Graduate Unemployment in Post-Apartheid South Africa: Nature and Possible Policy Responses

Research Report Compiled for Standard Bank

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1. Introduction

Within the context of rising unemployment rates in a skills constrained economy, rising graduate unemployment is particularly worrying. While in absolute numbers graduate unemployment is not comparatively large, it remains an important area of study for two reasons. Firstly, as a category, despite the small absolute numbers, relative to the approximately 8 million broadly unemployed – it has been the fastest growing education cohort of unemployed since 1995. Secondly, for an economy faced with severe skills shortages, it is particularly worrying that we are unable to generate sufficient job opportunities for those individuals that apparently have the highest probability of finding employment.

In response to a request from the Deputy President of South Africa, Ms Phumzile Mlambo-Nqcuka, *Business Leadership South Africa* has commissioned the *Development Policy Research Unit* (DPRU) at the University of Cape Town to undertake a rigorous analysis of the problem of graduate unemployment in South Africa.

In attempting to understand the full extent of the challenge, and define an optimal response, the following three-pronged research framework was proposed, as outlined in the Terms of Reference for the project.

1. To undertake a detailed empirical overview of the nature, extent and growth of the graduate unemployment problem.

2. To understand the current graduate absorption programmes offered by large formal sector companies

3. On the basis of the above, to outline a menu of possible policy options that could potentially alleviate this growing labour market problem.

This document contains the full research report. Section 2 provides an empirical overview of the nature, extent and growth of the graduate unemployment problem as outlined in part one of the Terms of Reference. Section 3 is a detailed report on the findings of a series of firm interviews conducted by the DPRU during February and March 2006. Some of South Africa's largest companies, across a range of different sectors, were interviewed in order to get their perspective on issues ranging from schooling and the higher education system, the learnership programme and National Skills Development Strategy (NSDS) and the nature of skills shortages and the skills deficit in South Africa. Section 4 raises general policy issues and proposes a set of detailed short and long run policy options. Section 5 draws some short conclusions. A technical appendix is attached and contains detailed information about the policy environment governing workplace training in South Africa, as well as a detailed set of company-specific interview reports.

2. The Nature, Extent and Growth of the Graduate Unemployment Problem

2.1 Introduction

The South African economy has been experiencing rising unemployment rates during the past decade. At the same time there has been a structural shift in the observed labour demand trends towards increased demand for high skilled workers. This lends weight to the observation that much of the unemployment problem is structural in nature in the sense that the poorly educated workers, who constitute the vast majority of labour supply in the country, cannot find employment due to insufficient demand for workers with low skills. In contrast, there remains a serious shortage of high skilled workers in South Africa[1]. The average shortfall in the public sector alone is about one in three senior managers (Robinson *et al.*, 2005). In a large South African manufacturing firm survey (see Chandra et al., 2001) firms identified a shortage of appropriately skilled personnel as one of the main constraints to increased business activity.

Young South Africans have become better educated over the last decade (Mlatsheni, 2005), partly in response to the adverse labour market conditions for low skilled workers and the high monetary returns to education. Increasing enrolment rates at tertiary educational institutions also contributed to this. However, while the graduate labour force is growing, many graduates with tertiary diplomas and degrees are not being appointed despite the observed structural shifts in labour demand. As we show in this document, the graduate unemployment rate appears to be rising together with the overall unemployment rate. In fact, graduate unemployment has been growing the fastest of all the education cohorts since 1995. Indications are that this is a result of a mismatch between educational outputs and the type of employment opportunities available (Kraak, 2005, Mlatsheni, 2005, Oosthuizen, 2005 and others).

Although small in absolute terms, graduate unemployment is certainly worrying given the severe skills shortage in the economy. High unemployment is often associated with social problems such as poverty, crime, violence, a loss of morale and social degradation (Kingdon and Knight, 2000), while the inability to find employment can create a sense of uselessness and idleness, especially among the youth (ILO, 2004). Mlatsheni (2005) finds that significant percentages of youth are neither working nor studying[2]. This is either due to apathy among the youth or a loss of self-esteem. Either way it is a situation that needs to be addressed. If young people are given the chance to find decent employment when they enter the labour force for the first time, it would help them to avoid the vicious circle of unemployment, poor working conditions, poverty and frustration which can damage the future prospects of whole economies (ILO, 2004).

The graduate unemployment problem has become an important policy concern in recent times. While much research has been done in this area, some of which is drawn upon in this paper, some initiatives that aim to deal directly with the problem are emerging. In December 2005, government launched a database of unemployed graduates (SABC News, 2005). This database, administered by the government's *Umsobomvu Youth Fund*, aims to link unemployed graduates with prospective employers. While this initiative is both necessary and encouraging, it does not necessarily address the

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1 The Department of Home Affairs released a list of 56 occupations where up to 22550 immigrants will have access to the South African labour market in February 2006. However, the relief for unemployed graduates is that the quotas are available to immigrants with at least 5 years relevant experience plus relevant qualifications.

2 Drawing on the Cape Area Panel Study (CAPS) (CSSR and SALDRU, 2002) he finds that 57% of non-studying youth are unemployed.

root cause of the problem. It is arguable that it merely addresses frictional unemployment, i.e. it helps match the 'employable unemployed' with employers. The real challenge is addressing the structural unemployment problem, which requires a longer-term focus on the transformation of the education system as a whole and assisting potential and current labour market participants in acquiring necessary and relevant skills that make them more employable.

This draft report reviews the recent literature on graduate and youth unemployment within the context of the general labour market and educational trends outlined briefly above. In section 2.2 we clarify some definitions and introduce the data sources on which most of the findings are based. Section 2.3 reviews briefly the broad labour market trends of the past decade. This review provides a useful perspective on unemployment in general and graduate unemployment in particular. Section 2.4 explores the incidence of graduate unemployment in more depth and seeks explanations for the trend of rising graduate unemployment. Section 2.5 makes some concluding remarks and highlights areas that require further research.

2.2 Data and Definitions

2.2.1 Data and Methods

This draft is compiled mainly as a literature review of recent South African literature on graduate unemployment. Data are drawn from related research done within the *Development Policy Research Unit*, which is based on various datasets from Statistics South Africa, including the biannual Labour Force Surveys and the October Household Surveys[3]. The aim is to ascertain the extent and nature of graduate unemployment in South Africa. However, due to the nature of the surveys and the relatively small sample of unemployed graduates that they contain, it is sensible to analyse some of the various smaller scale surveys and graduate tracer studies conducted around the country as well. In this regard we draw on research reports and articles by Koen (2003), Cosser *et al*. (2003), Kraak (2005), Moleke (2005) and Mlatsheni (2005), many of which are based on alternative surveys to the Statistics South Africa surveys.

2.2.2 Defining Graduates

The term 'graduate' can be defined in various ways, generally referring to an individual with any type of post-matriculation qualification. A tertiary qualification may therefore include a whole range of different qualifications from a variety of institutions, which introduces significant variations by field of study, entry requirements, length of study, perceived quality of the qualification etc. In some instances we therefore distinguish between non-degree (diplomas or certificates with a matric qualification) and degree (including post-graduate degrees) tertiary qualifications. The reasons for this are, firstly, that the holders of degree and non-degree tertiary qualifications are quite different from each in terms of employment probabilities. Secondly, people with a non-degree tertiary qualification make up over 82 percent of tertiary qualified unemployed individuals. Consequently, it is likely that the analysis and policy recommendations would be most useful if a formal distinction between degree and non-degree qualifications were made.

3 In most instances figures for 1995 are compared to current figures. The 1995 data is from the October Household Survey and referenced as OHS 1995. The 'current' figures are based on various of the Labour Force Surveys (LFS), including March 2002 (LFS 2002:1), September 2003 (LFS 2003:2) and September 2004 (LFS 2004:2).

Also important to note is that the term 'unemployed graduates' is often used to denote recently graduated youths without jobs. In most tables and graphs in this paper, graduates include persons with a tertiary education of any age group between 15 and 65. Youth – defined as those between the ages of 15 and 34 years – constitute the majority (77 percent) of unemployed graduates (see Figure 5)[4].

2.3 General Labour Market Trends in South Africa

2.3.1 Labour Supply, Employment and Unemployment

The high levels of unemployment that persist in South Africa and the various adverse socio-economic effects associated with it have long been identified as one of the major stumbling blocks to accelerated growth and poverty reduction in this country. Shortly after coming into power, the ANC government committed itself to various specific goals, including that of lowering unemployment. Various policy documents came to the fore, most notably the Reconstruction and Development Programme (RDP), which was later replaced by the Growth, Employment and Redistribution programme (GEAR) in 1996 (Department of Finance, 1996).

GEAR envisaged "*sustained growth on a higher plane*" as its main point of departure and the solution to the low rate of job creation. The GEAR policy writers projected that high economic growth rates would create an average of 270,000 jobs per annum between 1996 and 2000, which translates into an average annual increase of 2.7 percent in formal non-agricultural employment (Department of Finance, 1996:7). Although these optimistic predictions never quite materialised the economy performed reasonably well in an unstable international environment. As a result formal employment continued to fall or at best stagnated during the latter half of the 1990s (Pauw and Edwards, 2003)[5].

A turnaround in this trend became visible after 2000, with an estimated 409,000 jobs created in 2000 alone. In an analysis of the period 1995 to 2004, Oosthuizen remarks that "*employment growth … should be seen in a more positive light than is generally the case*" (2005:3). Although employment growth has been slightly lower than economic growth, it exceeded growth in both the population and working age population, suggesting that the country has not experienced jobless growth over the last decade in the strict sense of the word. However, in terms of the economy's ability to absorb a rapidly growing labour force, the picture is not as rosy. The labour force is defined as all people aged 15 to 65 years that are willing and able to work. Entry into the labour market appears to have been stepped up after 1995. The 'narrowly defined' labour force grew by 45 percent from 11.5 million in 1995 to 16.8 million in 2005, while the 'broadly defined' labour force increased by 46 percent from 13.8 million in 1995 to 20.1 million in 2005[6]. As we show later in this paper (section 2.4.1) much of the growth in the labour force is attributed to the large number of young adults entering the labour force.

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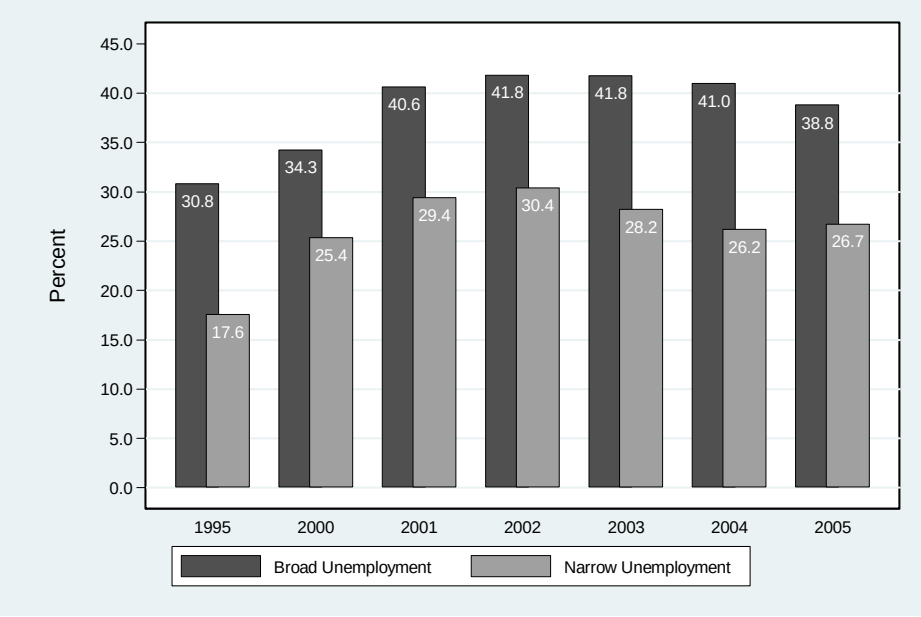
4 In South Africa, the National Youth Commission Act No. 19 of 1996 defines 'youth' as "persons between the ages of 14 and 35" (Republic of South Africa, 1996). As international definitions have 15 years as the lower bound and the age of 34 years is commonly used as an upper bound, the definition of 'youth' used in this report is those individuals aged from 15 years up to and including 34 years.

5 Much controversy exists about the employment growth performance in the latter part of the 1990s. See Pauw and Edwards (2003) and more recently Oosthuizen (2005) for more.

6 Statistics South Africa uses two definitions of unemployment, namely a strict (official) and broad definition. The strictly unemployed are those people within the economically active population who (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. The broad or expanded unemployment definition excludes criterion (c).

Over this period, narrow unemployment levels more than doubled from just over 2 million in 1995 to 4.6 million in 2003, while broad unemployment increased by 97 percent from 4.2 million to 8.3 million. The latter constitutes an average annual increase of 12 percent per annum. The related unemployment rates for these two years are shown in Figure 1. The narrow unemployment rate has increased from 17.6 percent in 1995, peaking at 30.4 percent in 2002. Thereafter, it declined and seems to have stabilised between 26 and 27 percent in 2004/2005. Broad unemployment increased from 30.8 percent to 41.8 percent between 1995 and 2002, and consequently fell to 38.8 percent in 2005. Clearly the growth in employment was not enough to absorb all new entrants into the rapidly growing labour force.

Figure 1: Unemployment Rates, 1995 to 2005



Source: Own calculations, OHS 1995 and LFS 2005(2) (Statistics South Africa).

2.3.2 Structural Change and Labour Demand Patterns

Some important structural shifts have taken place within and between sectors during the last decade. Most apparent has been the shift in output away from primary and secondary sectors towards services or tertiary sectors (Bhorat and Oosthuizen, 2005), a trend often seen in developing economies. This has also brought about a change in the demand patterns for different types of labour due to differences in sectors' skills composition. Most notable has been the increase in demand for skilled labour at the cost of unskilled workers (Burger and Woolard, 2005).

However, changes in the labour demand patterns are not only due to structural changes taking place in the country. South African firms have in the past decade or more been forced to adopt improved production techniques in order to remain competitive in the face of globalisation, trade liberalisation, and more recently, the strengthening of the currency. Such efficiency gains enable producers to produce a unit of output using fewer inputs than before, thus, depending on the demand-side effect of the resulting lower commodity prices, often leading to a decrease in demand for factors of production (Pauw *et al.*, 2004). Such gains have been especially prevalent in the primary sectors agriculture and mining, both of which employ a large share of low-skilled workers. This has resulted in a decline in

employment in these industries (Burger and Woolard, 2005, Vink, 2000)[7]. The technical change experienced has been mostly capital deepening in nature, i.e. capital-labour ratios have been declining as South African production processes have become more capital intensive. Bhorat and Oosthuizen suggest that, in general, such technical change is "*viewed in a relatively negative light due to* [its] *dampening on the employment-increasing effect of output expansion*" (2005:12). Intuitively speaking, however, one would expect greater capital intensity to "*lower the demand for unskilled and low-skilled labour that is being replaced by the new capital equipment, but increase the demand for more skilled labour who are required to operate and maintain the new capital equipment*" (Bhorat and Hodge, 1999:352)[8].

Alternative studies in the past have focused more directly on the effects of trade liberalisation on the structure of employment. Bell and Cattaneo (1997) find that "*trade flows have shifted production away from Black intensive sectors towards White intensive (or skill intensive) sectors*" (as cited in Edwards, 2001a). A more recent study by Dunne and Edwards (2005) finds that tariffs fell relatively sharply in labour intensive sectors, particularly those with high shares of unskilled workers, and as a result the direct employment effect of liberalisation has been biased against semi- and unskilled workers. Their analysis further shows that in addition to the negative impact in labour intensive sectors, metal products sectors also experienced a decline in labour demand, while the capital-intensive resource-based and chemical products sectors experienced positive employment effects.

Factor costs have also undoubtedly had an important impact on the structure and levels of employment in South Africa. The capital intensification of the economy referred to earlier was partly due to the reduction of the cost of capital relative to other factors of production through subsidisation of capital intensive industries (tax breaks and preferential interest rates) (Pauw and Edwards, 2003). According to Edwards (2001b), financial support for certain capital-intensive industries, such as chemicals and iron and steel, continued during the 1990s. Real wage increases have further put pressure on employment levels. Although comparisons over long periods are slightly problematic, Lewis (2001) estimates that the real wage of semi- and unskilled workers increased by 150 percent between 1970 and 1999. Those of highly skilled workers declined while real wages of skilled workers rose by approximately 10 percent over the same period. This was accompanied by a much more rapid increase in unemployment among low-skilled individuals (Pauw and Edwards, 2003). Burger and Woolard (2005) go as far as suggesting that wage levels for some low-skilled workers are actually above their market clearing levels, which make them relatively less attractive than skilled workers. At the same time, some argue that the post-1994 period has seen increases in non-wage costs of employment with negative consequences for employment, particularly amongst the less skilled (see for example Burger and Woolard, 2005, and Chandra *et al.*, 2001).

