies. Of most direct relevance to employers has been the work of the Department of Labour, most notably the *Skills Development Act and Skills Development Levies Act* (RSA 1998 and 1999) and the *National Skills Development Strategy* (NSDS - DoL 2001).

The two Acts set out a new approach for workplace skills development, centred on a new levy-grant system; a series of Sector Education and Training Authorities (SETAs); and a new flagship qualification: the learnership, similar to the British “modern apprenticeship” (Kraak 2004; Badroodien 2005).

The NSDS, which runs to March 2005, sets 12 targets for skills development. The table below highlights those of most relevance to large automotive employers.

Table One: Selected NSDS Indicators

No.	Indicator
1.1	70 per cent of workers have at least a Level One qualification on the National Qualifications Framework.
1.2	A minimum of 15 percent of workers to have embarked on a structured learning programme, of whom at least 50 percent have completed their programme satisfactorily.
1.3	An average of 20 enterprises per sector ... to be committed to, or have achieved, an agreed national standard for enterprise-based people development.
2.1	At least 75 per cent of enterprises with more than 150 workers are receiving skills development grants
2.3.	Learnerships are available to workers in every sector.
5.1	A minimum of 80 000 people under the age of 30 have entered learnerships.

(Source: DoL 2001)

Department of Education policies

The Department of Education has sought to transform public further and higher education institutions through two merger processes (DoE 2001 and 2002). The newly merged institutions are also charged with being more responsive to national needs, including through the forging of industry linkages. In the higher education sector, closer linkages to industry have also been supported by initiatives from both the Departments of Trade and Industry (DTI) and Science and Technology (DST). In the further education and training sector, the May 2004 State of the Nation Address (Mbeki 2004) and the new government's *Programme of Action* (ANC 2004) stress a combined focus on curriculum transformation and recapitalisation of college infrastructure. It is planned that relationships with industry will play an important role in making this two-pronged approach work.

EDUCATION, TRAINING AND GLOBALISATION IN THE SOUTH AFRICAN AUTO INDUSTRY

The role of education and training in attracting and maintaining the presence of transnational automotive manufacturers

The industry has its origins in decisions by international automotive manufacturers to assemble vehicles in South Africa for the Southern African market in the context of import substitution policies. As a result, the skills requirements were relatively modest. What was of more relevance was the growing size of the South African consumer market and the well-developed infrastructure of the country.

Nonetheless, the presence of artisanal skills related to engineering was clearly a necessary condition for the establishment of the first assembly plants. Such skills had begun to be developed in South Africa with the advent of the major minerals discoveries in the late nineteenth century. The discovery of minerals sparked a major development of infrastructural development and then the growth of heavy industry. By the end of the 1920s, these waves of economic development had

resulted in the creation of significant engineering capacity, which spanned the university sector (particularly the Engineering Faculty of the University of the Witwatersrand); eight technical colleges and internal capacity within the major parastatals (in electricity, steel and the railways) and the large mining houses (Chisholm 1992; McGrath 2004). Thus, the automotive industry could draw on the existing engineering skills base created by the largely internal dynamic of early South African industrialisation.⁴

Though racially segregated and inequitable, the South African system of education and training continued to provide sufficient skills for the automotive industry for several decades, particularly as the industry was largely insulated from international competitiveness issues by the highly protectionist stance of the Apartheid state.

However, by the 1970s, it was evident that this position was under threat. An economic downturn, the growth of worker militancy, the student unrest of 1976 and the progress of liberation struggles in neighbouring countries forced the regime into a reformist period. The political need for reform resonated with existing business concerns about the viability of the national skills system. Many employers were particularly concerned about the inefficiencies caused by racialised segregation of training provision and the need to upskill to respond to international technological changes.

Although the automotive industry had been relatively sheltered by import substitution policies, it continued to be partly owned by major multinationals. In ways that were specific to country of ownership, the automotive industry began to look closely at skills issues and technological upgrading as part of an attempt to catch up with trends elsewhere in these corporations, particularly in the German-owned firms, with their high proportion of foreign-owned equity. The leading non-racial trade union for the sector, NUMSA, saw the importance of these issues and developed a strong case for a higher skill workforce where racial and gender discrimination would be a thing of the past.

Thus, during the 1970s and 1980s, there was a growing consensus in the industry that skills were not sufficient but that this issue could be addressed, largely through in-house solutions. As I argue below, the work of NUMSA was catalytic in provoking the development of a new skills system, as part of the democratic settlement, which sought to build a more inclusive and higher skill system across all sectors.

By 1994, the industry was assured a large supply of potential new employees with 12 years of schooling as well as large numbers of graduates from the technikons (akin to polytechnics) and universities. The technical college sector had been weakened by the overall decline in apprenticeship numbers but the automotive industry retained its relationships with a small group of engineering colleges in Pretoria, Durban, East London and Port Elizabeth and had its own internal facilities. Thus, there appeared to be the potential for the industry to access the skills needed to become more competitive as it responded both to global pressures and to the specific incentives provided by the MIDP. Moreover, this potential was reinforced by

⁴ Any comment about the local nature of South African industrialisation needs to be placed in the wider context of British imperial expansion in the late nineteenth century.

the evolving HRD strategies of the new government, which promised greater state support to industry-relevant education and training.

The impact of the automotive industry on education and training in South Africa since 1994

This sub-section will explore what contribution the case study firms make to education and training through four sets of interactions:

1. what impacts do they have on local higher education providers through public private partnerships in research, student bursaries, etc.?
2. what impacts do they have on local FET providers (both public and private)?
3. what skills are provided within their plants and how does this provision align with elements of the National Skills Development Strategy?
4. how do they strengthen education (particularly for the poor) through their community outreach programmes?

The data suggests that there are indeed multiple interactions between these enterprises and the various sub-systems of education and training, both through human resources/training activities and corporate social responsibility.

Expenditure on training by car manufacturers grew from R84,4 million in 2002 to R119,6 million in 2003 (excluding such things as training done overseas) and has averaged around 2% of payroll in recent years (TISA and MIDC 2004: 71). This is double the amount paid in levies. The year on year increase in training expenditure by auto manufacturers of 42% compares to a less than 5% increase across manufacturing as a whole.