It is impossible to disentangle the relative importance of economic development, technical progress, trade liberalisation, and increases in real wage and non-wage costs of labour in altering the labour demand patterns in South Africa. However, all these effects have probably contributed to the economy's skills-biased labour demand trajectory. Figure 2 clearly illustrates how output growth continues to be skills-biased by comparing the employment composition in various sectors between

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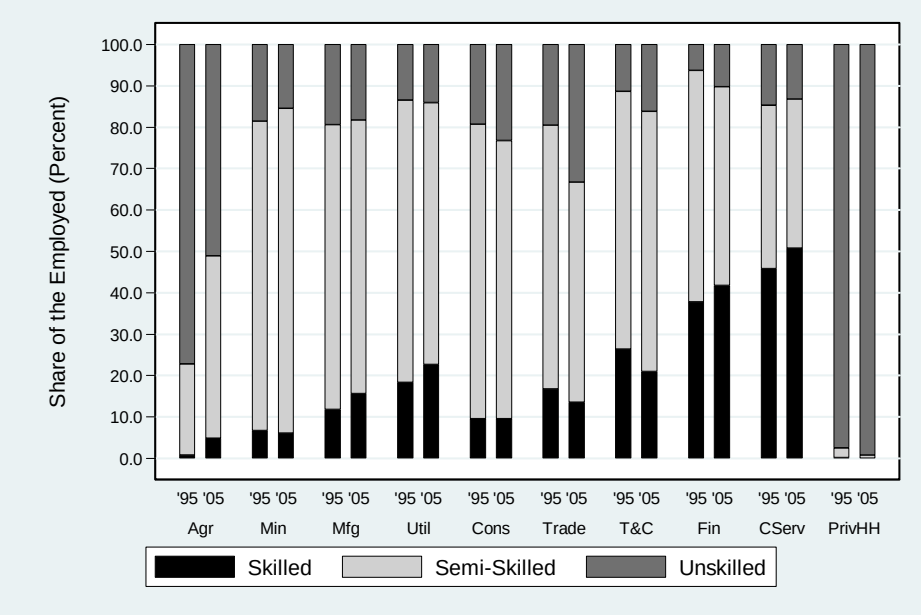
7 Research by Hartzenberg and Stuart (2002) revealed that total factor productivity (TFP) growth for the South African economy as a whole was negative between 1960 and 1975 (-1.0%) and remained unchanged between 1976 and 1989 (0.0%). However, TFP growth recovered during the 1990s (0.8%). The agricultural industry was one of only a few sectors that experienced positive TFP growth over all the time periods.

8 These authors further decompose the changing labour demand patterns in order to gauge the relative importance of technical change versus structural change in the overall employment change and find that although both had been important the former had a greater impact in terms of the demands for different types of labour (skilled versus unskilled and low-skilled).

1995 and 2005. For the economy as a whole, there appears to have been a definite shift away from low skilled employment towards employment of higher skilled individuals. In 1995, skilled workers accounted for 19.8 percent of employment, compared to the 47.9 percent share for semi-skilled workers and the 31.1 percent share for unskilled workers. By 2005, the share in total employment of skilled workers had risen by almost two percentage points to 21.5 percent, while that of semi-skilled workers had risen to 48.5 percent. Conversely, unskilled employment as a share of total employment contracted to 29.8 percent in 2005. While a detailed discussion of this figure is excluded here (see Bhorat and Oosthuizen, 2005 for more), the figure clearly illustrates skills-biased employment growth in numerous sectors, including Agriculture, Hunting, Forestry and Fishing, Manufacturing, Utilities and Community Services. Interestingly, unskilled workers have increased their share of employment in the Internal Trade and Transport and Communications sectors.

Figure 2: Skills Distribution of Employment by Sector, 1995 and 2005



Source: Own calculations, OHS 1995 and LFS 2005(2) (Statistics South Africa).

Note:

1. Skilled refers to ISOC codes 1 and 2; Semi-Skilled refers to ISOC codes 3-8 and Unskilled refers to ISOC code 9, excluding code 9999.
2. Agr = Agriculture, Hunting, Forestry and Fishing; Min = Mining & Quarrying; Mfg = Manufacturing; Util = Utilities; Cons = Construction; Trade = Wholesale and Retail Trade; T&C = Transport & Communication; Fin = Finance, Real Estate & Business Services; CServ = Community Services; PrivHH = Private Households; Unspecified categories excluded.
3. For 1995 and 2002, elementary occupations includes domestic workers.
4. Private households in 2002 and domestic services in 1995 were treated as synonymous.

2.4 Graduate Unemployment

Education is often used as a proxy for the skills level of a labour force participant. Given the skill-biased labour demand and the skills shortage in the economy, the expectation is that unemployment among labour market participants with a tertiary qualification should be declining. However, as suggested earlier (and shown below) this has not been the case. In this section the phenomenon of rising graduate unemployment is analysed in more depth.

2.4.1 Age and Education Profiles of the Labour Force

The South African labour force (broadly defined) grew by about 46 percent from 13.8 million in 1995 to 20.1 million in 2005. Table 1 compares the composition of the labour force for the years 1995 and 2005. The age profile of the labour force has not changed dramatically over the period, although it does appear as if the labour force is becoming younger, with labour market participants between the ages of 15 and 34 (defined as youth) accounting for more than 60 percent of the growth in the labour force, despite accounting for less than 54 percent of the labour force in 1995. The labour force also appears to have become better educated over the period. The share of the labour force who have not completed the compulsory minimum of Grade Nine has decreased over the period, while almost two-thirds (66.3 percent) of the growth in the labour force is accounted for by participants who have completed Grades 10, 11 or 12.

Table 1: Characteristics of the Broad South African Labour Force, 1995 and 2005

		1995		*2005*		*Change*	
		'000s	*Share (Percent)*	*'000s*	*Share (Percent)*	*'000s*	*Share in Change (Percent)*
Age Group	15-24 years	2 403	17.5	4 069	20.2	1 666	26.3
	25-34 years	4 977	36.2	7 171	35.7	2 193	34.6
	35-44 years	3 670	26.7	4 547	22.6	878	13.8
	45-54 years	1 941	14.1	3 022	15.0	1 081	17.0
	55-65 years	762	5.5	1 291	6.4	529	8.3
	Total	***13 754***	100.0	***20 100***	100.0	***6 347***	100.0
Education Level	No education	1 182	8.6	1 054	5.2	-127	-2.0
	Grades 0 through 9	5 705	41.5	7 252	36.1	1 547	24.4
	Grades 10 through 11	2 326	16.9	4 021	20.0	1 694	26.7
	Grade 12 / Matric	2 873	20.9	5 385	26.8	2 512	39.6
	Tertiary	1 430	10.4	2 066	10.3	636	10.0
	Other/Unknown	237	1.7	321	1.6	84	1.3
	Total	***13 754***	100.0	***20 100***	100.0	***6 347***	100.0

Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

Table 2 turns to the employed and compares the composition of employment for the years 1995 and 2005. The overall employment level increased by 29 percent from 9.5 million in 1995 to 12.3 million in 2005. The employed population appears to have become slightly older over the period. Almost 45 percent of the change in employment accrued to the older age groups (45 to 65 years), far in excess of this group's share of employment in 1995 of 23.6 percent. As a consequence, all the age groups between 15 and 44 years saw their shares of employment decline over the decade. Job creation also seems to have benefited those with secondary or tertiary education the most, with almost two-thirds (64.0 percent) of the change in employment accruing to these groups. This is consistent with the evidence presented earlier of skills-biased structural and technical change in the South African economy.

Table 2: Characteristics of the Employed, 1995 and 2005

		1995		*2005*		*Change*	
		'000s	*Share (Percent)*	*'000s*	*Share (Percent)*	*'000s*	*Share in Change (Percent)*
Age Group	15-24 years	1 126	11.8	1 416	11.5	290	10.4
	25-34 years	3 281	34.5	4 153	33.8	872	31.3
	35-44 years	2 863	30.1	3 253	26.4	390	14.0
	45-54 years	1 590	16.7	2 376	19.3	786	28.2
	55-65 years	656	6.9	1 103	9.0	447	16.1
	Total	***9 515***	100.0	***12 301***	100.0	***2 786***	100.0
Education Level	No education	772	8.1	691	5.6	-81	-2.9
	Grades 0 through 9	3 605	37.9	4 063	33.0	458	16.4
	Grades 10 through 11	1 523	16.0	2 071	16.8	548	19.7
	Grade 12 / Matric	2 097	22.0	3 351	27.2	1 254	45.0
	Tertiary	1 336	14.0	1 865	15.2	529	19.0
	Other/Unknown	182	1.9	259	2.1	78	2.8
	Total	***9 515***	100.0	***12 301***	100.0	***2 786***	100.0

Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

The numbers and composition of the unemployed (broadly defined) are shown in Table 3. The unemployed are simply those labour market participants (Table 1) who are not employed (Table 2), i.e. Table 3 is the difference between these two tables. The related unemployment rates are shown in Figure 3 (also broad definition). As far as the age composition of the unemployed is concerned, the combination of more young adults entering the labour force and more middle-aged people getting the jobs have caused the unemployed to become younger. Young adults under the age of 35 years account for more than three-quarters (75.7 percent) of the change in unemployment. As shown in Figure 3, these young adults still experience the highest unemployment rate of all age cohorts in 2005, while the (absolute) change in their unemployment rate has also been the highest of all the age groups.

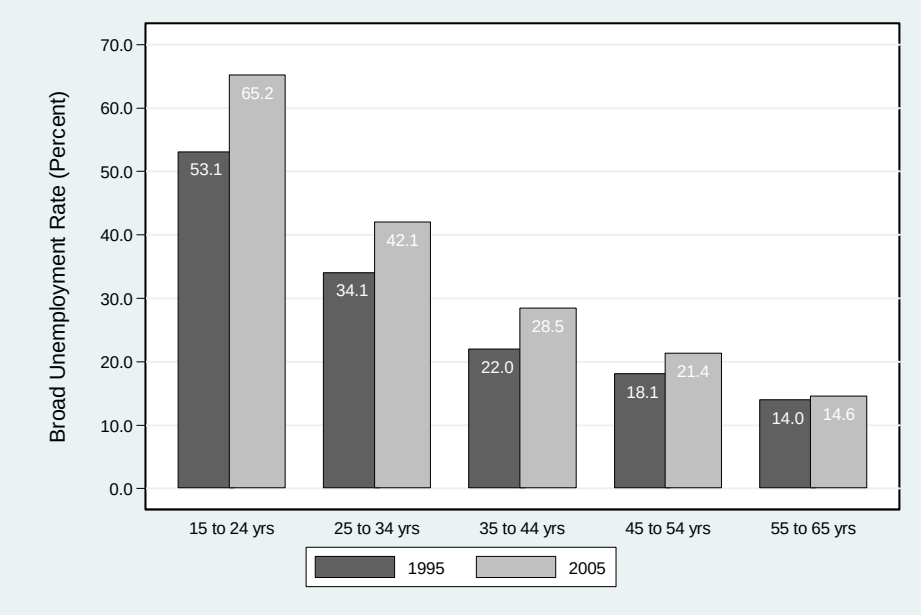
Table 3: Characteristics of the Broadly Unemployed, 1995 and 2005

		1995		*2005*		*Change*	
		'000s	*Share (Percent)*	*'000s*	*Share (Percent)*	*'000s*	*Share in Change (Percent)*
Age Group	15-24 years	1 277	30.1	2 653	34.0	1 376	38.6
	25-34 years	1 696	40.0	3 018	38.7	1 321	37.1
	35-44 years	807	19.0	1 295	16.6	488	13.7
	45-54 years	351	8.3	646	8.3	295	8.3
	55-65 years	107	2.5	188	2.4	81	2.3
	Total	*4 239*	*100.0*	*7 800*	*100.0*	*3 561*	*100.0*
Education Level	No education	410	9.7	364	4.7	-46	-1.3
	Grades 0 through 9	2 100	49.5	3 189	40.9	1 090	30.6
	Grades 10 through 11	803	18.9	1 949	25.0	1 146	32.2
	Grade 12 / Matric	777	18.3	2 034	26.1	1 258	35.3
	Tertiary	94	2.2	201	2.6	107	3.0
	Other/Unknown	55	1.3	62	0.8	7	0.2
	Total	*4 239*	*100.0*	*7 800*	*100.0*	*3 561*	*100.0*

Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

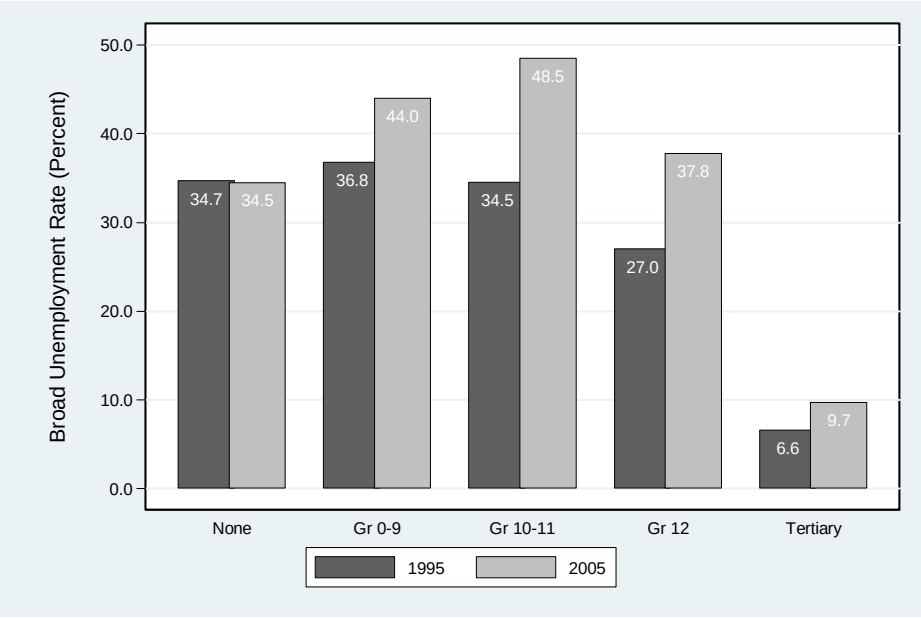
Perhaps more worrying is the trend of rapidly rising unemployment rates among labour force participants with secondary and tertiary qualifications. Table 3 shows that individuals with Grade 10, 11 or 12 qualifications account for almost two-thirds (67.5 percent) of the change in unemployment between 1995 and 2005. Although tertiary unemployment only accounts for 3.0 percent of the change in overall unemployment in this period, the actual unemployment rate (Figure 4) for this education group has increased by half from 6.6 percent to 9.7 percent, which represents the largest relative change for all education groups.

Figure 3: Broad Unemployment Rates by Age, 1995 and 2005



Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

Figure 4: Broad Unemployment Rates by Level of Education, 1995 and 2005



Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

Note: 1. The fact that unemployment rates are generally higher for those with some education (e.g. incomplete or complete primary and secondary) as opposed to those with no education may appear strange. This, however, has to do with the fact that those with no education are less likely to participate in the labour market since they have a very low probability of finding employment in any event. Many working-age people with no education are therefore not included in the calculation of the unemployment rate.

2.4.2 Graduate and Youth Unemployment: A Multivariate Analysis

Graduate unemployment remains small in relative terms, with only 2.6 percent of the unemployed in 2005 (see Table 3) reported as having a tertiary qualification. However, the fact that the unemployment rate among graduates has been rising in a skills-constrained economy is a surprising result. This does not suggest, however, that having a tertiary qualification is not good. Using a *probit* model of labour market participants' employment status and following the Heckman two-step approach, Oosthuizen (2005) estimates labour market participants' probabilities of being employed and finds that the higher a participant's education level, the higher his or her probability of finding employment. Variables for various age groups, racial groups, gender and province and splines for educational attainment were included in the model as independent, explanatory variables[9]. The model also distinguishes between degree and non-degree tertiary qualifications (see section 2.2.2). Table 4 shows the estimated coefficients for the age and education variables. The discussion below briefly considers the implications of the coefficients of these selected variables.

In 1995, participants aged 15 to 24 years (the referent group) were least likely to find employment relative to their older counterparts. All the age group coefficients are positive and statistically significant, except the coefficient for 55 to 65 year olds, which is insignificant. The 35 to 44 year age group was 21 percent more likely to be employed than their 15 to 24 year old counterparts. Interestingly, this general situation had changed somewhat by 2004. Firstly, the coefficient for 24 to 35 year olds is no longer statistically significant, meaning that 24 to 35 year olds were, ceteris paribus, no more or less likely to find employment than their younger counterparts. Further, the coefficients of the

9 The referent variables were Age: 15 – 24, Race: African, Gender: Male and Province: Eastern Cape.

34 to 44 year age group declined significantly over the period. In 2004, 35 to 44 year olds were only 2.5 percent more likely than 15 to 24 year olds to be employed (down from 21 percent). In contrast, the coefficient for 45 to 54 year olds indicates that they were 16.5 percent more likely than 15 to 24 year olds to be employed (up marginally from 15.0 percent). Interestingly, the positive and significant coefficient for 55 to 65 year olds indicated that these individuals were 11.8 percent more likely than 15 to 24 year olds to be employed.

Table 4: Employment Equations (Broad Definition of Unemployment), 1995 and 2004

	1995		***2004***	
	Marginal Effects	***x-bar***	***Marginal Effects***	***x-bar***
25-34 years	0.1623 **	0.2370	0.0239	0.2696
35-44 years	0.2143 **	0.1909	0.1288 **	0.1776
45-54 years	0.1496 **	0.1204	0.1651 **	0.1314
55-65 years	0.0000	0.1042	0.1177 **	0.0972
No education to Grade 6	-0.0119 **	5.1514	-0.0253 **	5.3573
Grade 7	-0.0491 **	0.7404	-0.0189 *	0.7756
Grade 8 to Grade 11	-0.0209 **	2.0347	-0.0195 **	2.1952
Grade 12	0.1253 **	0.2580	0.0763 **	0.2945
Diploma	0.1344 **	0.0827	0.2398 **	0.0750
Degree	-0.0118	0.0533	0.0007	0.0822
Observed Probability	0.4745		0.3959	
Predicted Probability (at x-bar)	0.4481		0.3618	
Number of Observations	64627		67946	
Chi^2	28132.2		19466.91	
Pseudo R^2	0.3146		0.2134	

Source: See Oosthuizen (2005) for the full results of the participation model and employment model. Results generated using OHS 1995 and LFS 2004:2 (Statistics South Africa)

Note: 1. Only selected age and education coefficients shown in this table.

* Significant at the five percent level.