The nature of training within the manufacturing firms depends in part on their country of origin. For instance, Toyota has a tradition of bringing experienced Japanese workers to South Africa to provide training in new production techniques, whilst the German firms I am considering tend to take experienced South Africans to Germany in order to learn new skills and then use these workers to train their colleagues. Strikingly, German-owned manufacturers in South Africa spend up to five times as much as a percentage of payroll on training in their South African operations as compared to their European and North American ones. In part this is because of the need to engaged in skills development from a political perspective. However, it is apparent that technological choices also play an important role. For instance, BMW SA's body shop is 37% automated compared to the 90% in Germany.

BMW South Africa

An overview

BMW South Africa boast the first BMW plant established outside Germany, in 1973, which is still the only production facility in a non-OECD country. Initially it assembled vehicles from completely knocked-down kits. However, it has graduated to being the centre for production of 3 series right hand drive cars for the global market, exporting 80% of its vehicles. BMW South Africa also imports and sells the full range of other BMW vehicles, including motorcycles, throughout Southern Africa. BMW South Africa employs more than 3 500 staff in its production plant at Rosslyn (near Pretoria) and its headquarters at Midrand (between Pretoria and Johannesburg). It is estimated that the company supports an additional 18 000 jobs through its supply chain, with 60% of components being sourced from within South Africa.

Given that the Rosslyn plant is responsible for global production of high quality vehicles, it is apparent that a major focus of the plant is on consistent high quality as measured by international benchmarks in the automobile industry. In line with the company's other plants, Rosslyn has ISO 9001 and 14001 and BS 8800 certification, illustrating its concerns with total quality management, environmental management and work safety and health. Rosslyn was the first auto plant globally with this triple certification. In 2002 it was given a gold award for product quality by the US consumer research organisation, J.D. Power and Associates.

Alignment of workplace training and development activities to the national skills vision

There are a number of ways in which BMW South Africa appears to have taken a conscious decision to be an active participant in the emerging national skills development system. These include: involvement in the SETA system; provision of learnerships; and involvement in the Investors in People initiative.

Involvement in the SETA system and compliance with the Skills Development Levies Act

The Skills Development Act of 1998 set up a series of 25 Sector Education and Training Authorities (SETAs) as a core tool of the new national skills system. These SETAs, comprising employer, employee and, in some cases, government and community representatives, were given the responsibility for identifying immediate and future skills needs for their sectors and for developing strategies to respond to these needs. Through the Skills Development Levies Act of 1999, all firms with a turnover of more than R250 000 are required to pay the equivalent of 1% of their payroll to the South African Revenue Service. 80% of this money then goes to the SETA under which the firm is registered. Firms can reclaim most of this money by producing a Workplace Skills Plan and evidence for delivery against this. The rest of the funds are available to the SETA for administrative costs and for funding its own initiatives, such as free training for micro and small enterprises.

BMW South Africa is represented by its Group Manager: Training in the relevant chamber of the Manufacturing, Engineering and Related Sector Education and Training Authority (MERSETA) and reports having played an active role, along with the other automobile manufacturers in developing the Sector Skills Plan.

BMW South Africa has produced annual Workplace Skills Plans as required by the legislation and has been able to provide evidence for maximum grant payments each year.

Crucially, BMW South Africa has sought to align its WSP with its additional requirement from the Department of Labour for an Employment Equity Plan. BMW South Africa appears to pay considerable attention to ensuring that those previously disadvantaged in terms of both race and gender have their training needs met at all levels of skill and occupation.

Learnerships and NQF alignment

The 1998 Skills Development Act also legislated for a new qualification, the learnership. The learnership is intended to be a tripartite agreement between learner, employer and training provider that stipulates the combination of skills development on- and off-the-job. Such qualifications are registered with Education and Training Quality Assurance structures within SETAs and are located at various points on the National Qualifications Framework. Overall responsibility for the recognition of all such awards lies with the South African Qualifications Authority.

There are two types of learnerships, depending on the employment status of the learner. Those who are already employed within a firm are governed by what are termed 18.1 learnership agreements. However, it is also possible for an employer to agree to take on a learner for the duration of their learnership only. Such learnerships are known as 18.2 learnerships.

BMW South Africa is offering a series of learnerships in the fields of autotronics, mechatronics, millwrights and logistics. All of these learnerships are industry-wide awards. Additionally BMW South Africa has taken 50 18.2 learners as part of the industry's commitments arising out of the 2003 Growth and Development Summit.

The company has also committed itself to the realignment of all its courses and material to the National Qualifications Framework by 2005.

Investors in People

Investors in People (IiP) was originally a British award but now is offered in a range of countries globally. It is intended to be a benchmark of high standards in workforce development.

As part of the European Commission and Department of Labour's joint Labour Market Skills Development Programme, IiP was identified as the preferred national award in South Africa for workforce development. This has resulted in IiP being

identified as the relevant standard for indicator 1.3 of the National Skills Development Strategy and in European Commission support to the development of a national programme for liP roll out.

Led by the company's Managing Director, BMW South Africa identified the pilot phase of the liP roll out as something that the company wanted to be part of, believing that such a scheme advanced the broader corporate goal of a high quality workforce making a high quality product. BMW South Africa was chosen for this pilot and successfully achieved the Investors in People Standard in September 2002.

In August 2004, BMW South Africa's liP status was reviewed by external auditors who judged the company as continuing to meet and, indeed, exceed the Standard (Wilson and Verzmoter 2004).

The liP participation of BMW South Africa appears to illustrate a strong commitment to broad training and development of the staff and, more importantly, a good degree of operationalisation of this commitment. The company has been judged to have successful team working practices; a serious commitment to employment equity; and to be engaged in major investments in training, ranging from ABET through to senior management training.

Internal training and development activities

BMW South Africa seeks to link training to broader staff development issues and to recruitment and, ultimately, to an overall vision of being a learning organisation.

There is a focus on literacy and numeracy programmes to address the needs of the most disadvantaged of employees. The Automotive Manufacturing Industry Certificate (AMIC), the main form of shopfloor training (an industry-wide standard), provides an average of 3,5 days training per annum per employee. As noted above, BMW South Africa is also offering a series of learnerships, which have largely superseded the company's established apprenticeship programme.