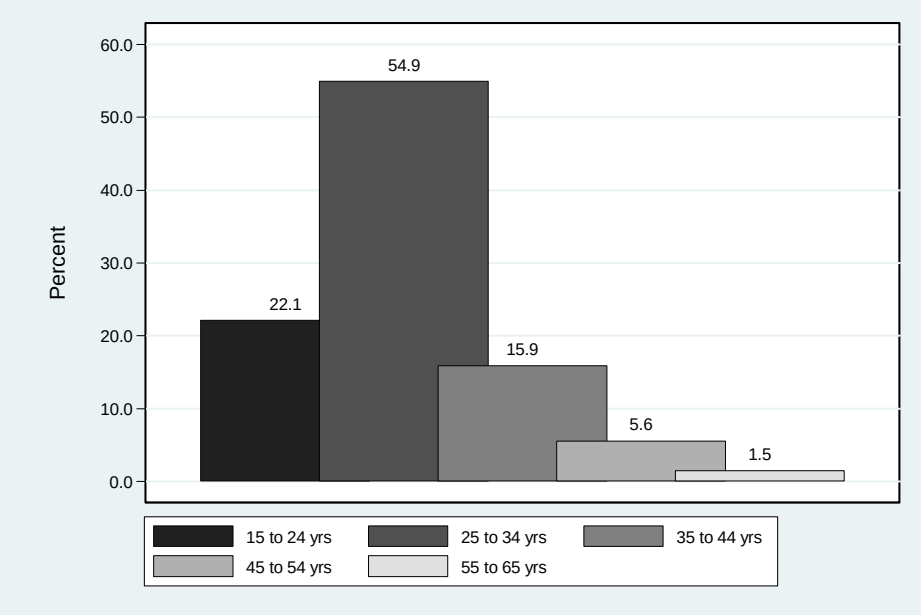
** Significant at the one percent level.

The education variables (technically referred to as splines) indicate that levels of education below Grade 12 are associated with lower likelihoods of finding employment. This is observed in both periods. The rapid increase in unemployment amongst holders of grade twelve certificates is reflected here in the weakening of the positive coefficient of the grade twelve variable. In 1995, the coefficient was 0.1253, but this declined to 0.0763 in 2004. In contrast, the value of tertiary education (diploma) in helping individuals find employment appears to have strengthened, with a substantial increase of the coefficient from 0.1344 in 1995 to 0.2398 in 2004. Interesting, though, is the insignificance of the coefficients of Degree in both years. This suggests that nothing can be concluded about the difference in the probability of employment of persons with degrees versus persons with diplomas. This probably points to the fact that the sample size of people with degrees as a sub-sample of tertiary educated persons is very small. In the analysis further below, the differences between the employment statuses of degree and non-degree labour market participants will become clearer. Nevertheless, as mentioned, having a diploma has a significant positive impact on the probability of employment relative to having a Grade 12 certificate. The current skills shortage is also detected in the increased effect of tertiary education within the employment equation.

Some broad conclusions can be drawn from the preceding paragraphs as well as section 2.4.1. The youth, who are becoming better educated, account for most of the growth in unemployment. Ten years ago, a Grade 12 qualification raised a participant's probability of finding employment well above that of someone without it, but this has dropped significantly, suggesting that the stakes have been raised and a post-matriculation degree or diploma has become much more important in determining an

individual's employment status. Figure 5 shows the age composition of the unemployed with a tertiary qualification in 2005. That about 77 percent of graduate unemployed are youth suggests they are recent graduates. Unemployment among educated youth is potentially damaging for the economy as it can lead to frustration and disillusionment among young people, while extended periods of unemployment may result in the erosion and outdating of young people's skills base.

Figure 5: Age Composition of Unemployed Graduates, 2005



Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

2.4.3 Explaining Graduate Unemployment

Various explanations for the graduate unemployment problem have been sought. In this section, we aim to regard the problem more closely by focusing specifically on some of the issues that have been raised in research by the *Development Policy Research Unit*, Mlatsheni (2005), Kraak (2005) and Koen (2003). We also report on some of the findings of two graduate tracer studies by the Human Sciences Research Council (HSRC). The one is a technical college tracer study (see Cosser *et al.*, 2003), which tracks the employment experiences of 3 503 graduates from technical colleges as they enter the labour market after graduation. Another study tracked the employment experiences of 2 672 university graduates between 1990 and 1998 (see Moleke, 2005).

a. Types of Qualification Obtained and Field of Study

One argument that is frequently offered as an explanation for graduate unemployment is the notion of a mismatch that exists between the types of skills required by employers and those offered by graduates. This may relate to either the field of study or the quality of the institution at which the qualification was obtained. The focus here is on the actual field of study, while a comparison between degree and non-degree qualifications is also made.

Table 5 shows that the majority of the unemployed with a tertiary qualification has a diploma or a certificate coupled with a Grade 12 (matric) qualification. This category's share in total tertiary

unemployment has increased from 80.9 percent in 1995 to 82.0 percent in 2005. Africans with a diploma or certificate accounted for close to three-quarters (73.2 percent) of total tertiary unemployment in 2005, up from 63 percent in 1995. In total, tertiary educated Africans accounted for 84.9 percent of the tertiary unemployed in 2005. This rise in the African graduate unemployment share is partly explained by a massive increase in the enrolment of African students at tertiary institutions (see Koen, 2003)[10]. Also, the fact that African students studying at what Moleke (2005:5) classifies as historically black universities (HBUs) have "*disproportionate numbers of students graduating in fields with lower employment prospects*" also contributes to this. These issues are explored further below.

Table 5: Breakdown of Tertiary Unemployment by Race and Type, 1995 and 2005

		Percent of Total				
		African	***Coloured***	***Asian***	***White***	***Total***
Diploma/Certificate with Matric	1995	63.0	5.3	3.4	9.2	80.9
	2005	73.2	1.7	1.2	6.0	82.0
Degree	1995	10.1	2.3	0.3	6.4	19.1
	2005	11.7	0.0	0.9	4.6	18.0
Total	*1995*	*73.1*	*7.6*	*3.7*	*15.6*	*100.0*
	2005	*84.9*	*1.7*	*2.0*	*10.5*	*100.0*

Source: Own calculations, OHS 1995, LFS 2005(2) (Statistics South Africa).

Notes: 1. In the OHS 1995 there is only a category for "degree", while the September 2005 LFS distinguishes between various levels of degrees. These categories from the September 2005 LFS were combined to allow comparison with 1995 figures.

Table 6 presents the breakdown of tertiary unemployment by field of study from 2000 to 2005. Individuals with a qualification in the field of business, commerce and management studies accounted for between 26 percent and 31 percent of total tertiary unemployment over the six years. However, these figures have to be seen in the right context. Commerce students typically make up a very large proportion of tertiary institutions. This is even true for technical institutions, where enrolments have been increasing (Koen, 2003). Hence it is not surprising to see that they also represent a large share of the unemployed. As far as university graduates are concerned, Moleke (2005) notes that almost two-thirds of economic and management studies (EMS) students found work immediately after completing their studies, which compares favourably to the average of 60 percent across all study areas. She further finds that EMS university graduates represent only 10 percent of unemployed graduates[11]. This suggests that the bulk of graduate unemployment among commerce students is among non-university students (see Table 7 further below).

10 Africans made up four percent and 19 percent of all technikon students in 1985 and 1990 respectively. This rose to 73 percent in 2000 (FRD, 1993 and SAIRD, 2001, as cited in Koen, 2003).

11 It needs to be stressed that this result is based on a rather small sample size, and only includes university graduates.

Table 6: Breakdown of Tertiary Unemployment by Field of Study, 2000-2005

Field of Study	*Share (Percent)*					
	2000	*2001*	*2002*	*2003*	*2004*	*2005*
Business, Commerce and Management Studies	30.5	26.9	28.2	27.6	28.2	28.1
Education, Training and Development	25.6	26.5	23.2	19.0	21.1	14.1
Physical, Mathematical, Computer & Life Sciences	11.3	15.1	10.5	14.4	9.8	16.5
Manufacturing, Engineering and Technology	8.6	9.2	12.4	13.7	10.8	11.6
Health Sciences and Social Services	5.8	3.4	5.7	5.5	8.3	9.7
Human and Social Studies	2.7	3.8	6.8	4.4	4.9	4.9
Other/Unspecified	15.5	15.1	13.1	15.4	16.9	15.2
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: Own calculations, LFS 2000(2), LFS 2001(2), LFS 2002(2), LFS 2003(2), LFS 2004(2), LFS 2005(2) (Statistics South Africa).

Table 6 further shows that individuals with a qualification in education, training and development constituted the second largest category with their share generally varying between 19 percent and 27 percent over the period, although its share did fall to 14.1 percent in 2005. Individuals with a qualification in physical, mathematical, computer and life sciences or manufacturing, engineering and technology also accounted for a sizeable share in tertiary unemployment, although these students probably make up over 80 percent of technical college enrolments (see Cosser *et al.*, 2003). This is, however, still surprising given the "*huge demand … for information technologists, health professionals, managers, engineers, accountants and auditors*" identified by Koen (2003:17), which perhaps points at issues surrounding the quality of these qualifications.

Without downplaying the problem of unemployment among labour market participants with degrees, it is clear from Table 5 that most of the increase in tertiary unemployment is explained by unemployment among people with diplomas or certificates. This may be related to problems in the Further Education and Training (FET) system, with some service providers presenting inappropriate courses that are not valued by potential employers. In this regard, Mlathseni (2005) notes that many of the FET colleges are under-resourced and not situated where they are needed most and they have a poor image with employers given the employment record of graduates from these colleges.

Table 7 provides a breakdown of tertiary unemployment in 2005 by field of study and type of qualification. Individuals with a diploma or certificate in business, commerce and management studies were the largest contributing category, accounting for 24.9 percent of tertiary unemployment. They are followed by individuals with a diploma/certificate in physical, mathematical, computer and life sciences, with a 12.9 percent share. Individuals with either a diploma/certificate in manufacturing, engineering and technology or education, training and development accounted for 10.8 percent and 9.9 percent respectively of total tertiary unemployment.

While labour demand for students with qualifications in social sciences and humanities are "*less acute*" (Koen, 2003:17) enrolments in these fields of study remain high. Moleke (2005) found that university graduates with qualifications in fields with a more professional focus, such as medical sciences and engineering, found employment faster than graduates with a more general degree. In the more general study fields, such as humanities and arts, which do not "*directly prepare graduates for a profession*", graduates took longer to find a job than graduates in economic and management sciences and natural sciences (Moleke, 2005:40). In 2000 the government's *National Plan for Higher Education* has set the target of a 30:30:40 split in enrolment between science/engineering, technology/business/commerce and humanities/social sciences to be reached within a five to ten year period in order to meet the labour market needs more effectively (Kraak, 2005). This ratio was 26:24:50 for technikons and universities combined, with technikons at 35:31:34 and universities at 21:20:58.

Table 7: Breakdown of Tertiary Unemployment by Type and Field of Study, 2005

Field of Study	*Diploma/ Certificate*	*Degree*	*Total*
Business, Commerce and Management Studies	24.9	3.1	28.1
Physical, Mathematical, Computer and Life Sciences	12.9	3.6	16.5
Education, Training and Development	9.9	4.1	14.1
Manufacturing, Engineering and Technology	10.8	0.8	11.6
Health Sciences and Social Services	8.8	0.9	9.7
Human and Social Studies	4.4	0.5	4.9
Law, Military Science and Security	2.4	1.9	4.3
Communication Studies and Language	3.4	0.4	3.8
Agriculture and Nature Conservation	1.2	2.2	3.4
Other/Unspecified	3.2	0.4	3.7
Total	*82.0*	*18.0*	*100.0*

Source: Own calculations, LFS 2005(2) (Statistics South Africa).

This raises questions about how students make decisions about what to study, and whether they receive any assistance or guidance in making such decisions. One reason offered by Moleke is that students find these general fields of study with their less stringent entry requirements more accessible, while at times their decisions are "*purely arbitrary*" (2005:41). Cosser *et al*. (2003:34) find that over 60 percent of the respondents in the technical colleges survey gave as the reason for their choice of field of study that they were "*interested in it*" and only 23 percent chose their field of study because they thought it would secure employment. This may point to deficiencies in career guidance both in schools and technical colleges – roughly half of the respondents indicated that they did in fact receive guidance before enrolling, while 60 percent received guidance during their enrolment.

As far as job search is concerned, Cosser *et al*. found that 71 percent of graduates did not receive any assistance from their colleges to find employment. The general lack of adequate preparation for the labour market may be a contributing factor to the high unemployment rate amongst technical college graduates. Where graduates did receive assistance, the majority received assistance in the form of the college arranging for employers to interview students at the college (2003:46).

b. Continued Discrimination

Inter-racial variation in unemployment rates may be as a result of continued discrimination favouring Whites in particular and to a lesser extent, Asian and Coloureds. Moleke (2005) suggests that there are signs that African graduates are still disadvantaged in the labour market. Although Africans are more likely to choose study areas with lower employment prospects, evidence suggests that there are also differences between races within particular study areas. Table 8 shows the percentages of university graduates that find immediate employment[12]. Only in engineering did more Africans find employment immediately than all other racial groups. Very low proportions of Africans with humanities and arts, education and law degrees find employment immediately, which points to the oversupply and over-enrolment of African students in these fields of study. During the firm surveys (see section 3) the fact that too many graduates graduate with inappropriate qualifications was frequently raised as one of the major problems faced by recruiters. On average, a much greater proportion of Whites found employment immediately than all the other racial groups.

12 These results are based on a survey of 2 672 respondents who obtained their qualifications from South African universities between 1990 and 1998. The sample was drawn from a database, the Register of Graduates, held by the Human Sciences Research Council (HSRC), which contains the details of all graduates of South African universities.

Table 8: Percentage of University Graduates Employed Immediately, by Race

Field of study	*Asian*	*African*	*Coloured*	*White*
Natural sciences	30.0	45.9	52.2	59.9
Engineering	50.0	88.9	50.0	78.3
Agriculture		53.3	83.3	64.3
Medical sciences	46.0	65.7	32.5	91.2
Humanities and arts	53.6	38.7	33.3	56.4
Education	71.4	48.3	28.6	75.0
Law	36.4	26.8	51.6	69.6
Economic and management studies	53.5	37.5	42.2	74.8
Total	*47.6*	*43.0*	*42.2*	*70.4*

Source: Moleke (2005).

As far as enrolment rates are concerned the majority of students at technical colleges are male (approximately 56%, according to Cosser *et al.*, 2003). Although these authors find no evidence that the throughput rates are higher for males, they are concerned about the fact that technical education "is seen as a male preserve" while "job placement and enrolment patterns are a cause for concern" (Cosser *et al.*, 2003:55). As far as universities are concerned there were small differences between male and female graduates, with a slightly smaller proportion of males finding employment immediately after graduation (Moleke, 2005).

c. Quality of Tertiary Institutions

While the findings in section 2.4.3b are disturbing it may be linked directly to actual or perceived differences in the quality of the institution attended. It is difficult to determine, given evidence at this stage, whether the graduate unemployment problem is closer linked to the notion of a mismatch between skills supplied and skills demand, or whether it is more likely a problem of the quality of the education given the severe skills shortage in the country. In this regard, findings regarding the employment prospects of graduates from historically white universities (HWUs) and historically black universities (HBUs) are particularly interesting (see Moleke, 2005:4-5): students from HWUs are found to have much better employment prospects than those at HBUs. This is partly explained by employers' perception about the quality of the institutions. However, it is also important to note that HBUs enrol disproportionate numbers of students in fields of study with poor employment prospects (see Table 8). Unfortunately, anecdotal evidence suggests that employers are biased against employing graduates from specific institutions, and perhaps quality of education at certain institutions needs to be investigated.

d. Quality of Primary and Secondary School Education

While the quality of the tertiary institutions is certainly one part of the problem, poor student performance can often be traced back to quality issues in primary and secondary schooling in South Africa. Mlatsheni (2005) cites poor performance of primary school pupils in tests of language ability[13] and the declining numbers of matric candidates who pass with exemption, which enables university entrance, as particularly worrying. He also cites a survey (South Africa Survey 2003/2004) in which it is suggested that 82 percent of students who are accepted into tertiary institutions in South Africa are functionally illiterate (i.e. a literacy level of grade eight or below). Furthermore, 60 percent of students fail to cope with the level of mathematics and science offered at university. Kraak suggests that poor throughput statistics at universities and technikons in South Africa "*are yet another indication of the weaknesses of school education which should provide a more adequate preparation for entry and*

13 According to "*language experts*", language ability of an average 7-year old pupil from disadvantaged backgrounds in South Africa is equivalent to that of a 3- to 4-year old (Mlatsheni, 2005:2).

success in further higher learning", while the "*perceived poor quality of South African schooling (particularly in the former African school system) serves as a major disincentive on the demand-side for employing large numbers of first-time entrants to the labour market*" (2005:22, 31).

Most tertiary institutions in South Africa use English as the medium of instruction. Cosser *et al*. (2003) find that almost 95 percent of students are taught in English, yet only ten per cent speak English at home. Although most students arguably want to study in English, given that English is the *lingua franca* of the business world, the high degree of functional illiteracy perhaps explains poor academic performance and hence the poor quality of an individual's education. The solution to this is to improve the competencies of secondary school students with regards to English and mathematics/science. This was also a point that came out strongly during the firm interviews (see section 3)

e. Other Issues

Some other issues that need to be explored further are the following:

- *Increasing enrolment and throughput rates*: There is evidence that South African tertiary institutions are enrolling more students than in the past. This probably has to do with a combination of factors, including entrance requirements at universities and other tertiary institutions being lowered to allow greater accessibility, while many formerly disadvantaged individuals can more readily access study loans and bursaries than in the past. Many students struggle to cope with the academic workload at these institutions given poor preparation at secondary schools, leading to high failure rates. According to the HSRC (2006) in 2000, a total of 120 000 students enrolled in the country's public higher education institutions. At the end of that year 36 000 (or 30 percent) had dropped out. Another 24 000 dropped out between their second and third years. Furthermore, less than half of the remaining 50 percent graduated within the years' duration and the vast majority were black students[14]. Institutions may even find themselves under pressure, whether knowingly or not, to lower standards and maintain throughput rates in order to ensure that the system does not clog up.