Above these shopfloor oriented programmes lie a series of programmes for supervisor and leadership training. At the higher education level, there are a small number of bursaries for potential employees. There are also opportunities for study leave and grants for job-related higher studies.

The company's graduate training programme focuses on high potential black graduates and is linked to the commitment to change the racial structure of the management grades. It takes graduates from engineering (mechanical, industrial or chemical) or business management or communications programmes who are then employed for two years within the company where they receive further training and coaching. There are a series of management and executive development programmes, some of which require study overseas, particularly in Germany.

BMW South Africa also places strong emphasis on the educational aspects of its HIV/AIDS campaign, which has resulted in a fall in sero-positivity and AIDS-related

deaths within the company. It is a member of the World Economic Forum's Global Health Initiative.

Supplier and retailer training are also supported. Supplier training focuses in part on environmental sustainability. BMW South Africa has organised a waste minimisation club as a forum for discussing good practices. It also encourages suppliers to get ISO 14001 certification. From no supplier certification in 1998, there was 80% certification by the end of 2003.

Partnerships with further and higher education

BMW South Africa has partnerships with the major local public providers of further and higher education and training: the University of Pretoria, Tshwane University of Technology, Tshwane North Public Further Education and Training College and Tshwane South Public Further Education and Training College. At any one time, 50 students from TUT are on site doing their industry placements.

In response to the challenge of technological upgrading in preparation for production of the new 3 Series BMW from January 2005, BMW staff needed to be trained in the new technologies employed in the manufacturing process. The Tshwane University of Technology's Automotive Technology Centre, which was established by the AIDC (see below), helped BMW to develop and deliver team leader training, a new learnership in manufacturing and assembly logistics and a series of in-house short courses.

The education and training dimension of corporate social responsibility.

The company also has a number of corporate social responsibility activities that have an education and training dimension. These form the bulk of an annual corporate social investment budget of between R3 and 5 million.

BMW has a set of more than 60 schools in Gauteng and Mpumalanga. The "BMW family of schools" must meet some basic standards in terms of their commitment to their upliftment and then have access to a range of educational interventions supported by the company. Currently, these interventions are primarily in the areas of supporting literacy; science, mathematics and technology learning; and environmental awareness.

Participating schools are provided with books and assisted with developing libraries and a reading culture amongst their learners.

BMW South Africa has also established Centres of Excellence in Mathematics, Science and Technology Education, building on research from Boston and Columbia Universities and relationships with South African educators and the Department of Education. This initiative has sought to develop improved SMT learning in primary and secondary schools. This project provides a range of science and technology equipment to schools and in-service training to teachers. 7 000 learners are impacted by this project in Gauteng.

Through the Schools Environmental Education Development (SEED) Project, BMW SA seeks to create awareness about the environment in schools. Schools are encouraged to develop vegetable gardens and to recycle water, paper and organic material. The practical learning is also supported by teacher workshops that seek to encourage the weaving of the project learning into classroom activities, and their alignment with the principles of outcomes based education. In this way, the Project seeks to maximise its impact on educational attainment. Educational attainment is also supported by the improved nutrition of learners, and there has also been a positive impact on attendance rates. Schools are also given incentives for exceptional performance.

At the Hammanskraal campus of the University of Pretoria (situated in a former homeland area) the company has supported the upgrading of sports facilities and has helped catalyse a programme whereby university students with coaching experience make themselves available at the campus to coach people from the surrounding area.

In partnership with the Youth Development Trust, an NGO, BMW is planning to offer enterprise education to its partner schools. At present, YDT runs a "mini-MBA" for university graduates and assists them in placement into either employment in the corporate sector or into self-employment, supported by a mentorship programme. BMW South Africa is seeking to adapt this model for use in schools.

At the request of former President Mandela, BMW South Africa funded the construction of a clinic and school in Ndonga in the Eastern Cape to the sum of R5 million. BMW is continuing to support the school, which has seen its matriculation pass rate rise from 5% in 2000 to 44% in 2003.

BMW South Africa also runs a student exchange programme that allows children of employees to spend one year in Germany as exchange students. Employees' children aged three to six can enrol at one of two BMW Early Learning Centres in Rosslyn and Midrand. Currently, there are approximately 120 learners in these two facilities.

In its educational programmes within the overall corporate social investment activities BMW South Africa appears to place considerable emphasis on on-going relationships with partner institutions. The bulk of the work is with a group of schools who have to show a commitment to change and whose performance is monitored by BMW. Once schools are in the programme, BMW is committed to on-going support.

BMW South Africa is a member of the National Business Initiative and its sister organisation, the Business Trust. The NBI has facilitated the merging of further education and training colleges through its College Collaboration Fund. It has also implemented projects designed to improve the efficiency of the schooling system by reducing the repeater rate through improved reading and writing in primary schools; and to improve the performance of secondary schools by improving organisation, management, teaching and assessment. Overall, NBI and Business Trust programmes are planned to reach 1 million primary school pupils in disadvantaged communities in all 9 provinces; 400 000 secondary school pupils in similar communities; 400 000 FET college students and 10 000 currently employed and 5 000 currently unemployed trainees.

DaimlerChrysler South Africa

An overview

DaimlerChrysler South Africa is wholly owned by DaimlerChrysler AG, based in Germany. It manufactures Mercedes Benz, Chrysler (including Jeep) and Mitsubishi vehicles at its plant in East London. It also has two sister companies, DaimlerChrysler Services, providing vehicle financing and insurance, and debis Fleet Management (in which DaimlerChrysler Services has a 75% stake), providing fleet management and leasing services. DaimlerChrysler South Africa provides corporate services for all three companies from its Pretoria headquarters.

The East London plant dates back to 1948 when it was an assembly plant for a wide range of companies. In 1984 Daimler-Benz acquired a 50,1% share in this plant. In 2000 the plant exported its first batch of Mercedes C-class vehicles. There is also a parts distribution centre in Durban.

DCSA had over 4 000 employees as of 31st December 2003, with another 2 000 employees in the other firms within the group (Köpke 2004).