- *Work experience*: Although difficult to test, one hypothesis is that these results can also be explained by the fact that work experience is becoming very important. As Mlatsheni (2005:1) writes, work experience is an "important factor that influences employability at all levels". Employers are also perhaps risk averse and prefer to employ older, more experienced workers who do not require as large an investment in training given the threat of headhunting in a scarce skills economy. Kraak (2005) also finds that South African youth face poor chances of receiving pre-employment training, which makes young people less attractive to employers.

14 Financially this amounts to a loss of about R.4.5 billion in subsidies allocated to the higher education institutions. The HSRC is to under take a research project on the underlying reasons for the high drop-out rates among black students (HSRC, 2006).

2.5 Concluding Remarks

While the graduate unemployment problem in itself is not substantial in relative terms, it is a concern as it goes against expectations and points at serious problems in the South African education system. Unemployment can be structural or frictional, where the latter is rather easily addressed by improving information through measures such as the Unemployed Graduate Placement Initiative, a database set to link unemployed graduates with possible employers. However, unemployment in South Africa is mainly structural in nature, where the majority of the unemployed are low skilled or poorly educated workers for which demand has been shrinking due to changes in the domestic structure of production. The solution to this part of the unemployment problem is better training and education – an area that clearly receives a lot of attention in this country.

Tertiary unemployment can also be regarded as a structural problem. As enrolment at tertiary institutions has increased during the last decade, especially among black students, more young graduates have become unemployed. This implies that the shift towards greater demand for skilled labour has either been insufficient to absorb new graduate labour market entrants, or that these graduates are not suitably qualified for the jobs that are available. Given the prevailing skills shortage in the economy, the latter is more likely to be the case – graduates do not posses the right qualifications and often these qualifications are not of a standard or quality that is required by employers.

With graduate unemployment high on the policy agenda, particularly given South Africa's skills shortage, it is clear that macroeconomic policy alone can not sufficiently increase the absorption of graduates into the labour market. Government, civil society and the private sector need to work together to address this structural economic reality. The Umsobomvu Youth Fund's (UYF) school to work programme (a skills development initiative designed to transfer high level technical skills and facilitate work experience for unemployed matric and tertiary graduates with the aim of securing them meaningful employment in strategic sectors of the economy) and the youth service programme (focussing on unemployed youth who have no tertiary education, enabling them to acquire skills, competences and experience they require to achieve economic independence) are welcome initiatives[15]. Indeed, the UYF's JOBS database, a database of work seekers, is discussed in the accompanying DPRU report entitled *Graduate Databases*.

Some key lessons and policy considerations include the following:

- *Quality of institutions and academic courses*: A proper investigation into the quality of lecturers and of institutions in general is needed. Good education starts with properly trained lecturers who are able to continuously modernise and adapt their courses so that they remain relevant. Poor funding and poor management are often to blame. Many students study at poor institutions without knowledge about the quality or perceived quality (from the employer's perspective) of the qualification that they will receive afterwards, which often leads to disillusionment and disappointment when they fail to find employment.

15 Umsobomvu Youth Fund (UYF) was established by Government in January 2001 with the mandate of promoting the job creation, skills development and skills transfer among young South Africans between the ages of 18 and 35 years. The Youth Development Trust, in cooperation with Nokia, implemented the *Make A Connection* programme (MAC) in April 2000. The programme aims to tackle the persistent problem of youth unemployment by offering an innovative three month training course to graduates who have been unemployed for at least a year. During the training period, unemployed graduates learn to build their self confidence and motivation, improve their team work and presentation skills, acquire basic computer skills and learn how to look for and keep a job.

- *Training versus education*: Research in needed to identify the needs in the labour market with regards to technical (diplomas and certificates) and non-technical (degrees) training. The functions of colleges, technikons and universities in this regard should also be clearly delineated. Universities are traditionally institutions where students receive more general education of a highly academic nature, while colleges and technikons focus more directly on the technical training of students, which should adequately prepare them for the job market. These lines seem to have become blurred, with universities trying to introduce more job-relevant training, while technikons and colleges are enrolling more students in general fields of study such as arts and humanities. It needs to be debated whether this situation is ideal.

- *Career guidance and support*: One of the issues that came to the fore in the graduate tracer studies is a lack of assistance to students in selecting the right courses and fields of study. Whether this should be a function of the labour market or tertiary institutions is debatable. The question is how should the signals from the labour market be passed on to students? At present it appears as if students are more likely to enrol in areas with poor employment prospects. The problem also perhaps relates to the fact that many students fail to meet the entry requirements of many of the more scientific fields of study. Therefore, despite the fact that job prospects of students in scientific fields of study are better, poor secondary schooling and incompetence in areas such as mathematics prevents school leavers to follow these types of courses.

- *Work experience*: The labour market appears to have a preference for more experienced, older employees. There is a need to look at options for ensuring that graduates acquire relevant work experience prior to them formally entering the labour market, perhaps in the form of vocational training, holiday work experience etc.

This review of the nature, growth and extent of the graduate unemployment problem has perhaps left more questions than answers. The firm surveys, discussed in section 3, aim in part to shed some light on these questions from the employers' point of view.

3. Graduate Unemployment in the Context of Skills Shortages, Education and Training: Findings from a Firm Survey and Other Related Research

3.1 Background

As part of the Development Policy Research Unit's research into Graduate Unemployment a series of interviews with some of South Africa's largest companies, across a range of different sectors, were conducted during February and March of 2006. The interviews, broadly on the graduate unemployment problem, traversed a range of issues relating for example, to the schooling and higher education system, the learnership programme and National Skills Development Strategy (NSDS) and the nature of skills shortages and the skills deficit. In turn, a number of detailed long- and short-run policy suggestions emanated from the interviews and background research.

3.2 A Note on the Sample

The sample comprises 20 of South Africa's largest companies, of which 19 are members of Business Leadership. Fourteen of the companies are listed on the JSE, and 13 of these were among the top 40 performing companies as ranked on 10 March 2006 (JSE/Liberty Life, 2006). The companies are spread across a range of economic sectors, with two in the mining sector, nine in the manufacturing sector, one construction company, one company in the wholesale and retail trade sector and two companies in the transport and communication sector. Five major players in the financial services sector were also interviewed. The time constraints imposed on the project did not allow for a larger sample size.

Employment differs significantly across companies, ranging from a workforce of just over 2 000 employees to more than 40 000 workers. While employment numbers are not available for all the companies, Table 9 provides an indication of the size of the workforce for the companies we do have information for, as well as their share contribution to total employment in the relevant sector in 2005.

Table 9: Employment by Company and Sector, 2005

	Employment by Company	Total Employment by Sector	% Share of Sectoral Employment
Mining and Quarrying			
Company A	43,214		10.5%
Company B	31,000		7.5%
Total	74,214	411,077	18.1%
Manufacturing			
Company C	2,983		0.2%
Company D	24,737		1.4%
Company E	2,010		0.1%
Company F	10,441		0.6%
Company G	5,320		0.3%
Company H	3,000		0.2%
Company I	4,000		0.2%
Total	52,491	1,706,458	3.1%
Construction			
Company J	24,904		2.7%
Total	24,904	934,971	2.7%
Transport, Storage and Communication			
Company K	26,133		4.2%
Company L	10,059		1.6%
Total	36,192	615,743	5.9%
Financial and Business Services			
Company M	2,675		0.2%
Company N	36,156		2.8%
Company O	5,264		0.4%
Total	44,095	1,295,584	3.4%

Source: *LFS 2005:2 (SSA, Various); Company interviews and annual reports;*

Notes: *Employment includes permanent, contract as well as temporary workers*

The two mining companies accounted for more than 18% of employment in the mining and quarrying sector in 2005. Seven of the manufacturing companies contributed 3.1% to the total employment in their sector, while the construction company account for 2.7% of sectoral employment. Almost 6% of the workers in the Transport and Communication industry were employed by the two companies that we interviewed. The three financial services institutions that we have information for employed 3.4% of the workers in the financial and business service sector.

3.3 Production and Workforce Trends

The introductory segment of the interviews covered general issues around past company performance and future expectations, and how these have impacted on, or are likely to impact on employment in the future. In particular, companies were asked about changes in the size and composition of their workforces. Evidence presented in Section 2 suggests that South African firms are increasing the skills intensity of production as a result of the adoptions of technologically advanced production techniques in an effort to become more competitive globally. This often leads to a decrease in the size of workforce while at the same time altering the composition of the workforce (ratio of skilled versus unskilled workers). The introductory questions were therefore aimed at finding out whether such

trends were also visible in the small sample of large firms interviewed. However, at the same time the South African economy is entering a boom phase, which implies that some firms may actually expect to expand their production capacities and hence employment numbers.

The firms interviewed typically have complex corporate structures and are often involved in mergers or new acquisitions, selling of subsidiaries and outsourcing of activities. The corporate landscape has also changed dramatically in the last few years with companies entering into Black Economic Empowerment (BEE) deals. Such corporate transactions may have important employment effects for the company concerned (as reflected in their payroll), but the indirect employment effects elsewhere in the economy may in fact negate the net employment effect. As a result it is sometimes difficult to discern employment trends. However, the general industry-specific trends seem to concur with those of the economy. In short, the past decade or more has shown a decline in the importance of the primary sectors in the economy and a shift towards the more skill-intensive secondary (manufacturing) and tertiary (services) sectors. Firms themselves have also typically become more skills intensive. Below we briefly report on some of the industry and firm-specific findings with regards to growth expectations and employment trends.

The **mining** companies generally agree that the mining industry is unlikely to grow in the future, at least not within the domestic economy. As such the industry is unlikely to maintain its share of employment as the labour force grows over time – a trend that has in fact been visible for some time and can be expected from developing economies. The gold mining industry in particular is at best stable, but potentially a declining one, despite recent hikes in the gold price. The large mining companies in South Africa are multinationals and at present, company growth is driven mainly by expansion into overseas markets, with no significant employment impact domestically in South Africa.

As far as company growth and past and future employment trends in **manufacturing** are concerned most companies have plans to expand production, both domestically and internationally. However, very often increased domestic output is associated with higher labour productivity and improved production techniques rather than increased employment levels. While few firms are explicitly reducing their workforce sizes through layoffs, many are becoming 'leaner' in the long run by recruiting at a rate that is below the natural attrition rate (resignations and retirement) of the workforce. Increased production efficiency is also typically associated with increased skills intensity of the workforce.

However, this trend of downsizing or 'rightsizing' is likely to be something of the past. It had much to do with inefficiencies in production that had to be dealt with. In many instances large and ineffective staff structures were inherited from the past, caused in part by subsidisation and years of economic isolation. The current economic recovery can, however, reverse the trends of downsizing, especially if the manufacturing sector is able to exploit opportunities. Some firms hinted at plans to expand production capacity, especially in the light of announcements by government of large-scale investments in public infrastructure.[16] Such an increase in, for example, the number of plants a firm owns and operates, is likely to go hand in hand with increased employment levels despite continuing efforts by firms to become more efficient in production.[17] The combined effects of skills intensification and capacity expansion imply that key manufacturing skills, e.g. artisans, technicians, scientists and engineers will become even more important in the near future (see discussions in section 3.6).

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16 According to the 2005 Medium Term Budget Policy Statement (National Treasury, 2005) public sector investment is set to rise from its current level of approximately 6% of GDP to 8% of GDP. This implies that government's capital budget will rise by between 15% and 20% per annum (ASGISA, 2006).

17 Few firms were willing to reveal specific plans to expand capacity given the sensitive nature of such information. However, some firms have hinted at the potential impact of government's plans to increase public investments (see footnote 16).

Firms in the **services** sector generally report that favourable economic conditions have meant an increase in business and employment opportunities. Firms in the wholesale and retail trade sector have experienced a boom phase and report significant increases in sales, the number of retail outlets and employment levels. Favourable economic conditions during a period of low interest and inflation rates have led to strong growth in consumption expenditure by households in the last five to ten years. The financial services industry has also benefited from increased economic activity and expansion into non-traditional markets.[18] As a result employment levels in banking, auditing and insurance firms have been on the rise. There was one exception to this, with one of the insurance firms reporting a decline in employment in the last three to five years. However, this was related the net employment effects of mergers, acquisitions and outsourcing of non-core business processes. The transport and communications sector is highly monopolised. As competition barriers are being removed the firms are driving efficiency and restructuring inefficient staff structures, which have generally led to a decline in employment levels.

In summary the broad industry trends suggest that the services sector will remain the fastest growing sector. Financial management and accounting skills are important and enrolment in these areas has to be encouraged. However, the manufacturing sector should not be ignored. Skills intensification and capacity expansion linked to government's plans to invest heavily in infrastructure also implies that the current skills shortages in technical occupations such as artisans, engineers and technicians will become even more critical.

3.4 Recruitment and Talent Management Strategies

3.4.1 Recruitment philosophies

The recruitment processes and strategies vary greatly between different types of firms. In particular two main approaches exist. The first is commonly known as the 'pipeline' strategy, which entails a strong focus on the recruitment of young people who start at entry-level positions and are groomed and trained for middle- to senior management positions within the firm. Most of the firms (95%) interviewed base their recruitment strategies on such a pipeline strategy. For most of these firms the recruitment process is a core business function, with bursary schemes, training initiatives, graduate recruitment drives and general recruitment all linked explicitly to the current or future business needs of the firm. However, only a handful of the firms interviewed felt that their pipeline strategies are working in the sense that most vacancies arising at middle- to senior management levels are filled internally. In fact, many firms end up spending a large amount of resources on recruitment and headhunting of people with experience to fill vacancies at the upper end of the pipeline.

The second approach is that of only hiring people with experience. This implies, of course, that higher salaries are offered, but limited training is required given the person's past experience. The choice between employing recent graduates or matriculants into entry-level positions as opposed to employing more experienced workers is a difficult one to make. Despite the fact that most firms adhere to the pipeline strategy quite a number of firms nevertheless feel that experienced workers are more attractive than recent graduates from a recruitment point of view. Graduates and matriculants need substantial investments in training before they become assets to the companies. At the same time young people are highly mobile and the risk of losing a young trainee to a competitor shortly after completion of training is high. Yet, only a single manufacturing firm was very explicit about the fact that

18 This includes mostly remote rural areas and informal markets that were previously not serviced by the banking industry.

they did not employ recent graduates at all as they value experience more and are willing to pay a premium to attract skills.[19]

From a national human resource development point of view it is crucial that all firms buy into the pipeline strategy. For this to happen incentives need to be created to increase the absorption of graduates or young people, while firms' investments in training and development of young recruits should be protected. The learnership programme is one such incentive system. The fact that the majority of firms interviewed are forced to recruit experienced workers externally when vacancies arise at middle to senior management level, often at a large cost to the company, is indicative of the failure of the pipeline strategies of many firms. The cost to the company if often inflated due to exorbitant headhunting fees of employment agencies. The problem is exacerbated, of course, by poaching and headhunting due to the ongoing 'war for talent' in South Africa.

Recently steps were taken to simplify the immigration process for foreign workers with key skills. This reflects the severity of the scarce skills problem in South Africa (see section 4.1.1). However, such initiatives have to be seen as short-term measures aimed at relieving immediate shortages in the market, and should only be considered in cases where skills shortages are hampering company growth. The fact that companies regard experienced workers, whether foreign or local, as more attractive than inexperienced graduates is worrying.

3.4.2 Graduate recruitment

Recruitment drives or recruitment exhibitions on campuses are potentially very important to both employers and employees. From a firm's perspective they represent an opportunity to market the firm as a preferred employer, which may attract high-calibre jobseekers. From the students point of view they provide information, open up opportunities and options, while also shaping perceptions and expectations of students about the workplace.[20]

The use of recruitment drives at campuses generally depends on the firms' preference for this type of recruitment strategy. Recruitment drives are often very expensive, especially when it involves campus visits with exhibits and presentations, and on-campus screening and interviews. As a result on-campus recruitment drives are often only used by large firms that employ large numbers of graduates annually as a recruitment channel.[21] For firms that only take on a limited number of graduates annually, recruitment drives are viewed as too expensive.

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19 This is perhaps sample-specific. Typically large firms are in a better position financially to spend large amounts of money on training and staff development. They are also more willing and able to take the 'risks' associated with the pipeline strategy.

20 There is of course also the danger of 'too much information', especially with the Internet becoming an important marketing tool for firms.

21 The majority of firms interviewed make use of on-campus recruitment drives.

From the interviews it became clear that the majority of firms that make use of recruitment drives prefer to visit only specific institutions, with most firms being fairly explicit about the fact that they do not approach historically black institutions. A variety of reasons was listed:

- Most importantly or worrying perhaps, are companies' concerns about the quality of education at these institutions. When firms invest large amounts of money in recruitment drives they at least expect a return in the form an acceptable (quality education and good grades) number of potential recruits. This is often not the case at historically black institutions.

- Some firms also felt that students at historically black institutions are typically not exposed to many such corporate recruitment drives, and are therefore sometimes overwhelmed and unable to deal with the interview process in a mature way. Consequently the students are not highly successful in terms of being short listed. This relates to the problem of underdeveloped soft skills (communication skills, writing skills etc.) among many young black graduates in South Africa.

- Many of the manufacturing firms indicated that they do not approach historically black institutions since they do not offer courses in areas where they recruit, e.g. engineering. Recruitment drives at historically black institutions simply do not produce the number of suitably qualified candidates to make the expense worthwhile.

- Given increased enrolment numbers of black students at historically white institutions most firms indicated that they manage to find enough employment equity candidates by only visiting the historically white institutions.

- Adding to firms' reluctance to visit historically black institutions inability to facilitate recruitment drives. Many of these institutions have poor infrastructures in terms of facilitating graduate recruitment drives. The infrastructure required to facilitate recruitment programmes includes well-functioning recruitment placement offices, trained and committed staff, suitable venues for talks, presentations and exhibitions, and media (radio, student newspapers etc.) on campus.[22]

The low probabilities of students from historically black institutions of finding employment after graduation are possibly linked to firms' unwillingness to invest in recruitment drives at these institutions. Firms can never be forced to visit specific institutions. It remains a business decision. Tertiary institutions need to realise the importance of facilitating the process of bringing together prospective employers and employees, especially if this can increase the success of students in finding employment opportunities. It is crucial for historically black institutions to realise that their quality is also measured by their graduates' success in securing employment, and that any efforts towards improving their chances of finding employment will reflect positively on the institution. The career prospects of students at historically black institutions will be further enhanced by improving the quality of teaching at these institutions. Alternatively, if quality is on par then these institutions have to realise the importance of using proper marketing strategies for their institution, to alter the perceptions of employers.