Human resources development within DCSA

This section will look both at HRD activities related to the main two sites of Pretoria and East London. The focus of HRD activities in both cases is divided between DCSA staff and staff of related enterprises. In the case of Pretoria, the external focus is on the dealer network, whilst for East London it is on the supplier network. This sub-section looks at both the internal and external HRD work of Pretoria and East London respectively.

Pretoria- Training for Head Office and for the Dealer Network

DaimlerChrysler South Africa has a graduate training programme that has evolved from a previous programme called the Accelerated Competence Acquisition Programme. This was primarily a corporate responsibility programme where graduates were given training for the labour market to a programme where there is more focus on subsequent employment in DCSA or its partners. Globally, the graduate training programme is very exclusive and focused on high flyers for the corporation worldwide; the South Africa is much more focused on employment equity. DCSA sees itself as the corporate leader in this regard. In addition, training for executives takes place in Europe within the overall global company. Management training of this kind for head office is not primarily structured in ways that reflect an NSDS influence. Nonetheless, it is clear that DCSA is committed to meeting the government's equity targets and does reflect this in its management training.

The dealer training approach does reflect more of an obvious response to the imperatives of the NSDS. Before the NSDS, this had not been a particularly important area of focus but the coming of the new skills system encouraged DCSA to review

and expand its activities in this regard. The programmes now offered are seen as reflecting both the company's commitment to the NSDS and a realisation of the business sense of enhanced training in this area.

A sales learnership at level 6 is being piloted with 24 learners from dealerships and they are expected to complete in March 2005. DCSA is also involved in the development of learnerships for technicians servicing vehicles at dealerships and for dealerships' parts departments. These learnerships will be largely industry-wide in its focus and so DCSA also offers a four level Specialised Training offering Enhanced Professional Skills (STEPS) programme, which is company-specific. This programme began in 2001 and is intended to encourage dealerships to develop career paths for their staff.

East London – Training for the Manufacturing Plant and for Suppliers

It is unlikely that DaimlerChrysler would have chosen to open a manufacturing plant in East London after 1994 if one was not already there. The history of industrial relations in the past two decades at the plant had been highly confrontational, although this had begun to improve in the era of political negotiations, and the history of import substitution had left skills and quality at inadequate levels. Production runs were geared for domestic consumption and were too low to be internationally competitive.

Nonetheless, DaimlerChrysler were already based in East London and the plant was perhaps the most complex Daimler facility outside Germany. It produced a range of Mercedes passenger models, including extremely demanding niche vehicles such as the S-class convertible; assembled passenger cars for other OEMs (Honda and Mitsubishi); and built Freightliners for Daimler's US heavy vehicle subsidiary. All of this was done with a single paintshop and obviously required a lot of internal competence prior to the export drive. In fact, Daimler was already operating a training centre before 1994 in which it trained artisans such as turners and fitters. Shortages did exist, especially at higher skill levels, necessitating a recruitment drive that looked nationally rather than provincially. Nonetheless, when the C-class was first produced for export, there was a human capital base with which to work.

In preparation for the launch of the C-class model (W203) for export, DCSA undertook a major skill intervention programme. As well as upgrading existing workers' skills, Daimler ran a newspaper advertisement for new applicants with matric-level qualifications and received 45 000 responses, many of which were from those qualified to technician level. After screening 12 000 applicants, DCSA recruited 1 000. This marks the shift of the entry requirement for shopfloor workers to a minimum of 12 years schooling.

The skills programme in East London involves all levels of employees. At shop floor level, it initially allowed workers to train for any skill they liked; later this was limited to subjects of direct relevance to the plant. The introduction of modern production principles implies that workers must be comfortable working in groups; hence it is not only the skills of individuals but the aggregate skill profile required for multiskilling and multitasking in teamwork assignments that determines the relative success of

human resource upgrading in the plant. Technical skills are primarily trained by the in-house training centre, according to South African industry-wide standards.

Additionally, some 130 shop floor employees have been to the Bremen plant for training. There they worked with a mentor personally assigned to them who upon completion of their visit accompanied them back to South Africa where they then jointly trained other workers, thus multiplying the upgrading effect across the shop floor.

Learnerships are increasingly being used in mechatronics and the new programme in autotronics (both programmes are with Buffalo City FET College).

At the supervisory level, DCSA enrolls employees in further education and training institutions, most notably Buffalo City College, as well as higher education institutions, namely the University of the Witwatersrand, Rhodes University, and the Nelson Mandela Metropolitan University. For managerial functions, staff are sent to Germany. For example, in December 2004, eight DCSA employees were full-time engineering students at the University of Karlsruhe.

It is broadly true that there is no shortage of shop floor and supervisory recruits in the Eastern Cape, although the desired level of competence is a problem. The situation is different with respect to higher-order skills. DCSA sought to address this issue through a national recruitment strategy but has found it hard to retain metropolitan-trained professionals in what is a more provincial environment. As a result, it has increasingly sought to recruit locally and to focus on upgrading its local provider institutions. Where it is still not yet possible to meet skills needs through this route, DCSA grants bursaries to local employees to study at institutions elsewhere in South Africa. During the semester break, these grantees return to work in the East London plant. Upon graduation they join the firm and thus embody an acceptable level of technical training as well as the necessary exposure to the shop floor and the more tacit knowledge required to operate on it.

Corporate social responsibility and education

DaimlerChrysler is involved in a wide range of corporate social responsibility programmes that have an education focus.

In the Dinaledi Project, DaimlerChrysler, in partnership with the Telkom Foundation and the Department of Education, is supporting the provision of technology equipment to 100 schools. Through the Sifikile Project, the company is supporting improved teaching and learning in science, mathematics and technology in rural schools. In conjunction with Africa Scientific Instrumentation (Pty) Ltd, DaimlerChrysler is supporting mathematics, science and technology education in Boksburg in Gauteng. The company also sponsors the national Baja competition in mathematics and science.

In the area of literacy, DaimlerChrysler is a participant in the Rally to READ Programme, a national initiative for the distribution of educational materials to under-resourced schools, originally started by the Financial Mail and McCarthy Motors (a

major dealership) in 1998. DCSA brought the programme to the Eastern Cape in 2000 (FHISER 2003).