22 This was a comment not restricted to historically black institutions. Some historically white institutions were also unhelpful in facilitating recruitment on campuses.

3.4.3 Bursary schemes

About 65% of firms interviewed link their graduate recruitment processes to bursary schemes. These are generally linked to university education, but in some instances bursaries are also offered for technical studies and universities of technology. The number of bursars taken on varies widely between firms, but is largely linked to the annual intake of graduates at the firm. Some firms, however, offer fewer bursaries annually than the planned intake and supplement the annual intake of graduates during graduate recruitment drives on campuses. Others offer more bursaries than the planned intake, in which case the expenditure on the bursary is seen as a corporate social investment in education.

Generally firms are very positive about their bursary schemes for a number of reasons:

- They ensure to a large extent that the targeted annual intake of graduates is reached. They also allow firms to plan ahead and ensure that employment equity targets will be met in the future by enrolling the right mix of students.

- The firm can become involved more directly in the education of the student in the sense that they can provide academic support and guidance as to subject choice. Some of the firms that run large bursary schemes offer additional guidance in terms of subject choice, tutorials and study support.

- Firms can offer relevant practical experience to bursary holders by creating opportunities for vacation work. This not only supplements students' incomes, but prepares students for the workplace and reduces the training requirement of students once they become employed full-time.

- All these benefits come at a fairly low risk to the company. Most bursaries are offered on condition that bursars have to work for the company for a set number of years, usually linked to the time of sponsored study. If the student is unwilling to work for the company at completion of his or her studies the bursary often has to be paid back with interest. Such conditions are seldom attached to normal training offered at the workplace.

3.4.4 Employment equity and the 'war for talent'

Sectoral BEE (and more recently BBBEE) charters typically dictate employment equity targets for industries. However, it can be argued that employment equity requirements have biased remuneration packages of previously disadvantaged individuals with desired skills and experience upwards. As far as the intake of previously disadvantaged graduates is concerned firms generally feel that there is no shortage of graduates with *suitable* qualifications. However, when it comes to black students with good *quality* qualifications and above average grades, in certain study areas in particular, firms are experiencing shortages.

Manufacturing firms found it especially difficult to find good quality black candidates with engineering, science and information technology qualifications. While equity targets are more easily reached in the finance and business sectors, given relatively large enrolment of black students in commerce disciplines, black students with good finance and accountancy grades are still hard to come by. This is especially true for African black students: firms indicate that they generally have less trouble finding Indian and Coloured students. The poor performance and high failure rate of black students at tertiary institutions has become somewhat of a national concern and has led to the a joint research initiative

between the Association for Black Empowerment in Higher Education (ABEHE) and the Human Sciences Research Council (HSRC) on the matter.

Another concern raised by firms relates to soft skills and workplace readiness, specifically among students from historically black institutions. For many the transition from poor quality schooling to tertiary institutions is a difficult one. The transition from tertiary institutions to the workplace is even more challenging. Firms cite poor soft skills, such as (English) communication skills, as a key shortcoming of students from historically black institutions. These institutions also seldom offer the type of work experience opportunities that can be found at historically white universities, e.g. representation on student bodies, administrative or academic assistant positions in university departments, and so on. However menial these tasks, they provide some form of basic experience to students in dealing with administrative issues and communicating optimally at the workplace. Firms find that, generally speaking, students who come from of historically white institutions, both black and white, are better prepared for the workplace both in terms of soft skills and work experience, and therefore are better able to adapt to corporate environments. Although there is no hard evidence for this, it is clear that this differential signalling is in part a function of students at historically black institutions as opposed to historically white institutions, irrespective of race, having experienced distinctly lower quality schooling relative to their counterparts at historically white institutions.

The high mobility of young black graduates is further cause for concern given employment equity targets and the war for talent in this country. Most firms report a higher than average turnover rate for young black workers, especially those with sought-after qualifications such as engineering and science degrees. Often, high calibre black employees with scarce skills do not stay in positions long enough to gain the necessary experience before being offered more lucrative positions by rival firms. Poaching of this nature comes at a serious cost to the economy, both in terms of recruitment costs (it can easily cost an employer up to R80 000 to headhunt a prospective employee) and skills lost to specific industries when people move between industries. One of the mining firms for example, noted that many mine managers are being poached by the finance industry for their good managerial skills. However, more importantly, high mobility, especially early on in a career, can also be harmful to the individual who never fully realises his or her potential. The long run risk is that these individuals become unattractive to prospective employers due to the perceived risk of employing them and investing in their training. In response to high turnover rates many firms have aggressive retention strategies in place.

Given the size of the firms interviewed many are able to offer remuneration packages above the industry averages, which to some extent reduce labour turnover rates. Although this is a successful way of reducing labour turnover by countering poaching, it sends the wrong signals. As a result some firms feel that certain ‘unfair’ recruitment practices should be regulated. Also, talent management should become a key personnel management function in firms and young appointees should be educated about the dangers of changing jobs too regularly.

3.4.5 Graduate Expectations

Most firms indicated that the expectations of graduates, particularly university graduates, are too high. Employers however feel that the return to employing a graduate is low, given that graduates require substantial on-the-job training before they provide optimal returns. In addition, many firms indicated that these expectations are unjustified, particularly because of the limited experiential training of graduates. Some firms also indicated that graduates expect their qualifications to open doors at middle management level and are often unwilling or unhappy to start at entry-level. Firms feel that it is necessary for graduates to have a more realistic view of what they can offer and what to expect from their first jobs.

In addition, as argued in the previous section, current labour market requirements have biased remuneration packages upwards. However, some firms feel that the chronic shortages of black university graduates are starting to subside and remuneration priced more realistically. Yet many graduates still expect high start-up packages.

3.5 Incentive Schemes aimed at Promoting Employment and Training

3.5.1 The National Skills Development Strategy[23]

The National Skills Development Strategy (NSDS) was launched in February 2001 with the aim of transforming education and training in South Africa by improving both the quality and quantity of training. The responsibility of implementing the NSDS rests with the National Skills Fund (NSF) and the Sector Education and Training Authorities (SETAs). Under the Skills Development Act of 1998 (Republic of South Africa, 1998), 25 SETAs were established in March 2000.[24] The Skills Development Levies Act of 1999 (Republic of South Africa, 1999) requires that employers with an annual payroll of greater than R250 000 pay 1% of the value of their payroll to the South African Revenue Services (SARS).[25] 80% of the levy is transferred to the relevant SETA and the remaining 20% is transferred to the NSF. Employers can claim back a maximum of 50% of the original 100% levy in the form of mandatory grants and 20% in the form of discretionary grants. The remaining 10% is retained by the SETA for administration.

One of the functions of SETAs is to develop and register learnership programmes. Learnerships are specifically aimed at assisting new entrants into employment by providing them with skills and improving their chances of finding or creating work The learnership system is derived from the apprenticeship system; while in countries like the UK, Australia and Germany these retooled apprenticeships became known as 'Modern Apprenticeships', in South Africa they became known as learnerships (Smith *et al.*, 2005:540). The purpose of learnerships is threefold: to provide workplace learning by an accredited training provider, to ensure the link between structured learning and work experience, and to ensure that training culminates in a nationally recognized qualification. The qualification obtained via a learnership is registered on the National Qualifications Framework (NQF)

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23 This section provides a brief overview of the policy framework upon which workplace training is based. A detailed discussion is added as an appendix (see section **Error! Reference source not found.**).

24 There are currently 23 SETAs due to the merger of some of the SETAs in 2005.

25 Employers paying annual remuneration of less than R500 000 are exempt from skills development levies from 1 August 2005.

by the South African Qualifications Authority (SAQA). The building blocks of learnerships are unit standards. Employers implementing learnership agreements can claim back discretionary grants from the relevant SETA, and in addition are entitled to tax breaks. These incentives are typically higher for unemployed learners.

By March 2005, a total number of 109 647 unemployed people below the age of 35 had entered into learnership/apprentice agreements, well above the target of 80 000 set out in the NSDS. However, how many people have successfully completed their learnerships programmes and found employment is unclear (employers are not obliged to employ learners post-learnership), although Jennings et al (2004) (cited in Department of Labour, 2006a) and Smith et al (2005) give some indication of the trends. There has also been much concern about the functioning and effectiveness of SETAs and the learnership system, as well as the perceived quality of learnership programmes in some cases given that SETAs have received substantial funding through collection of skills levies as well as the NSF.

The Skills Development Act of 1998 effectively repealed the Manpower Training Act of 1981 (Republic of South Africa, 1981), which governed apprenticeships. However, schedule two in the Skills Development Act made provision for those sections in the Manpower Training Act pertaining to apprenticeships to remain in force until the Minister repealed them by notice in the Government Gazette. The Act therefore seemed to suggest that apprenticeships were being phased out and replaced with learnerships. Adding to these suspicions is the fact that learnerships have a much broader scope in terms of the coverage of occupations and thus in a sense encompass apprenticeships (see section 3.6 for more):

- Learnerships are period bound and linked to specific SAQA registered qualifications (NQF recognised). The scope of coverage is for all possible qualifications (approximately 25 000).

- Apprenticeships are also linked to a qualification, but these are not necessarily SAQA registered. Apprenticeships are further linked specifically to designated artisan trades (approximately 500). The fact that apprenticeships are not SAQA accredited should not be seen as a distinct disadvantage of apprenticeships. SAQA accreditation implies basically that qualifications are aligned to the NQF, whereas apprenticeship qualifications are not necessarily (although in reality they are equivalent to NQF 1 to 4 levels). The SAQA qualifications are also transferable between industries, which makes it perhaps more attractive to jobseekers. However, apprenticeship qualifications are also nationally (and sometimes internationally) recognised, but often only *within the specific industry in which they were obtained*.

3.5.2 Firm Responses to Learnerships, Apprenticeships and Workplace Training

During the interviews firms were asked about the effectiveness of the learnership system in absorbing more graduates and/or young unemployed people. Respondents were also asked to talk about workplace training in general and comment on the incentive systems that in place. The focus was mostly on learnerships, although apprenticeships are still favoured in some of the manufacturing sector firms.

As noted in the preceding section a large number of learnerships have been registered and many people have been put onto learnerships during the last few years. Learnerships have the dual

objective of improving the skills of the general workforce and at the same time increasing employment directly (in the sense that the grants act as an employment subsidy) or indirectly (in that learners generally become more employable and are thus employed on completion of the learnership). Learnerships are generally targeted at both the employed and unemployed, although the grants available for unemployed learners are higher. About two-thirds of learners in South Africa are officially classified as unemployed learners (see Figure 1 in the appendix, and Smith et al. (2005) for more).

However, indications from our interviews are that these represent people that the firms would have hired anyway. As such learnership grants are in a sense a windfall gain as firms probably would have trained these workers anyway. Although harsh, critics may see this as a failure of the learnerships in its objective of increasing employment levels over and above what the employment level would have been in the absence of the incentive system. Put differently, the learnership programme on current evidence has done little to increase employment above the existing market equilibrium level of employment.

The idea of the learnership system was that some firms would utilise economies of scale and offer workplace training to more learners than they could or wanted to absorb themselves. However, it appears as if incentives are not high enough as very few firms train 'for the market'. Most firms prefer to link learnerships to their actual recruitment strategies with the intention of employing all learners upon completion. This obviously explains why there is no net employment effect over and above what normal absorption would have been. This is also understandable; as one respondent said, he hates the idea of offering training to learners but then having to turn them away once they complete the training. Not only is it stressful to learners as they have to look for new employment opportunities, but the firms providing the workplace training are left to deal with the disappointment.

A policy option that may be considered is the idea of a marginal subsidy. This involves offering higher subsidies to firms who increase the intake of learners over and above the intake of the previous year. As discussed in section 3.5.3 below firms suggested they would only consider increasing the number of learners if all costs were covered. This includes the financial costs associated with training provision, as well as the administrative burden associated with implementing and running the learnership programme (see Box 2 on page 37 for more information).

Evidence presented by Smith et al. (2005) does seem to indicate that the tax breaks are acting as an incentive to at least enrol staff members in formal training programmes: about 75% of respondents in a firm survey conducted by these authors indicated that they were involved in learnerships because of the tax incentives. Thus, although net employment levels are perhaps not increased by the learnership system, more people are formally trained and acquire SAQA-recognised qualifications. Firms are generally very positive about the impact learnerships have on skills at the firm level, which certainly implies that learnerships are successful in achieving the primary goal of improving skills of the workforce.

Some general comments by respondents that are relevant in this regard include the following:

- Some firms partake in the process because of their industry's BEE charter prescriptions and the BEE points that they can earn for offering learnerships. Many respondents suggested that learnerships are too expensive for small firms to implement. One solution is for large companies to offer learnerships that are linked to employment opportunities at smaller firms. These could, for example, include small firms that are linked to the large firm as a supplier (upstream) or client (downstream). A number of respondents suggested

much greater collaboration is needed between large and small firms, as proper utilisation of capacity at training facilities at large firms could lead to a win-win situation for all.

- Learnerships are not the only solution to creating employment and bridging the skills deficit. It is also not a system that suits all industry types. In some industries apprenticeships with a more practical focus may perhaps work better (artisans, technologists) while in other instances a more academic approach is perhaps preferred (accounting article clerks). Often firms would prefer to offer relevant practical training that is not necessarily linked to a SAQA recognised academic qualification. This idea is explored in more detail in section 3.6.

- Bursary schemes are utilised by many larger firms either as a corporate social investment or as core part of the recruitment process. The latter should be encouraged and perhaps even subsidised by the state as an *alternative* to learnerships or wage subsidies. If bursars are expected to do vacation work as part of the requirements of the bursary contract it becomes very similar to a learnership scheme, but potentially less costly since the academic assessment takes place outside the firm at the educational institution. Such bursary schemes should preferably be funded over and above existing state bursary schemes. One possibility is to finance and administer this funding through the National Skills Fund (NSF) contributions made by firms as part of the skills levy paid to SETAs. The NSF is already involved in education funding in terms of its National Students Financial Aid scheme (see section 1.1.8 in the appendix).

3.5.3 Learnerships and Graduate Absorption

Learnerships are generally not targeted at graduates in the pure sense of the word, i.e. university or university of technology graduates. During the interviews firms suggested that graduates are often reluctant to enrol for learnerships since further training of this nature is 'beneath them'. There is a perception that learnerships have simply replaced workplace training based on the apprenticeship system, which was specifically targeted at artisans and the lower NQF level (or equivalent) qualifications. As a result learnerships have a kind of a 'blue collar worker' label. Yet, the system is designed to include workplace training and education at all NQF levels, which includes even post-graduate qualifications.[26]

This suggests that learnerships at present are not necessarily geared towards relieving the graduate unemployment problem per se. Yet, they are potentially able to address the matter, particularly with regards to the following:

- Many graduates lack soft skills and are not workplace ready when they start their careers in the corporate sector. In fact, this was highlighted as a reason why many graduate are unsuccessful already in the recruitment phase (see section 3.4). However, some firms have started using learnerships successfully as a way to bridge the 'soft skills deficit' and narrow the gap between the workplace environment and student life. Various soft skills learnership programmes are available, for example the Mentoring Programme (NQF 3 to 5 covered) offered by the Reach Africa Group (a training provider) in conjunction with the Services SETA (see www.reachafrica@iafrica.com).

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26 The issue of learnerships for middle-management occupations (NQF levels 6 to 8) is explored further in section 3.6.2.

- Another problem frequently raised by employers was the fact that students often graduate with inappropriate degrees. Firms frequently demand people with financial backgrounds, or more technical qualifications such as science and engineering. One of the auditing firms interviewed said they were in the process of developing a learnership based on similar principles as the so-called CA conversion course at the University of Cape Town. This is a one-year course that allows graduates with non-commerce first degrees to convert to a B.Com. (Accounting) degree within one year, enabling them to then apply for article clerk positions at auditing firms. Such a programme can easily be implemented as a learnership at a firm, with the university as the training provider.

- Another way in which learnerships can be used to absorb more graduates with less appropriate qualifications is in the Business Process Outsourcing (BPO) sector (see Box 1). Many firms, including telecommunications and financial and business services firms are enrolling graduates with non-technical qualifications but some IT skills in call centre learnerships where they quickly learn basic business and communication skills pertaining to the specific call centre work that they perform. This presents a wonderful opportunity to graduates to enter the workplace, gain valuable experience and move on to better opportunities.

Box 1: Business Process Outsourcing, Graduate Recruitment and Learnerships

Business Processing Outsourcing (BPO) refers to the strategic business tool whereby firms outsource non-core business processes to service providers who are often able to perform the relevant tasks at a lower cost given economies of scale, specialisation and cost structures (e.g. lower wages). The Government has identified the BPO sector (together with the tourism sector) as a priority sector for its Accelerated Shared Growth Initiative (ASGISA). The sector's high labour intensity and rapid worldwide growth makes it an ideal sector for job creation, while it also presents various opportunities for broad-based BEE and small business development (see ASGISA, 2006).

The South African Contact Centre Community (SACCCOM) is an NGO with developmental objectives and a view to promote the growth and development of the contact centre and BPO sector in South Africa. In particular, this NGO promotes outsourcing as an option to domestic firms and supports firms wishing to enter the market as service providers (e.g. telecommunications firms, ICT firms, auditing firms etc.). SACCCOM also promotes South Africa internationally as a preferred offshore location for foreign firms.

South Africa's offshore call centre industry is growing and is well positioned to exploit current opportunities given its multiple urban centres and first-world infrastructure. The McKinsey management consultancy group's study on the viability of the BPO sector shows that the English speaking global market is expected to grow about five or six fold over the next 3 years, with 40 to 50 per cent of the growth accounted for by the banking and insurance business that frequently make use of BPO. The study argues that an additional 3 million jobs will be created worldwide in the BPO sector, of which, 200 000 to 500 000 jobs will be contested by South Africa and its direct competitors. If South Africa is able to successfully exploit this opportunity the country stands to create between 65 000 and 100 000 jobs, attracting $90 to $175 million in FDI in the process.

The sector employs many young people, typically aged between 18 and 35. Specific requirements usually include fluency in English and computer literacy, depending on the service. The majority of people in the BPO sector are school leavers or matriculants, who typically have a long-term view of employment and as such investing in training of matriculants is seen as a fairly safe investment from the firms' point of view. However, graduates are also employed. Graduates, although more mobile (they generally see this sector as a stepping stone into the market), are often targeted to fill middle to senior management positions in BPO sector firms after completing basic training. Compared to matriculants, graduates require less training and move faster up the job ladder. However, the industry faces the challenge of promoting the BPO sector as an option to graduates since starting salaries are low and the industry is perhaps not seen as glamorous. According to SACCCOM they intend promoting the BPO as an employment option to students at campus recruitment drives.

Out of several companies interviewed at least five have implemented learnerships to train call centre staff. One of the auditing companies has identified BPO as a major growth sector and they have already expanded their services in this sector (outsourcing accounting and human resource management services). As such they run various learnerships to train people for call centre work and on-line support services in the areas of accounting and human resources (SAP based software). Various other financial institutions, especially insurance companies, make extensive use of call centres to support their large client bases, and training is often offered in the form of learnerships.

3.5.4 Administration and Costs of Learnerships

The complex bureaucratic processes surrounding the establishment of learnership programmes and the enrolment and assessment of learners were frequently raised as a major barrier to expanding learnerships. In some instances the process of setting up and registering learnerships is seen as too cumbersome to make it a worthwhile exercise. At the SETA level, mismanagement, inefficiencies and high staff turnover rates were some of the problems mentioned. This was a common sentiment across all firms. The few firms that felt the process was fairly straightforward typically have representation on the SETA boards, which implies they have better knowledge of the procedures. In addition, the sample of firms interviewed represent those that typically have the resources and capacity to deal with SETA problems as compared to smaller firms who do not have the resources and capacity, yet many of the firms find the SETA environment a difficult environment in which to function, with one firm going as far as to call the process a 'nightmare'.

Incentives for the private sector to register learnerships come in the form of tax breaks and learnership grants. Companies who take on previously unemployed learners are entitled to a tax break of a maximum of R50 000 per learner, R25 000 claimable in the year of enrolment and R25 000 claimable in the year of completion. For those that take on employed learners, 70% of the initial R25 000 may be claimed. From 1 March 2006, the maximum initial allowances for existing employees increased to R20 000 (up from R17 500) and to R30 000 for new employees (up from R25 000). The maximum allowance upon the completion of the learnership increased from R25 000 to R30 000[27].

The other incentive offered is a grant for putting people onto learnerships. .The actual size of the grant is determined by the SETAs The grants are managed and disbursed by the SETAs, the amount depending on the level of complexity of the learnership, the input costs, the difficulty associated with convincing employers to take on learners, etc. The grant is meant to cover the learner allowance, as well as the course fees for the training and other associated costs. The grants for taking on unemployed people onto learnerships is typically higher than for taking on employed people.

Firms generally indicated that the incentives were well below aggregate actual direct costs borne by firms, which include stipends, training materials and tuition costs. When adding the indirect costs, such as staff (administrative) and infrastructural requirements the net cost per learner becomes substantial. Few firms could provide accurate estimates of the net cost of learnerships. Crude estimates of the net operating cost per learner per year were in the region of R35 000. When also accounting for staff and infrastructure requirements, the actual budget outlay increased to about R150 000 per learner per year.[28]

The majority of firms interviewed indicated that they could only expand their learnership programmes if the grants were increased to such an extent that all administrative costs were covered since the current intake of learners were invariably based on the firms' needs. This raises the issue of marginal subsidies as a policy option (see example in section 3.5.2).

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27 More favourable allowances were also introduced to promote the enrolment of disabled learners (National Treasury, 2006a).

28 Note that these figures may not be reliable averages across all industries and firms.

Anecdotal evidence presented by many of the respondents suggested that high start-up costs prevented many small firms from setting up and offering learnerships. Often large firms have one or two full-time staff members that are dedicated to dealing with SETAs and taking care of the administrative requirements related to learnerships. Smaller firms cannot afford such expenditures. The same goes for training providers: smaller training providers cannot afford to apply for accreditation and often lose out on training contracts because of this. Small firms play a very important role in creating employment opportunities, but the current learnership system is designed in such a way that they cannot participate.

Finally, at an institutional level many firms felt that better coordination and clarity was needed about the respective roles of the Departments of Labour and Education in the learnership system. Since learnerships involve both education and employment, areas of overlap require constant and consistent collaboration between the Department of Labour and the Department of Education, which many respondents felt was lacking.

Arising out of the above, some of the policy implications include:

- Exploring ways of simplifying the bureaucratic processes of the SETAs without compromising the credibility of the qualification obtained through a learnership. This is perhaps the greatest challenge and many feel that there is no real solution other than to give firms more responsibility and trusting them more in awarding qualifications. Simplification will also reduce costs, which will also allow greater buy-in from smaller firms.

- Reviewing the cost of providing training and education via a learnership programme by vesting administrative control and authority with registered education and training providers. The infrastructural and staffing requirements of learnerships offered at firms are enormous. Educational institutions perhaps have a competitive advantage in administering the process of assessing the academic performance of students and awarding qualifications. Firms should be allowed to focus on what they do better, namely provision of workplace training and practical experience.

- The fact that learnerships are linked to an academic qualification makes it a novel idea (transferability of a qualification across industries), but it also introduces administrative complexities (unit standards, assessment processes, accreditation etc.).

Box 2: Marginal Subsidies

The notion of a marginal as opposed to an 'average' subsidy derives from the theory of employment or wage subsidies (see Pauw and Edwards, 2005). The learnership system falls in the same vein as employment subsidies in the sense that employment (in this case linked to training of the employee) is subsidised, which serves as an incentive to the employer to increase the overall employment level. If, however, firms collect the subsidy but fail to increase employment they receive a windfall gain and the subsidy is ineffective in reaching its goal of increased employment. This is in fact what seems to be happening with the learnership system: firms are collecting subsidies (or grants) for people that they probably would have hired and trained anyway (see section 3.5.2). This may be sample-specific: the firms that were interviewed are large firms and many have been involved in workplace training in any event. Kraak (2006) notes "training is occurring primarily in large and medium-sized firms – enterprises that would train irrespective of incentives and encouragements from government". The author further finds that training expenditures range between 2 to 4 per cent of payroll, which is well above the sector charters' recommendation of around 1 per cent. "This was the case prior to the launch of the NSDS and continues to be the case today" (Kraak, 2006).

During the interviews firms were asked whether, firstly, the current subsidy amount per learner covered costs, and secondly, how the subsidisation scheme would have to be changed to encourage them to increase the number of learners taken on annually. Most firms said that the subsidy amount – approximately R25 000 at the start of the learnership and a further R25 000 upon completion – did not cover costs, especially when taking into account hidden costs such as office space and equipment and staff time. Most firms also felt that they are currently training an optimum number of learners, which is typically based on staffing requirements, but if all administrative and training (direct and indirect) costs were covered, they would consider employing additional people.

A marginal subsidy in the context of an employment subsidy scheme works on the principle that only additional workers over and above the current employment level are subsidised (Pauw and Edwards, 2005). This principle is easily adapted for the learnership system. Two variations of the model can be considered: (1) Rather than subsidising all trainees of the firm, only learners over and above the *number of learners that would have been trained anyway* are subsidised. (2) Alternatively, all learners are subsidised, but the subsidy amount for learners over and above some threshold level is higher.

Examples:
Firm A has 100 learners in year one and receives a subsidy of R25 000 for each learner. Government wishes to increase the number of learners at Firm A by 20% to 120 learners. Firm A responds by saying they cannot absorb more, unless the total cost of the additional learners is covered (say R50 000 per learner). This subsidy now covers the marginal cost of employing an additional worker. This can become quite costly, and in order to finance the marginal subsidy government may consider reducing the 'average' subsidy of the first 100 learners. In the extreme the subsidy for the first can be reduced by 60 per cent to R15 000, in which case the R1 million that is saved can be used to subsidise 20 additional learners at R50 000 per learner. If it is really true that the firm would have trained the first 100 learners even in the absence of the subsidy, they will still train the 100 workers, but now also the additional 20 because the subsidy amount is now high enough to become an incentive to increase employment over and above the baseline intake.

While the above example is greatly simplified, it illustrates the point quite effectively. In reality the true marginal cost of employing an additional learner may be much lower given that significant investments have already been made to accommodate the first 100 learners. In instances where firms were able to provide estimates of the *average cost per learner*, figures ranged from about R35 000 (direct training and administrative expenses) to over R100 000 (cost of employment taking into account office space, equipment and staffing requirements, e.g. running a human resource division responsible for implementing and administering the learnership programme). The marginal cost per learner may be much lower, and probably closer to the R35 000 estimate (note this is the net cost-to-company for a learner once the state subsidy and tax allowances are accounted for).

3.6 Vacancies, Scarce Skills, Education and Training

3.6.1 Identifying Scarce Skills

Various types of shortages exist; in particular three main areas can be identified as critical:

- Shortage of artisans and other technically trained workers, such as electricians, technicians, mechanics etc. Engineers and scientists also listed high on the list of scarce skills. These shortages were especially raised as a concern in the manufacturing sectors.

- Shortage at middle- to senior management level. This skills shortage exists within all industry types, e.g. mine managers or shaft managers in the mining industry, foremen and managing engineers in the manufacturing industry and general business managers in the services industry. Management skills, it seems, are so problematic that poaching is endemic across industries. For example, engineers and mine managers are often coaxed into accepting positions in the banking or finance industry.

- As far as entry-level positions are concerned, the constraint, as mentioned, is not necessarily the quantity of graduates, but rather the quality of these graduates. At the graduate level therefore the problem seems to relate to a skills deficit (in terms quality) rather than a skills shortage (in terms of numbers).

The phenomenon of rising graduate unemployment has to be viewed within the context of skills shortages and vacancies that exist in the private sector. The third point above is interesting, as it suggests that graduate unemployment relates either to an oversupply of graduates in general or perhaps, more likely so, an oversupply of inappropriately qualified or poor quality graduates. Some firms explicitly noted that the average new recruit's education is of a lower quality than in the past, while others suggested that if they could find more good quality graduates they would increase the intake of graduates. This raises the issue of graduate employment targets, i.e. how many graduates would firms employ if there was no quality issue at hand?

The number of graduates absorbed intermittently by firms appears, in many cases, to be driven by the quality of supply. Hence, firms who require a set number of graduates may actually end up adjusting these targets downwards given the skills and quality of the pool of the applicants. Conversely, firms have indicated that they are willing and able to increase the intake if faced with a higher quality of labour supply. The notion therefore in an odd way, that supply creates its own demand, seems to be partially true at the margin here.

In section 3.6.1 we explore some of the reasons for the skills shortages as defined in the first two bullet-points above. We look at both the supply and demand-side issues that have contributed to this problem. Section 3.6.2 considers some of the concerns around the skills deficit problem and inadequate or inappropriate qualifications obtained by graduates at secondary and tertiary institutions.

3.6.2 Explaining Skills Shortages

a. Graduation Levels in Technical Qualifications at Universities and Universities of Technology

Kraak (2003) presents various figures showing evidence of declining numbers of engineering students graduating from tertiary institutions. For example, university graduates with engineering bachelor's degrees declined from a peak of just under 1 600 in 1994 to around 1 150 in 2000. Similarly, despite the almost fourfold increase in enrolments at universities of technology between 1988 and 2000, the number of students graduating with national diplomas, higher diplomas and degrees in engineering declined dramatically. As Kraak notes, "*it is ironic that institutions of technology … are currently witnessing a dramatic decline in a key 'hard' technology field (engineering), while graduations in 'softer' non-technical subjects (such as business studies) expand*" (2003).

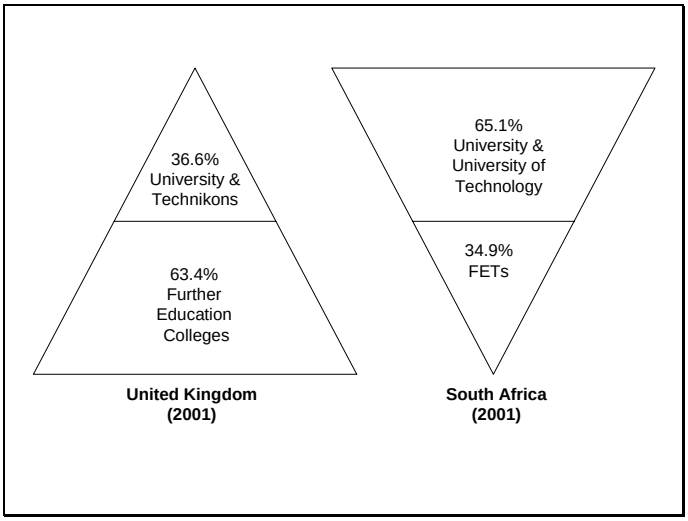
Adding further to the shortages is engineering graduates' unwillingness to do front-end engineering work, a problem identified by one of the construction firms interviewed. Most students show a strong preference for working as engineering consultants in a services environment rather than working at manufacturing plants or mines.

It is apparent that training at universities and universities of technology is skewed towards producing workers for the rapidly expanding tertiary (services) sector, with large numbers of students graduating in management sciences, commerce and finance. All this comes at the expense of the mining and manufacturing sectors. While such a shift towards services was perhaps justified by market conditions during the 1990s, manufacturing firms are currently facing skills shortages in the face of increasing demand for their products. Demand is fuelled further by government's plans to dramatically step up public sector investment in the next few years.

b. Enrolment at Tertiary Educational Institutions

Related to the above is the unique situation in the South African tertiary education system whereby a huge premium is placed on university educations as opposed to technical qualifications obtained at universities of technology, tertiary colleges or FET colleges. When compared to, for example, the United Kingdom South Africa's enrolment at tertiary institutions appears to be highly skewed towards 'academic' institutions (universities and universities of technology) and away from FET colleges. Figure 6 shows clearly that South Africa has a large share of students attending universities and technikons relative to FET colleges. In 2001, the most recent year for which figures could be found, only 36.6% of students attending a tertiary institution in the United Kingdom were attending a university or technikon, with the remainder (63.4%) attending FET colleges. In the same year, attendance at tertiary institutions in South Africa was heavily skewed towards universities and technikons, with almost two-thirds of students attending universities or technikons. In that year 65.1% of all tertiary students in South Africa were studying at universities or universities of technology. University students alone comprised 44% of all students.

Figure 6: Enrolment at public educational institutions in South Africa and the United Kingdom



Source: (South African) Department of Education (2003) and UK Higher Education Statistics Agency (see www.hesa.co.uk).

Given the nature of skills shortages many firms felt that government should subsidise or promote tertiary enrolment in fields of study or training that are more practically orientated. Manufacturing firms in particular experience shortages of experienced artisans, which suggest that higher enrolment at technical FET colleges is crucial. Firms also called for greater collaboration between educational institutions and the business sector on curriculum design in order to address problems associated with irrelevance of certain course modules and the lack of practical application of theory. Collaboration entails developing courses together and creating opportunities for internships or experiential training as part of academic courses. It is crucial that the qualification and practical experience obtained at educational institutions are relevant to the needs of employers.

c. Workplace Training and the Policy Environment

Adding to the current woes of the manufacturing sector is the apparent decline in apprenticeship training during the 1990s. Kraak (2003) shows that the number of apprentices in training in South Africa declined from 29 826 in 1986 to 16 577 in 1998, a drop of almost 50%. A number of reasons exist for this decline, including economic reasons (contraction in output), as well as the policy environment. These are discussed further below.

This decline was driven by the contraction in output in the manufacturing sector over this period. Firms followed strategies of 'rightsizing' in an attempt to raise efficiency and reduce costs. Firms' expectations of future skills requirements were such that training did not feature high on the list of priorities for the sector. The lack of training provided can perhaps be seen as short-sighted by firms, although the recent boom phase and the planned increases in public sector investments could perhaps not have been foreseen at the time.

From 1998 onwards with the implementation of the Skills Development Act of 1998 (amended in 2003), which provided the institutional framework for the development and implementation of national, sectoral and workplace strategies to develop and improve the skills of the South African workforce, further uncertainties around the future of the apprenticeship system emerged. The Skills Development Act of 1998 effectively repealed the Manpower Training Act of 1981, which governed apprenticeships. However, schedule two in the Skills Development Act made provision for those sections in the Manpower Training Act pertaining to apprenticeships to remain in force until the Minister repealed

them by notice in the Government Gazette. The Act therefore seemed to suggest that apprenticeships were being phased out and replaced with learnerships. Adding to these suspicions is the fact that learnerships have a much broader scope in terms of the coverage of occupations and thus in a sense encompass apprenticeships.

More recently various sectoral Black Economic Empowerment (BEE) charters were drawn up by the Sector Education and Training Authorities (SETAs), and very often the wording in these charters suggested that 'BEE points', which are awarded to firms to determine whether they are 'BEE compliant' only awarded points for learnerships specifically, and not apprenticeships. This has led some firms to convert apprenticeships to learnerships in order to comply with the BEE charters. In fact, some firms indicated that they only provide training based on the learnerships system because of the BEE points that are on offer. In the absence of learnerships they would have provided training based on their own models.