Every year a fleet of 4x4 vehicles delivers book box libraries to remote schools. READ also provides teacher training in the use of the materials and conducts regular follow-up visits. DCSA also supports the sister programme of READ, which focuses on school management training.

DaimlerChrysler also supports road safety awareness education for school children through the use of mini-cars.

DaimlerChrysler has funded the construction and equipping of a new school and crèche in the impoverished village of Chalumna in the Eastern Cape. The investment in the school's infrastructure was about R10 million (FHISER 2003: 54). In spite of this investment, the school quickly ran into management difficulties and suffered a sharp drop in enrolments. In response, DCSA agreed to fund the appointment of a full-time mentor for the school for a year. DCSA is also supporting the maintenance of the school.

In association with the Tembisa Childminders Association, Basadi Tshwaranang Day Care Centre and 48 day care centres in the Mamelodi township of Pretoria, DaimlerChrysler is seeking to upgrade the quality of childminding through training and the provision of teaching aids.

DaimlerChrysler supports CIDA University, which is a low cost higher education institution based in central Johannesburg and focusing on disadvantaged students. The current agreement is for R9 million over three years. The company also provides sponsorship of students at four public universities.

DaimlerChrysler, like BMW, is a member of the National Business Initiative and its sister organisation, the Business Trust.

The auto industry's interaction with national and provincial human resources development strategies

The national dimension

The auto industry has had a historical influence on the evolution of HRD policy at the national level. Two of the three most senior officials responsible for skills development in the Department of Labour come from a background in NUMSA. Indeed, one of them is a former employee of one of the automotive manufacturers. McGrath (1996) and Badroodien and McGrath (2005) argue that NUMSA was a very major driver of the evolution of the skills development system, its "Vocational Training Project" (NUMSA 1991), being the very first key document in the evolution of the new strategy. Although NUMSA spans automotives and the broader engineering sector, it can be argued that the struggle for upskilling amongst black workers in the auto sector played a crucial role in the evolution of skills development.

NUMSA drew heavily on arguments about Post-Fordism and were early proponents of the thesis that South African manufacturing needed to upskill in order to compete

internationally when the country would eventually emerge from economic isolation. This position was to be central to the final formulation of a national vision for education and training, including the establishment of the National Qualifications Framework (McGrath 1996; Badroodien and McGrath 2005).

However, the current role of the sector in influencing HRD policy at the national level is far less obvious. In the development of the second National Skills Development Strategy (to begin in April 2005), for example, business is but one of five constituencies involved in negotiations, along with government, labour, community and providers. Its relative influence in these negotiations is slight, particularly as there is often a conjunction of views from community, labour and government that stresses the need for more inclusive views of skills development than the business lobby seems to favour. Indeed, business as a constituency runs the risk of being the least enthusiastic partner in negotiations about skills development.

The voice of the sector is also relatively muted as automotives forms only one out of five chambers within MERSETA, itself only one of 25 SETAs. However, it may be argued that the long history of negotiations between NUMSA and NAAMSA about issues of training, grading and wages; and the particularly globalised context of the industry meant that the sector was already at the cutting edge of South African developments in skills development.

In this light, it is not surprising that the automotive manufacturers have been relatively strong in implementing new policies once they are adopted. They unequivocally echo the line from government that the new skills system, which aims at building higher skills whilst at the same time giving radically widened access to skills, is good for both business and society.

Moreover, it can be argued that the sector has helped the new strategy to work as a result of the decision by several of the most prominent firms in the sector to be early adopters of elements of the new strategy. Both BMW and Volkswagen were amongst the first group of companies to meet the Investors in People standard, whilst all manufacturers have been early adopters of learnerships into their training practices. Particularly through the role of the AIDC, the sector has also been a leader in attempts at building stronger relationships between industry and public education and training providers. Practical outcomes of this include a greater proportion of older learners entering Tshwane North College and AIDC's role in supporting automotive-related skills development for the unemployed through its accreditation as an ESDLE.

The provincial dimension

Since 2003 there has been a push to develop Provincial HRD Strategies, alongside Provincial Growth and Development Plans. This process is still on-going but there appear to be opportunities within this for the industry to get a higher profile in planning within its core provinces: Gauteng, the Eastern Cape and KwaZulu-Natal.

Blue IQ

In the case of Gauteng, it is evident that the industry has developed a strong relationship with the provincial government and, in particular, with the Blue IQ initiative, a massive public-private partnership for infrastructural development. Across its 11 projects, Blue IQ has invested R3,7 billion of provincial funds in infrastructure to support public-private projects in tourism, research and development and high-value manufacturing, including the automotive supplier park discussed above. Thus, the auto industry is seen as an integral part of the provincial development strategy.

In 2002, the Gauteng Provincial Government, as part of its larger Blue IQ project for regional integration into the global knowledge economy, launched a R1 billion greenfield Automotive Supplier Park in Rosslyn. Rosslyn is home to the BMW, Nissan and Fiat plants, whilst Ford is located in Pretoria itself. The Gauteng provincial government contributed R200 million towards the development costs of the park and the private sector contributed R800 million, whilst the Tshwane Metro Council made 80 hectares available for the supplier park. The completion will require five to eight years and it is anticipated that between 20 and 25 companies will operate in the park, with the first of these already onsite in 2003. Some of these firms were already operating in the Rosslyn area but one of the new tenants is a foreign-owned component manufacturer attracted to South Africa for the first time. There are many such parks internationally and they are argued to significantly cut logistic costs for companies. What is unique about the Rosslyn park is that it will serve a group of vehicle manufacturers rather than just one (TISA and MIDC 2003: 38).

This has resulted in a range of research, education and training initiatives that have sought to strengthen the relationship between the province's public education providers and the automotive industry. However, again, it can be argued that this was primarily an initiative of the province (and of Economic Affairs rather than Education) rather than the industry, although the industry has become an enthusiastic partner.