It appears now as if there is a realisation among policymakers that apprenticeships may perhaps be more appropriate. In fact, steps are being taken to 'bring back apprenticeships' and to restore firms faith in the future of apprenticeships. While the changeover from the apprenticeship to learnerships initially appeared to imply the end of learnerships, it now starts to seem that it was merely a name change. In an article published on The Skills Portal website (www.skillsportal.co.za, 'Apprenticeships are not dead', 8 February 2006) the author reports on a statement by the Minister of Labour where he said he never repealed the sections in the Manpower Training Act that pertains to apprenticeships and further asked firms to "*please take on apprentices*" as this "*the right thing to do*". In addition to this, most of the Sector and Education Authorities (SETAs), offer the same grants for learnerships and apprenticeships. According to officials at the Department of Labour the Department of Trade and Industry also recently proposed that learnerships and apprenticeships be awarded the same BEE points. Such a step will certainly remove all skewed incentives to implement learnerships over and above apprenticeships when the latter is in fact more appropriate for the firm concerned.

In summary, therefore, the economic circumstances (slow growth and uncertainties about the future) that prevailed during the 1990s, coupled with the uncertain policy environment regarding workplace training, probably led to a decline in the number of workers trained at the workplace.

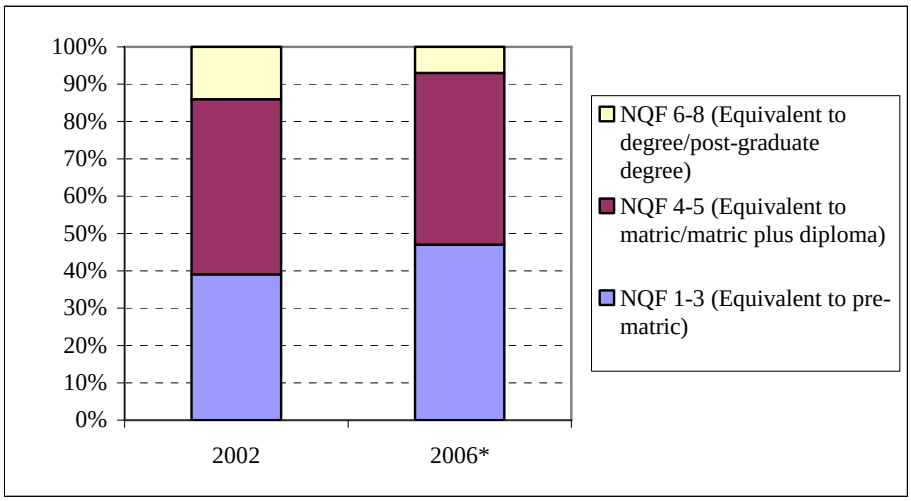
d. Middle-management Training

Despite the fact that firms cite skills shortages at middle-management level as a major concern very few firms are using learnerships to offer subsidised training for middle-management level. Kraak (2003) presents figures from the Department of Labour for March 2002 showing the distribution of the number of registered learnerships *programmes* across different NQF levels. About 39% of the programmes are targeted at NQF levels 1 to 3 (equivalent to pre-matriculation), while 47% of programmes are targeted at NQF levels 4 and 5 (matric and matric plus diploma). The remainder (14%) are for NQF levels 6 to 8 (equivalent to higher education degrees and postgraduate courses). In Figure 7 the 2002 estimates are compared with the latest figures from the Department of Labour (2006b). The figure shows a relative increase in the bias towards registering lower-level learnership programmes.

In order to effectively address skills shortages at the mid-career level more subsidised learnerships programmes should be registered at the NQF 6 to 8 levels. This requires no change in the design of the learnership system – the system is already equipped to deal with higher-level learning. It merely requires changing the mindsets of training providers, firms and SETAs so that the learnership system is not only seen as entry-level training. It may even require a change in the mindset of employees,

many of whom regard learnerships as beneath them. The various stakeholders, including SETAs, firms and educational institutions should work together towards developing and implementing suitable and appropriate higher-level learnership programmes that would gear firms towards training future managers.

Figure 7: Registered learnership programmes by NQF category, 2002 and 2006



Source: Kraak (2003) and Department of Labour (2006b).

Note: These are the proportions of programmes registered, not learners. The figures for learners are not available at NQF level.

e. Other Factors: The Brain Drain and Employment Equity

The brain drain has also had a huge impact on manufacturing, construction and mining industries, especially in engineering-related fields. In an online article published by the South African Institution of Civil Engineering (Lawless, 2006) the author estimates that the industry had lost approximately 6 000 educated and trained staff who have graduated since 1963. A "*large percentage*" has emigrated, while the rest have either taken early retirement or moved into other jobs. Ironically the author estimates that between 3 000 and 6 000 civil engineering professionals will be needed in the next few years to match the demand for skills driven by large projects such as Gautrain, the Soccer World Cup 2010, expansion at Eskom and Transnet.

Another interesting observation by Lawless (2006) is about the age distribution of civil engineering professionals in South Africa. It shows a large group of experienced engineers in their late forties and older. In contrast there are insufficient numbers of mid-career staff to carry out the bulk of production. The author notes that in the rest of the world, older more experienced workers are being retained by raising the retirement age, while at the same time increasing the number of young people in training. Emigration and early retirement of experienced mid-career workers is certainly impacting on productivity and output in South Africa. A recent report published on www.fin24.co.za ('Eskom in for a skills shock', 8 March 2006) suggested that 75% of Eskom workers surveyed identified the staff shortages and inappropriate skills as the main reasons behind the electricity supply crisis. One of the banks interviewed mentioned specifically the huge problems they had with retaining experienced middle-management staff members, many of whom emigrate or set up their own businesses in South Africa.

3.6.3 Explaining the Skills Deficit

a. Quality of Primary and Secondary Schooling

The majority of firms identified low quality primary and secondary school education as a major factor behind the labour market problems in the South Africa. The poor quality of teachers and the low number of passes in matric mathematics and science was frequently raised as something that needs urgent attention. The transition from rural schools to tertiary education and the working environment is often daunting to people from disadvantaged backgrounds. This explains high drop-out rates at tertiary institutions, poor performance during formal job interviews and the inability of disadvantaged individuals to adapt to the working environment. Schools, and to large extent tertiary educational institutions, are also failing in the provision of proper career guidance despite well-publicised facts about poor job prospects for students studying in arts, humanities and the social sciences.

The quality of education needs to be addressed at a primary and secondary school level. School pupils need to be encouraged to follow mathematics and science as subjects. Career guidance councillors should educate them about the importance of these subjects. At the same time, the quality of teachers in these fields needs to be addressed through better training and remuneration packages.

In response to the slow progress in transforming and improving the schooling system, and especially mathematics and science teaching, a number of firms interviewed indicated that they are actively involved in school education. Firms invest in mathematics and science projects, while some fund of learning centres, computer laboratories and so on. Firms view such initiatives not only as corporate social investments but also long-term investments in their own firms as they will benefit from an increased supply of matriculants with passes in suitable subjects.

b. Quality of FET Colleges

The state of FET colleges, and particularly the quality of education and training provided at these institutions, is another concern. Some firms are of the opinion that the current FET system is not generating the quantity or quality of artisans that used to be produced under the old system of industry training boards. While major restructuring of the FET system has already taken place – recently 122 FET colleges were merged into 50 colleges, while a further R1.5 billion is being invested as part of the FET recapitalisation project – FET colleges have for too long been seen as ineffective and inefficient (Kraak, 2003).

The South African FET system currently accommodates three types of FET colleges, namely the general academic FET, the vocational FET and the industry-based FET. The general academic FET's offer "*a so-called 'whole' qualification consisting of exit level outcomes which schools will offer and which will no doubt form the basis for university entrance criteria*" (Papier, 2006:6), while the vocational and industry-based FETs are more practically oriented. As with the move from apprenticeships to learnerships the college education system also appears to be moving away from a pure vocational training model to what some would term a more 'balanced' vocational and academic training model, driven by a need to educate people for the modern so-called 'knowledge-based learning society' (Papier, 2006). There are two important issues here.

Firstly, broad education ensures inclusion in this knowledge society and deals to some extent with complaints from employers about young people that leave education without a balanced education that enables them to function in the workplace. However, the new vocational qualifications on the NQF may be a cause for concern for FET colleges who in the past have been training explicitly for industry. The additional educational requirements are potentially taking study and teaching time away from pure

vocational training. As Papier suggests, "*… it may well be that FET qualifications will again neither satisfy the demands of the workplace, nor the requirements of Higher Education*" (2006:6). The realities in South Africa are that young people need to acquire technical skills that would make them workplace ready and more employable, but at the same time softer skills are also lacking. This presents a major dilemma and challenge to the FET sector. Perhaps the greatest challenge to the FET sector is regaining the trust of industry.

A second is a quality issue. Many of the learnerships currently in place are being managed and run by private industry-based FET colleges. A number of firms interviewed indicated that they have gone the route of applying for accreditation as a training provider, either due to a lack of faith in the public education (FET) system, or because they felt that they could provide better quality and more appropriate training themselves. Smith et al. (2005:559) find a similar trend among the sample of firms and learners interviewed by them "*[d]espite massive efforts in South Africa to transform public … FET colleges*". Many of the large firms obviously have the capacity, economies of scale and experience to offer training. Whether this training can be offered at a lower cost than the cost of outsourcing the service is unclear. Either way, the perception of firms is that they can provide higher quality, more appropriate practical training than FET colleges that caters for a wide variety of firms.

c. Quality of Education at Tertiary Institutions and Functional Illiteracy

Another general concern related to the quality of education offered at tertiary institutions. This, many felt, is driven by the strong focus on enrolling large numbers of students rather than focusing on the quality of education. Firms felt that educational subsidies at tertiary institutions should be based on a combination of student numbers and quality rating of the institution or the qualifications offered rather than the throughput rate as is presently the case. The current subsidisation system is creating the wrong incentives for educational institutions. It is also important that these institutions limit enrolment in degree or diploma courses with poor employment prospects. Poor academic performance of students (discussed in section 3.4) also relates to high functional illiteracy among students and poor soft skills. Tertiary educational institutions should focus on bringing soft skills, entrepreneurial skills and communication skills on board as part of bridging courses for students.

4. Policy Options

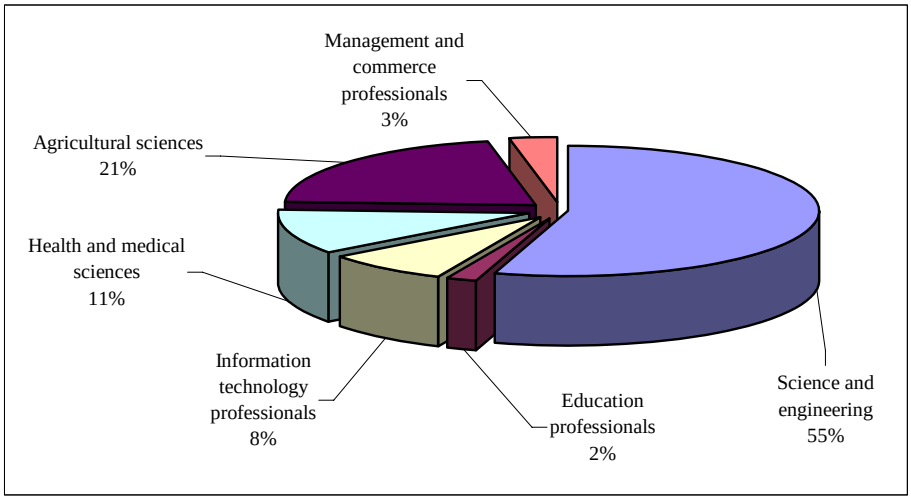
4.1 On Skills Shortages and Vacancies

4.1.1 Immigration Service Centre

Some of the short-term solutions proposed to deal with the skills scarcity problem include rehiring early retirees, assisting and encouraging South Africans living and working abroad to come back and sourcing foreigners with relevant scarce skills. The latter policy option has enjoyed the most media coverage in recent months. A scarce skills list published by the Department of Home Affairs in February 2006 contains 56 different occupation types and sets a quota of scarce skills that may be sourced from abroad at 46 500 (Department of Home Affairs, 2006). Figure 8 shows how this quota is allocated across different broad occupation categories. 55% of the jobs are in science and engineering, thus reflecting the critical shortages in this broad occupational category. Agricultural scientists make up 21% of the total, while occupations in the health and medical sciences account for 11%. The rest is distributed between people with Information Communication Technologies (ICT) skills (8%), management and commerce skills (3%) and the educational profession (2%). The quotas are only applicable to foreigners with at least five years relevant experience. This ensures that the importation of skills does not impact on South Africans competing for entry-level positions (graduates).

An important provision attached to the sourcing of skills from abroad is that the foreign recruit should be employed in a position where he or she can act as a mentor or coach for young entry-level workers in the firm. Various other such scarce skills lists have been published recently, and a substantial literature exists around the methods used to identify scarce skills. These include lists by the Human Resources Development Council (2003), the National Advisory Council on Innovation and the Department of Science and Technology (2003) and the Human Science Research Council (2003) (surveyed by Powell and Groenmeyer-Edigheji, 2006). Most include engineers, artisans and technicians, while occupations such as educators and academics, scientists and biologists, and people with skills in the area of Information Communication Technology (ICT) are also prominent.

Figure 8: Composition of scarce skills quotas across broad occupation categories



Source: Department of Home Affairs (2006).

The shortage of experienced, skilled employees, however defined, requires a bolder and more efficient immigration policy. Currently the turnaround time and associated bureaucratic inertia around immigrant worker applications makes this particular labour market intervention operationally inefficient In addition, it remains a moot point whether the list identified by the Department of Home Affairs is in fact an exhaustive and accurate representation of skill shortages in the domestic economy. Given this we propose that an *Immigration Service Centre* for large, established companies be set up. In the first instance, to avoid second-guessing firms on their labour demand needs, it is proposed that the Department of Home Affairs list be viewed only as a guideline for skills in need. Secondly, in order to obviate the institutional inefficiency of such a centre, such an immigration service should guarantee the processing of all immigration paperwork within a month, with all due diligence around the specific occupation in need, being undertaken within this period.

4.1.2 Middle-management Training

The sourcing of skills from abroad should be seen as a short-term measure to alleviate current shortages. In the longer run the ideal should be to train South Africans for these positions. At present learnerships are almost entirely focused on the lower NQF levels. This probably has to do with the fact that the NSDS is fairly explicit in suggesting that the unemployed youth are particularly vulnerable and hence a special target of the NSDS – as reflected in the higher subsidies for unemployed learners.

As pointed out in section 3.6.2 the irony about workplace training is that despite the severe skills shortages at middle-management level few firms are using learnerships to provide training at the higher NQF levels. In fact, as shown in Figure 7 the proportion of learnership programmes at the NQF 6 to 8 levels has actually declined since 2002. The learnership system is already equipped to deal with higher-level learning, and nothing prevents firms from utilising it as a way of providing subsidised training for skilled workers as well. As noted previously, the various stakeholders, including SETAs, firms and educational institutions should work together towards developing and implementing suitable and appropriate higher-level learnership programmes that would gear firms towards training future managers, and ultimately targeted at where the shortages currently exist.

4.1.3 Restructuring and Marketing of FET Colleges

A number of possible policy options regarding FET colleges present themselves. Hopefully these, together with the FET recapitalisation project, will be beneficial to standards and quality of training and education at FET colleges. This process should be monitored closely to ensure an optimal outcome. Some specific policy issues include:

- The move towards ‘whole education’ (see section **Error! Reference source not found.**) is driven by the need to ensure inclusion in the knowledge society, but it is also crucial that industry standards are met as far as firms’ expectations of practical knowledge and experience is concerned. This requires a process of quality control as well as regular consultation with industry about the curricula at FET colleges.

- Support from industry is crucial. Many firms have applied for accreditation as training providers and opt to conduct learnerships and apprenticeships themselves rather than outsourcing this to FET colleges or other academic institutions. This is a reflection of the distrust of the private sector in public training at present, which poses a threat to the credibility and future of the FET system.

- Perhaps a 'soft' recommendation, but one we feel that is vital, revolves around the fact that FET colleges are viewed within the African community as a second-best option for post-matric training. Hence, a key policy intervention would involve marketing FETs in African communities, and in particular repositioning them within these communities as institutions offering valuable and highly marketable skills. The severe shortage of artisans reported consistently by manufacturing firms, reinforces the need for this intervention. Corporate financial and logistical support could be considered for such a marketing campaign.

4.2 On Education and Human Capital

4.2.1 Addressing Poor Quality of School Outcomes

Firms lamenting the poor quality of schooling leads to two short-term solutions, which we believe can be facilitated through JIPSA. These are:

- Greater funding of career guidance services that are offered either at schools or off-site. These will prove invaluable in inculcating the importance of mathematics and science amongst learners, which firms believed is not fully appreciated by young people.

- The restructuring of educators' remuneration packages (currently under negotiation between the DoE and SADTU) on the basis of scarce skills. Hence we would expect that through such a reallocation, science and mathematics educators for example, would be remunerated more than other educators.

4.2.2 Restructuring State Subsidies for Tertiary Institutions

The mismatch between labour demand and supply as a function of problems with supply of labour through tertiary institutions is well known. We propose the following short-term solutions:

- That the current state subsidy system, biased heavily in favour of throughputs, should be restructured to include a (regularly reviewed) ranking of the quality of the institution and an 'employability' criterion. Institutions ranked as high quality ones which, through their certification, manage to secure employment for most of their graduates, are therefore likely to attract the largest proportion of the subsidy.

- A special dispensation, *outside of current funding envelopes*, should be secured to support tertiary enrolment in areas where there are skills shortages. Again, employers should define where these shortages exist.

4.3 On Workplace Training

4.3.1 Increasing the Number of Learners

The one substantive, and fairly unique, result to emerge from the survey is that in many cases firms are placing *existing* employees on learnerships. Put differently, learners are individuals that firms would have hired anyway or in fact have hired already. Hence, as an active labour market policy with the intention of inducing employment effects over-and-above market-driven increases, the learnership programme - at least from the evidence here and on this indicator- appears to have been unsuccessful.

We propose, again on the basis of suggestions from many of the firms, a more aggressive learnership programme that would in part:

- Increase the number of learners by 20% from its current estimated annual figure of 43 000 to approximately 51 600 learners per annum. Many of the firms in the survey had indicated that they could possibly increase the number of learners, provided that the state covered all the costs of the additional learners.

- Hence, relatedly we propose that the idea of a marginal subsidy is explored further as outlined and explained Box 2. The basic idea is that the state finances the marginal cost of taking additional learners over and above the current intake. This is based on the apparent assumption that the current value of the subsidy per learner does not act as an incentive to take on learners, and hence learners represent people that would have been trained and employed in any event. A very rough figure indicates that the net cost-to-company for a learner (once the state subsidy and tax allowances are accounted for) is approximately R35 000 per annum. Ultimately then, this would entail, admittedly on extremely rough figures, a total financial commitment of R300 million, which in the context of overall skills development budget[29] falls within the expenditure limits (see section 1.1.8 in the appendix). It is clear that under the present conditions, where no 'above-equilibrium' employment is being generated, it may be an investment worth exploring.

4.3.2 Reinstating Faith in Apprenticeship Training for Manufacturing

As noted above skills shortages at the entry- or graduate level and those at the mid-career level are very different in nature. Many firms interviewed tended to agree that there are enough graduates coming through the education system, but that the quality of education and training is a concern.[30] According to Smith et al. (2005:540) South Africa, like many other countries including the United Kingdom (UK), Australia, Norway and New Zealand, based its learnerships system on a "*reinvented notion of apprenticeships*". Learnerships aim to provide workplace training by an accredited training provider by combining structured learning and workplace experience. The idea is that the training would culminate in a nationally recognised qualification.

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29 R1.8 billion from the NSF alone is being allocated to SETAs for strategic community level projects and for unemployed learners in learnerships. This excludes R3.1 billion received by SETAs in skills development levies.

30 This may not necessarily be true for university or university of technology-trained engineers. However, it seems to hold for technical workers trained at FET colleges.

While the main aim of learnerships is skills acquisition, it has also doubled up in South Africa as a type of employment or wage subsidy. The idea was that the financial incentives attached to learnerships would encourage firms to employ more workers, and that higher overall skill levels would increase the employability of workers in general, which would then indirectly lead to greater absorption. The perception among firms is that learnerships are (potentially) very effective in providing workers with the necessary skills and qualifications, with many firms indicating that their workers become more employable after completion of a learnership programme. However, given that a large number of firms simply put existing workers on learnerships, this suggests that learnerships are perhaps not as successful in terms of the absorption of more workers in the economy.

The adoption of learnerships, which, as explained earlier, initially seemed to imply the end of apprenticeships, introduced a lot of uncertainty about training in general. Workplace training for artisans and technicians was in the past based only on the apprenticeship system. The qualification attached to apprenticeship training is not necessarily SAQA accredited, which simply means that the qualification is not necessarily aligned with the 'transferable' NQF system. Qualifications are however generally recognised in respect of the *specific* trade. The training has a more practical focus and this is arguably more important given the nature of technical occupations. Learnerships actually incorporate artisan-type training but are attached to a SAQA recognised academic qualification. This has some benefits to the trainee, including transferability and recognition of the qualification, but it also introduces an administrative burden to the firm, relating mostly to the requirements of the assessment process.

During the interviews a number of firms, especially those in the manufacturing and mining sectors, complained about the added administrative burden brought about by the academic requirements of learnerships. Firms feel that their core business competency is training, not assessing the academic merit of a candidate's qualification. The more academic or theoretical approach is certainly appropriate for many of the occupations that were not previously covered by apprenticeships. This is especially true for occupations in the services industries, e.g. call centre operators or accounting clerks. However, it is not always appropriate for artisan-type training.

The apparent realisation among policymakers (see section 3.6.2) that apprenticeships are in some instances more appropriate or preferred by firms is a step in the right direction. As mentioned before, steps are being taken to 'bring back apprenticeships' and to restore firms faith in the future of apprenticeships. These include an announcement by the Minister of Labour that firms should continue to enrol apprentices and that he has no intention of repealing the relevant section of Act. Also, proposals are being considered to give apprenticeships the same status as learnerships in terms of grants receivable from SETAs as well as BEE points awarded for training people. A clear policy standpoint needs to be taken on the issue, as years of training may already have been lost due to the uncertain policy environment surrounding workplace training. This does not mean that learnerships should now be abandoned again in favour of apprenticeships. Learnerships have their merits in certain types of environments, just as apprenticeships suit manufacturing firms with a strong focus on providing practical workplace training for artisans that do not necessarily need a SAQA accredited qualification. Instead therefore, what is required, is a clear signal from the Department of Labour and its respective SETAs, regarding the relationship between learnerships and apprenticeships, with a view to ensuring that firms are equally incentivised to invest in both learners and apprentices.

4.3.3 Being Creative with Learnerships

Many firms have benefited from applying learnerships in 'non-traditional' ways. The learnership system is a flexible system that can be adapted to any type of SAQA accredited qualification. Some examples include:

- Management-level learnerships (see previous discussions, sections 3.6.2 and 4.1.2)
- Soft skills training (see section 3.5.3)
- Bridging courses to close the skills gap, e.g. accounting bridging courses and call centre or BPO courses (see section 3.5.3 and Box 1).

Not only do such creative applications address the graduate unemployment problem, but they may also solve many of the problems faced by employers with regards to middle-management vacancies, poor soft skills of graduates, and inappropriate qualifications among applicants.

4.4 Other Policy Issues

4.4.1 Promoting Bursary Schemes

Bursary schemes are utilised by many larger firms either as a corporate social investment or as a core part of the recruitment process. We propose here that the state sets up a bursary scheme in conjunction with firms, that would subsidise any *net additions* to their current pool of bursars. Hence, firms would be incentivised to increase their existing quota of bursars, as these could potentially be funded by the state. The state could of course build its own criteria into such a firm-based bursary programme, ensuring that equity goals and employment guarantees are secured. Firm-based bursary schemes have a number of distinct advantages. Firstly, it locates labour demand needs directly with firms, ensuring effectively that the institutions of human capital are supplying the required skills to the labour market. Secondly, the firm can become involved more directly in the education of the student in the sense that they can provide academic support and guidance as to subject choice – something in this model that the state would not need to pay for. Thirdly, firms can offer relevant practical experience to bursary holders by creating opportunities for vacation work – an in-built work experience programme. Finally, all this comes at a fairly low risk to the company given the contractual obligations of the bursar to work for the firm on completion of his or her studies. If poached by another employer the bursar would have to pay back the bursary.

4.4.2 Public Graduate Unemployment Databases

The DPRU has managed to secure two databases of unemployed young people. The first, from the Umsobomvu Youth Fund (UYF), contains more than 130 000 individuals, covering a wide spectrum of qualifications, including matric certificates, diplomas and degrees. The second database, is that provided by the South African Graduates Development Association (SAGDA), which contains a listing of some 2 500 unemployed individuals with post-matriculation qualifications. Currently, both databases are in an electronic form that is not user-friendly to potential employers – a survey response that was common with respect to the UYF database in particular. However, these two datasets do contain the raw elements for a nationally representative electronic storage facility of unemployed individuals. This presently does not exist and, arguably, would serve as the beginnings of a free service-based labour market information system for all firms in the economy.

Various proposals are made as to how the database and services associated with the placement of unemployed graduates can be improved are explored and outlined in the accompanying document entitles *Graduate Databases*.

5. Conclusions

A clear understanding of the nature and extent of vacancies or skills shortages in the economy may help us better understand the graduate unemployment problem. The South African manufacturing sector faces severe skills shortages in technical occupations such as artisans, engineers and scientists. In all sectors shortages of middle to senior management personnel was also raised as a concern. These shortages are viewed as critical constraints to accelerated growth in South Africa. The economy has entered a boom phase, fuelled by low inflation and interest rates, high real income levels and increased public investment expenditure. The danger is now that production cannot keep pace due to skills constraints, which may leave government's 6 per cent growth target a distant dream.

In addressing the shortages of skilled technicians, artisans, engineers and middle to senior management, government has proposed a policy whereby immigration laws and the work permit application process will be greatly simplified and relaxed in an effort to make it easier for people who posses critical skills to enter and work in South Africa. This is an important short run initiative and if utilised properly by firms may alleviate some of the most critical skills shortages in the short term. At the same time, however, it is equally important to curb the loss of critical skills through emigration through aggressive retention strategies.

In the longer run it is crucial to develop new skills internally. The restructuring of the FET college system will hopefully improve the quality of technical training, although many have raised concerns about the new proposed curricula. Proper consultation between the authorities, educational institutions and industry may ensure that public education and training is appropriate and quality-driven. Workplace training learnerships and apprenticeships, both of which have been in place some time, are generally viewed in a positive light by firms and should be expanded and improved even further. While there are some concerns around the efficiency and bureaucratic processes within the SETAs, it is equally important that firms buy into the process of training and developing internal talent. Various policy ideas around the implementation and use of learnerships and apprenticeships were raised in this report, including learnerships for middle-management training, options for creating incentives for firms to increase the intake of learners, and reinstating the faith in the apprenticeship system as an alternative to learnerships where appropriate. If the economy is successful in enrolling more learners it may potentially have a large impact on employment.

As far as graduate unemployment is concerned the problem has been identified as a skills deficit. Poor quality education, inappropriate qualifications and poor soft skills is causing firms to hire fewer graduates than they would have had the quality of these labour market entrants been higher. Reforms have to start at primary and secondary school level with proper education and good quality teachers, especially in the areas of mathematics and science. Career guidance and incentives to students (or academic institutions) to enrol in the right areas of study are crucial. Learnerships may also be used to close the skills gap, either through soft skills training or bridging courses that provide not only workplace readiness training but also retrain graduates in the right study areas. While these are all measures to directly impact on graduate employment, or at least the employability of graduates, it is quite likely that graduate employment levels will also benefit indirectly from skills acquisition at middle to senior management level. Once fewer vacancies exist and management level firms will be able to absorb more graduates as well as skills and experience will be available for training of young recruits.

Ultimately then, the above study, through gleaning information from nationally representative statistics and a small, but significant sample of firms, has attempted an overview of the graduate unemployment issue. It is clear that in both our prognosis of the problem and a select, but hopefully, focused set of proposals that much still needs to be done to resolve what is probably one of the key constraints to long-run growth in the South African economy.

6. References

ASGISA (2006). "A Catalyst for Accelerated and Shared Growth - South Africa. Background Document." Media Briefing by Deputy President Phumzile Mlambo-Ngcuka. 6 February 2006.

Babb, S. and Meyer, T. (Eds.) (2005). *Perspectives in Learnerships: South African Case Studies*. Knowres Publishing (Pty) Ltd: Randburg.

Bell, T. and Cattaneo, N. (1997). "Foreign trade and employment in the South African manufacturing industry," *Occasional Report*, No. 4. Employment and Training Department, International Labour Organisation, Geneva.

Bhorat, H. and Hodge, J. (1999). "Decomposing Shifts in Labour Demand in South Africa," *South African Journal of Economics,* 67(3): 348-380.

Bhorat, H. and Oosthuizen, M. (2005). *What Have We Learnt about the South African Labour Market?*: Development Policy Research Unit, University of Cape Town.

Burger, R. and Woolard, I. (2005). "The State of the Labour Market in South Africa after the First Decade of Democracy," CSSR Working Paper No. 133. Centre for Social Science Research, University of Cape Town.

Chandra, V., Moorty, L., Rajaratnam, B. and Schaefer, K. (2001). "Constraints to Growth and Employment in South Africa. Report No. 1: Statistics from the Large Manufacturing Firm Survey," *Informal Discussion Papers on Aspects of the Economy of South Africa,* No. 14.

Cosser, M., McGrath, M., Badroodien, A. and Maja, B. (2003). "Technical College Responsiveness. Learner destinations and labour market environments in South Africa," *Research Programme on Human Resources Development*, HSRC Research Monograph. Human Sciences Research Council.

CSSR and SALDRU (2002). *Cape Area Panel Study*: Centre for Social Science Research and South African Labour and Development Research Unit, University of Cape Town.

Department of Education (2003). "Education Statistics in South Africa at a glance in 2001." Department of Education, Pretoria. June 2003.

Department of Finance (1996). *Growth, Employment and Redistribution. A Macroeconomic Strategy,* Pretoria: Ministry of Finance.

Department of Home Affairs (2006). "The National Scarce and Critical Skills List," *Government Gazette,* No. 28480.

Department of Labour (2005). "National Skills Development Strategy (NSDS) Implementation Report: 2004 - 2005." Department of Labour, Pretoria. Available online at www.labour.gov.za.

Department of Labour (2006a). "National Skills Development Strategy (NSDS) Implementation Report: 2004 - 2005." Department of Labour, Pretoria. Available online at www.labour.gov.za. Unpublished.

Department of Labour (2006b). "Registered Learnerships by SETAs." Department of Labour, Pretoria. Available online at www.labour.gov.za. 27 January 2006.

Dunne, P. and Edwards, L. (2005). "Trade and Poverty in South Africa: Exploring the trade and employment linkage." Paper prepared for the Trade and Poverty Project. Available online at www.cssr.uct.ac.za/saldru.

Edwards, L. (2001a). "Globalisation and the skill bias of occupational employment in SA," *South African Journal of Economics,* 69(1): 40-71.

Edwards, L. (2001b). "Trade and the Structure of South African Production, 1984-97," *Development Southern Africa,* 18(4): 471-492.

Hartzenberg, T. and Stuart, J. (2002). "South Africa's Growth Performance since1960: A Legacy of Inequality and Exclusion," *Report prepared for the AERC Growth Project*. University of Cape Town.

HSRC (2005). "Further Education and Training: Quo Vadis," *SAQA Bulletin,* 7(1): 5-46.

ILO (2004). "Global Employment Trends for Youth." International Labour Organisation. Available online at www.ilo.org. August 2004.

JSE/Liberty Life (2006). "JSE/Liberty Life Investment Challenge." Available online at http://university.jse.co.za/Company/top40companies.htm. 10 March 2006.

Kingdon, G.G. and Knight, J. (2000). "Unemployment in South Africa: The Nature of the Beast." *Paper presented at the Trade and Industrial Policy Strategies Annual Forum*, Muldersbush.

Koen, C. (2003). "The Contribution of Technikons to Human Resource Development in South Africa," DPRU Working Paper No. 03/80. Development Policy Research Institute, University of Cape Town. August 2003.

Kraak, A. (2003). "HRD and the Skills Crisis." In *Human Resources Development. Education, Employment and Skills in South Africa*, edited by Kraak, A. and Perold, H. Pretoria: HSRC Press.

Kraak, A. (2005). *An overview of South African human resources development*. HSRC Press: Cape Town.

Kraak, A. (2006). "The challenge of the 'second economy' in South Africa: The contribution of skills development," *Journal of Vocational Education and Training,* 57(4): 429-452.

Lawless, A. (2006). "Number & Needs. A wake up call to address the capacity crisis in SA civil engineering," published online at www.civils.org.za. South African Institution of Civil Engineering.

Lewis, J.D. (2001). "Policies to Promote Growth and Employment in South Africa." World Bank, Washington.

Mlatsheni, C. (2005). "The youth labour market: What does is take to succeed?," *Mimeo*.

Moleke, P. (2005). "Finding work. Employment experiences of South African graduates," *Compiled by the Employment and Economic Poliy Research Programme*. Human Sciences Research Council.

National Treasury (2005). "Medium Term Budget Policy Statement." National Treasury, Pretoria. Available online at www.finance.gov.za. October 2005.

National Treasury (2006a). "Budget Review 2006." National Treasury, Pretoria. Available online at www.finance.gov.za.

National Treasury (2006b). "Estimates of National Expenditure." National Treasury, Pretoria. Available online at www.finance.gov.za. February 2006.

Oosthuizen, M. (2005). "The Post-Apartheid Labour Market: 1995 -2004." Development Policy Research Unit, University of Cape Town.

Papier, J. (2006). "FET Seminar: Youth Unemployment and Education in South Africa." *Paper presented at the Harold Wolpe Memorial Trust and Inset Providers Coalition (IPC) 49th Open Dialogue Event.*, 2 February 2006, Cape Town.

Pauw, K. and Edwards, L. (2003). "Evaluating the General Equilibrium Effects of a Wage Subsidy Scheme for South Africa." *Paper presented at the Biennial Conference of the Economic Society of South Africa*, 17 - 19 September 2003, Somerset West.

Pauw, K., McDonald, S. and Punt, C. (2004). "The Welfare Impacts of Domestic and International Agricultural Efficiency Gains: A South African Case Study." *Paper presented at the Inaugural Symposium of the African Agricultural Economic Society*, 6 - 9 December 2004, Nairobi, Kenya.

Powell, L. and Groenmeyer-Edigheji, S. (2006). "The Identification of Scarce and Priority Skills. An Introduction to the Methodological and Conceptual Challenges Involved," *Report prepared for the Accelerated and Shared Growth - South Africa (ASGISA) initiative.* 6 February 2006.

Republic of South Africa (1981). "Manpower Training Act, No. 56 of 1981." Pretoria.

Republic of South Africa (1996). "National Youth Commission Act, No 19 of 1996." Pretoria.

Republic of South Africa (1998). "Skills Development Act, No. 97 of 1998." Pretoria.

Republic of South Africa (1999). "Skills Development Levies Act, No. 9 of 1999." Pretoria.

Robinson, V., Gedye, L., Mabanga, T. and Tabane, R. (2005). *Shortage Confusion Mismatch Surplus*.

SABC News (2005). *Database for graduates launched*.

Smith, M.J., Jennings, R. and Solanki, G. (2005). "Perspectives on Learnerships: a critique of South Africa's transformation of apprenticeships," *Journal of Vocational Education and Training,* 57(4): 539-564.

SSA (Various). *Labour Force Survey (Various),* Pretoria: Statistics South Africa.

Vink, N. (2000). "Farm profitability and the cost of production inputs in South African agriculture," *A Report to the National Department of Agriculture*. http://www.agriinfo.co.za.