The Automotive Industry Development Centre

Linked to the Blue IQ initiative is the AIDC, which has provided a range of support to the sector including to HRD. The AIDC was established in October 2000 through a partnership between the Blue IQ initiative and the Council for Scientific and Industrial Research, one of South Africa's national science councils (AIDC 2004b).

One of the AIDC's functions is to support human resources development for the automotive industry. It sees its role as acting as a catalyst or facilitator between the supply-side (public further and higher education and training institutions) and the demand side (the automotive sector). In this regard, it has signed agreements with a number of higher education providers to develop programmes for which there is a clear industry demand. Programmes have been developed in all three NQF bands, as well as for Adult Basic Education and Training (ABET). Apprenticeships have been replaced by a series of industry-wide learnerships.

Furthermore, the HRD Department is also responsible for a number of socio-economic programmes that impact on the people and communities servicing the automotive industry (AIDC 2004b). These include active voluntary counselling and testing programmes for HIV and AIDS in the workplace, re-employment programmes and technical skills development at school level (TISA and MIDC 2003: 52).

Between 2001 and 2004 the AIDC invested R28 million in three public providers in Gauteng. This investment enabled these institutions to leverage an additional R16 million from industry to support capacity-building. Training initiatives cover all levels of the National Qualifications Framework, from ABET training on the shop-floor right through to a post-graduate level. The investments had led to 26 new academic posts and had reached more than 13 000 learners by mid-2004. All new programmes were aligned with the MERSETA Sector Skills Plan (AIDC 2004 and b).

University of Pretoria

The AIDC established two new chairs in engineering at the University of Pretoria. The first of these was the Chair in Life Cycle Engineering (LCE), a field that encompasses environmental engineering, recycling and the entire life cycle of vehicles and components. This has led to the development of a post-graduate course in Life Cycle Engineering, and the first students holding Master's degrees in LCE-related disciplines will graduate by the end of 2004.

The second is the Chair in Automotive Manufacturing, a discipline within the Department of Industrial Engineering. This focuses on the preparation of undergraduate students to make a career in the automotive industry. Included within this is the Black Engineering Development Programme, which seeks to increase the numbers of black engineering graduates from the university. The secondary focus is the development of people already in the industry by means of post-graduate qualifications in automotive-related disciplines. A further Chair in Supply Chain Management/Engineering is planned for 2004-5 (AIDC 2004a and b).

Tshwane University of Technology

Prior to the higher education mergers, the AIDC had partnerships with both the Technikon Pretoria and the Technikon Northern Gauteng – the two partners in this merger.⁵

The Automotive Technology Centre, a joint initiative between TUT (Technikon Pretoria) and the AIDC, offers learning programmes at undergraduate level in the fields of Manufacturing and Mechatronics Engineering. The courses have been developed in accordance with specific needs identified by the automotive industry.

⁵ Technikons were established in the late 1960s and were modelled on the British polytechnics. The new Universities (or Institutes) of Technology are intended to keep the same programmatic focus but to offer higher degrees and deliver more research. The technikons were originally racially-exclusive and Technikon Northern Gauteng was located in multiple campuses in some of the African townships north of Pretoria, whilst Technikon Pretoria was based in the city and served a white student body.

The ATC is also conducting research into Closed Loop Automated Manufacturing (CLAM), a process that reduces manufacturing times and which is already being introduced at Rosslyn. Approximately 300 employees from industry attended short courses at the ATC between 2001 and 2003 (AIDC 2004a and b).

TUT is becoming a strategic training partner for BMW for the launch of its new BMW 3-Series in 2005. Projects currently underway include the development of a learnership in Logistics, the implementation of the mechatronics learnership (also in operation at Ford), the development and implementation of a Diploma in Mechatronics and the development and implementation of a Diploma in Automotive Manufacturing (AIDC 2004a and b).

TUT (Technikon Northern Gauteng - TNG) established the Institute of Technology Innovation (IOTI) as part of the AIDC agreement. The Institute has played an important role in skills development, focusing particularly on areas identified by the industry as "critical scarce skills". At the same time, given its location and history, it has also focused on providing such skills for historically disadvantaged individuals. IOTI has focused on component manufacturing, autotronics (petrol and diesel), die casting and tooling with the aim to assist learners to convert newly acquired knowledge and technologies into commercially viable products and sustainable businesses.

TUT participated for the first time in the Mini Baja in 2004. The Mini Baja is a competition in which students build their own cars to race against that of other higher education institutions. TNG entered with the first all black engineering team and a female driver and completed the national competition (AIDC 2004a and b).

Tshwane North Further Education and Training College⁶

The Automotive Training Centre (ATC), a project at Soshanguve Campus, delivers customised education and skills development solutions at a shop-floor level to the automotive industry. The focus of the initiative is to refine training methodologies, practices and models, which support the customised on-site and flexible delivery models. The ATC has generated approximately R18 million in revenue for Tshwane North College since its inception (AIDC 2004a and b).

Projects currently underway include basic technical skill training, sales and services training, a part and tyre training development project, the training of technical personnel for dealer networks, assessment and training of supplier personnel, and personnel assessments at local auto manufacturers. It has focused in part on taking existing industry awards and aligning them to the National Qualifications Framework. The Automotive Training Centre jointly implemented the new component manufacturing learnership at one of Gauteng's largest first tier suppliers (AIDC 2004a and b). Overall it has been involved in the delivery of 11 learnerships to approximately 550 learners (AIDC 2004b: 36).

⁶ As with Universities of Technology, Further Education and Training Colleges have emerged out of racially segregated technical colleges. The Soshanguve Campus was formerly a township college, located next to the main campus of TNG.

Overall, through a variety of programmes for the industry, the ATC has provided nearly 200 000 “learning days” since its inception in 2001 for nearly 5 000 learners (AIDC 2004b 36-7). The demographic split of these learners is worth noting:

Table Two: Learner demographics at the ATC, 2001-4

Characteristic	Learner Numbers (Total 4 840)				Percentages			
	Gender	Male	3 744	Female	1 096	M	77	F
Race	Black	4 210	White	630	B	87	W	13
Employment	Employed	3 906	Unemployed	934	E	81	U	19
Age	Under 35	1 994	Over 35	2 846	<35	41	>35	59
Occupational Level (of training)	Shopfloor	3 914	Supervisory	926	Sh	81	Su	19

(Source: AIDC 2004b: 36-7)

There are two striking figures within this table. Although the gender balance of the delivery is still skewed, it can be argued that 23% female participation is a good step forward in what is essentially a technically-oriented programme. Second, the proportion of older learners is a radical departure from normal practice in public FET colleges. The latest figures for the age distribution of learners in public colleges shows only 9% of learners as being over 35 (Powell and Hall 2004: 40). The presence of 59% older learners in this project is an example of what can happen to enrolments when real relationships with industry begin to develop. Thus, it is of potentially great significance for the wider system given the policy stress on increasing participation from older, employed learners (DoE 2001; DoE and DoL 2001).

In 2004, AIDC got accreditation as an Employment and Skills Development Lead Employer under the Department of Labour scheme of that name. The AIDC project is in line with the overall ESDLE goals of providing skills development for the unemployed and for SMMEs. 300 previously unemployed learners are in the first year of a three year pilot project, which is offering a learnership in automotives at NQF level 1. It is intended that this programme will develop to higher NQF levels in subsequent years. In addition to a learnership agreement with six public FET colleges in Gauteng, the AIDC is assisting these colleges with developing learnership units to build further linkages to industry.

AIDC is also supporting plans for two new training facilities in Gauteng to service the industry. With Ford, there are plans to outsource much of the company’s practical training to a new facility nearby the factory in Silverton and to make this a satellite of the Mamelodi Campus of the Tshwane North College.⁷ It is planned that this facility would also provide training for the nearby retail and repairs cluster in Gezina and offer community training opportunities.

AIDC also has plans to host a training facility within the Automotive Supplier Park at Rosslyn. Currently, it is in conversation with BMW in this regard and with Tshwane University of Technology, Tshwane North College and Tshwane South College.

⁷ Located in Pretoria’s largest township.

The Eastern Cape has based much of its industrial strategy on spatial development. It has two major spatial development initiatives (SDIs) and one of these, the Fish River SDI, is heavily focused on the East London - Port Elizabeth corridor and the automotive industry as one of the key employers therein (Mayer 2004).

The province's HRD strategy is under development and is likely to highlight the very serious problems of drop out and poor quality within education in the rural parts of the province. However, the East London – Port Elizabeth corridor does contain a significant concentration of higher quality education and training institutions at all levels. The industry has strong links also with Rhodes University and the new Nelson Mandela Metropolitan University (especially the former Port Elizabeth Technikon). AIDC has also concluded a further agreement with four colleges in the Eastern Cape to deliver a parallel programme. Strikingly, one of these colleges, Ikhala, is a rurally situated college that has opened new mechanical engineering facilities and has been able to agree with both Nissan and General Motors that it will supply learners to them. Supporting these initiatives is an obvious step for the Eastern Cape HRD Strategy (Cosser 2003).

KwaZulu-Natal, like the Eastern Cape, is characterised by a highly urbanised region (located around Durban and Pietermaritzburg) with large rural, former homeland areas (55% of the population live in rural areas). A change in provincial government in April 2004 means that the KZN Government is still refining a new vision for the province. It appears likely that the automotive industry will not be particularly central to the new vision, as it is a relatively small player in the province, with only one car manufacturer present, Toyota. However, it may be of considerable significance for provincial development in the future as it is gearing up for a major vehicle export programme. The province has a strong engineering base to build upon but there are clear opportunities for stronger relationships between the industry and providers (Erasmus 2004).

Although the sector does receive considerable prominence in the planning of the provincial governments of the Eastern Cape and Gauteng, there is a strong sense that this is largely due to the provinces' realisation of the importance of the sector, rather than the sector's own lobbying.

The limits to industry – policy interactions

South Africa demonstrates an increasingly sophisticated attempt to align industrial and skills policies in such a way as to promote global competitiveness whilst simultaneously addressing domestic concerns about equity and redress. The auto industry is a partner of the state in this project, but clearly a junior one.

However, the relationship between the efforts of MERSETA and AIDC to develop partnerships with public providers and the policies of the Department of Education needs more critical unpacking. For instance, there appears to be a clear alignment between these bodies' efforts to encourage public FET colleges to offer automotive learnerships and DoE statements about the need for colleges to become more responsive. The bald evidence of AIDC partnerships with 10 colleges and the numbers of learners from the industry passing through Tshwane North College

suggest that these attempts are bearing fruit. However, interviews with MERSETA and AIDC reflect a wider, cross-sectoral industry frustration with the slowness of many colleges to see the possibilities inherent in partnerships.

Part of the problem here lies with the Department of Education. The DoE has continued to give colleges the perception that it is ambivalent about the desirability of them offering learnerships, which are programmes of the Department of Labour. A decade after the *South African Qualifications Authority Act* (RSA 1995), which established the National Qualifications Framework, the DoE has still not made significant progress in aligning college curricula to the new system. Moreover, the regulations regarding funding and accreditation of colleges as training providers for SETAs continue to cause confusion. Some colleges, such as Tshwane North and Buffalo City, have chosen to take risks and actively pursue linkages with industry, but others have preferred to retain their focus on their existing programmes.

Thus, it appears that the relationship between the industry and changes in the education and training system is complex. The globalised nature of the industry became increasingly realised in South Africa in the run up to 1994. This highlighted issues of skills development for international competitiveness. This in turn led to a dynamic struggle between labour and capital to shape the sectoral response in ways that most furthered their interests. Out of this struggle came the first formulations of elements that were to shape the eventual national skills system of the early democratic period.

The central role of the industry in shaping skills and HRD policies has waned subsequently as the debate has shifted more to the roll out of such ideas to all sectors and the industry has become more reactive to policy developments. Nonetheless, its role as an early adopter may be important for the wider take up of the new system.

Nonetheless, the industry's strong spatial concentration has led to its identification by the provincial governments of Gauteng and the Eastern Cape as a key sector for provincial support. At the same time, the Department of Trade and Industry sees the sector as a strategic one for support in terms of both industrial and trade policy.

Partnerships have emerged out of these provincial and national prioritisations of the sector. For this study, the most significant of these is the AIDC. Along with the Automotive Chamber of MERSETA, AIDC has then played an important role in trying to bring together the industry and public providers. In spite of the degree of reluctance that still seems to be present in many of these providers, and the degree of policy incoherence in this area, these sectoral bodies do appear to be making a contribution to furthering the overall aims of the South African HRD vision in terms of encouraging stronger public provider responsiveness to industry.

THE CASE OF THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY: WHAT DOES IT TELL US ABOUT GLOBALISATION AND EDUCATION AND TRAINING?

I started this paper by noting three sets of potential relationships between globalisation and education and training:

1. education and training supply and its effects on globalisation through the encouragement of FDI and/or migration;
2. globalisation's impact on education and training through an increase in domestic and/or international demand for skills; and
3. the interaction between globalisation and education and training policies.

The automotive industry was able to enter South Africa in part because of the existing state of skills in the country, which had resulted from responses to earlier processes of industrial development around mining, infrastructure and heavy industry. The skills base combined with the presence of good infrastructure and a relatively large domestic market to encourage initial investment in the sector. However, although skills were in abundance, by the late 1970s it was evident that they were in need of upgrading and deracialising. Here the industry (driven in large part by the leading trade union, NUMSA) was to play a catalytic role in bringing about a national response to education and training weakness that ensured that skills development was broadly sufficient for the industry's needs. Skills were never the main reason for investment but were always good enough to support particular investment decisions.

There is no clear evidence for international migration within the context of the automotive sector. Nonetheless, senior managers are part of an international corporate elite and are participants in companies' global training programmes. Equally, these transnational enterprises also move skilled workers temporarily between countries to teach or learn new skills.

Whereas other sectors of the South African economy, most notably mining, were built heavily on imported labour, this has been less true for the automotive sector and any new investments are likely to lead almost exclusively to jobs for South Africans, except for small numbers of high skilled expatriates likely to be from the home countries of the automotive firms.

The automotive industry is an important source of improvements in both the quality and quantity of skills in South Africa and, in particular around the two main nodes of the industry around Pretoria and the East London – Port Elizabeth corridor. The industry is a major provider of skills development, both within its own workshops and through its partnerships with public providers. This is made clear by the statistics presented in this paper for learner days per annum.

The relationships between company training needs and the public education and training system are also of potentially wider significance. The industry has recently been at the forefront of business linkages with the public further and higher education and training providers. Such programmes have brought staffing, additional resources and increased enrolments for institutions and so have strengthened their infrastructure. They have also furthered the process of greater institutional responsiveness of institutions, a stated aim of Department of Education policy. Whilst there is considerable frustration within the automobile sector about the speed of the public providers' response to these initiatives, it is clear that the sector's efforts have the potential to inform and encourage wider initiatives of this kind.

The automotive manufacturers have also been important supporters of the new skills development system introduced by the Department of Labour and have contributed to the spread of ABET, learnerships and Investors in People. Moreover, both of the case study enterprises have also encouraged the spread of such practices to their supplier and dealer networks. Given the newness and, hence, potential fragility of the new skills system, the strong participation of the automotive manufacturers in the new system has probably helped to promote the overall success of the system.

This sector was the initial driver of much of recent changes in skills development and it may be argued that the sector is rather special in its potential to be incorporated into global production chains. Nonetheless, it is evident that similar pressures towards upskilling are common in other sectors (e.g., the financial sector) and are leading to strong corporate engagement with the National Skills Development System and its key elements such as learnerships and Investors in People.

The corporate social responsibility investments of BMW SA and DCSA have also had a positive impact on education and training provision. This is most marked in the area of mathematics, science and technology education, another key element of DoE policy, but it also has other manifestations as I detail in this paper.

This positive story on corporate social responsibility could be extended to other sectors in South Africa. In this study I have stressed the importance of TNCs' concerns with legitimacy in such decisions, but such considerations also apply to large South African corporations. Many of these have been very active in supporting educational improvement, whether through their own programmes or through joint programmes such as the Joint Education Trust and the National Business Initiative.

However, the account I develop here about the positive impact of globalisation on education and training in South Africa through the presence of transnational corporations does not undermine the arguments of the existing literature from educationalists about the negative impact that discourses related to globalisation have had on public education in South Africa. Rather, my argument offers a more nuanced and complex picture of the educational impact of globalisation.

I have argued that the sector has had interactions with overall policy attempts to address the interaction between globalisation and human resources development, although it cannot be seen to have been a major driver of policy development, with few exceptions. The policies that have emerged since 1994 for education, skills development and their integration through the National Qualifications Framework and the HRD Strategy do show some concern with the need for global competitiveness, although in a rather general way. Government has consistently led the policy drive, with the automotive sector more in the role of loyal supporter. This is not at all surprising given the recent emergence of democracy in South Africa and the strong legitimacy enjoyed by the state.

There has been a growing attempt to improve policy coherence in South Africa and this is made most apparent in the *Programme of Action* of mid-2004. HRD strategy is increasingly seen as requiring national, provincial and sectoral analysis of economic possibilities and needs. It is clear that the sector will be particularly prominent in government's thinking about future developments in Gauteng and the Eastern Cape. In so far as the interests of the industry are well reflected in industrial

and HRD strategies, it seems likely that the automotive manufacturers will continue to be content to be supporters of policy rather than its drivers.

The South African policy strategies for skills and for industrial development are still relatively young and fragile. Nonetheless, they do appear to point to the scope that a developing country with comparative economic strength and state capacity has for positive interventions to support international competitiveness.

Although South African policies have largely sought to gain the benefits that are perceived as coming from aspects of globalisation, the primary focus of policy remains on reducing poverty. In so far as policy sees a reduction in unemployment as central to this, it can be argued that the impact of globalisation through the automotive sector has been modest. The sector has increased competitiveness through efficiency gains and through government incentives but has not increased employment, although there are predictions of job increases between 2005 and 2007. Where a more obvious, though still modest, positive effect can be seen is in the way that the sector has contributed to asset transfers to rural and township communities through its range of corporate social responsibility activities and through its support of skills development for its African and coloured employees and, more recently, for small numbers of the unemployed.

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