

## Skills Misalignment and Its Implications for Sustainable Economic Growth in South Africa

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**ABSTRACT** The main objective of this paper was to evaluate the skills demand and supply pipelines in the context of South African economy. The research adopted exploratory characteristics in South Africa in relation to accelerated economic growth. The research adopted exploratory research method. The paper analysed secondary data collected from participating institutions of higher learning to arrive at its conclusions. The paper established a significant misalignment in the supply and demand sides of skills pipeline. There is also a gradual shift in the enrolment balance from the Social Sciences and Humanities in favour of Business, Commerce and Management without a corresponding shift in the field of Science, Engineering and Technology as proposed by the National Plan for Higher Education. The practical implication of this is that it may be difficult for South Africa to achieve its current drive for sustainable economic growth if the status quo is not urgently addressed.

### INTRODUCTION

Skills shortage has been generally and consistently identified as the single most important constraint to accelerated and sustainable economic growth in South Africa. The government is targeting an annual economic growth rate of 7%, but economic analysts and experts have predicted that government may not be able to achieve this objective unless there is a remarkable transformation of the skills profile presently obtainable in the country's labour market. This has necessitated a growing concern that a skill crisis was becoming a 'binding constraint' on development, prompting new government interventions prioritising ways to address skills shortages and mismatches. Alluding to the nature and depth of skills problem in the country, the Deputy President of South Africa, Kgalema Motlanthe noted that "there are certain gaps that need to be addressed and the skills that are required by the economy. The critical element we are trying to address is the mismatch of the skills that we are producing now versus the demand from the economy" (Motlanthe 2010). Motlanthe's assertion captured the inherent misalignment in the skills supplied by the institutions that are

charged with the responsibility of producing the necessary workforce for the country's economy on the one hand and those skills that are demanded for sustainable economic growth on the other hand.

Gerber et al. (cited in van der Walt 1999: 176) argues that "human resources hold the key to the economic and social problems that South Africa is currently experiencing. South Africa therefore has no alternative but to accelerate development of its people in order to maintain and grow its economy". Reiterating the skills problem in South Africa further, Stokes (2010: 17) submits that "while our global peers worry about dwindling order books and a severe slowdown in economic activity, South Africa's private sector executives singled out skills as the biggest obstacles to business growth." This compelling evidence has therefore made it imperative for the labour and education authorities in South Africa to fashion out an appropriate skills development and training strategy that will produce not only the quantity, but most importantly the quality of the workforce that is required to drive sustainable socio-economic development in the country.

### Skills Development and Training Strategy

South Africa as a developing country in the past decade has undergone a significant trans-

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formation in its national human resource development framework. In order to address the skills problem in South Africa, the government initiated a broad based Human Resource Development Strategy (HRDS) for a period of five years (2005 – 2010). Similarly, The Joint Initiative on Priority Skills Acquisition (JIPSA) was established (in 2006) as a component of the Accelerated and Shared Growth Initiative for South Africa (ASGISA) where government identified six issues which obstruct economic growth. Skill shortage was a prominent impediment identified by ASGISA thus JIPSA was initiated to address this deficiency.

Other strategies adopted to deal with skills shortages include special training programmes, persuading South African professionals in the diaspora to return home, making use of retired skilled professionals and importing skilled immigrants where necessary. The JIPSA report for April to December, 2006 identifies professional skills in engineering, science, finance and management, as well as technical and artisan skills as scarce. The report further states that while the economy currently produces about 5000 artisans annually, research suggests that at least 12 500 artisans should be produced annually over the next four years (2007 – 2011) to meet rising demand. Skills shortages in the construction and engineering industries in particular, unless addressed urgently, risk slowing down South Africa's R400-billion infrastructure programme for the period 2007 to 2009, the report concludes.

### **The Paradox of Skills Shortages and Graduate Unemployment**

A critical paradox facing South Africa is skills shortages in the face of growing unemployment. Given the huge number of unfilled positions and the future skills requirement in the country, it is paradoxical to note that unemployment rate in South Africa is reaching an alarming height of 24.5% (Statistics South Africa 2009). Reporting Borhat (2007) states that there were 200,000 unemployed graduates in South Africa (in 2005) with 40,000 of them having university degrees. According to Pauw et al. (2006), unemployment rate for individuals with tertiary education increased by approximately 55% from 6.6% in 1995 to 9.7% in 2005. In 2005, there were 165 000 unemployed holders of diplomas and certificates

with 36 000 having university degrees. Consistent with this report, Laing (2008: 3) notes that "the concentration of unemployment among the youth means that the unemployed have had rising levels of education. Of particular concern has been the rapid increase in unemployment levels for people with tertiary qualifications, especially diplomas". Other studies (for example, Moleke 2005; Oosthuizen 2006; Oosthuizen and Borhat 2005) have documented evidence to support the existence of a pool of unemployed graduates, many of them 'Africans'. Borhat (2007: 8) attributes graduate unemployment to the type of qualifications they had as well as their fields of study.

Supporting the literature cited above, Gwede Mantashe (cited in Hill 2007) states that many Black students pursued degrees in the arts, while majority of White students pursued degrees in high-demand fields such as engineering. This is also consistent with the assertions by Mosidi Nhlapo as reported in Hawkey (2010: 7) that many African students chose to specialise in arts and humanities, fields that tended to have lower managerial and professional prospects. This development, Borhat observes, is responsible for the situation where 85% of unemployed graduates were Blacks with one-quarter of all Black graduates unable to find work (Hill 2007). The evidence presented so far can only suggest one reality - misalignment - in the current education system and the workplace demand (demand-supply side interplay). While labour market suggest high demand for technical graduates such as engineering and technology, health sciences, management, accounting and others, the enrolment reality and graduate outputs in higher institutions of learning reveal that most students (particularly blacks) registers for courses in the social sciences and humanities which are less acute. These fields do not prepare them for the professions thereby accounting for their inability to get jobs unlike their counterparts in critical fields of shortage.

### **The Skills Debate**

Research by the Development Policy Research Unit (DPRU 2007) shows that universities seem to focus on how many students they can enrol without taking into consideration the relevance of their degrees to the skills demanded by the economy. Furthermore, Barnes (2009: 39)

argues that “the problem commonly referred to as a ‘skills shortage’ in South Africa is itself a nebulous concept, which encapsulates several specific issues – shortages in some cases (for example, engineering and some technical skills), but skills surpluses in other areas (such as the social sciences)”. Stated differently, there is significant ‘mismatch’ between the skills sets being generated in local tertiary education institutions and the skills required for business. This has necessitated the approval of a strict enrolment and performance targets by the Department of Education (DoE) for higher education institutions to produce more job-ready graduates. The plan requires most institutions to limit their intake in the humanities – which include arts and social sciences – in favour of fields such as business, engineering and technology (Govender 2007: 8). A sum of R4-billion was injected into higher education institutions to improve infrastructure and increase the number of graduates with a capping in humanities nationally to around 196,000 (Govender 2007: 8).

The total number of social science graduates shot up from 253,431 in 1994 to 548,383 in 2004 (Govender 2007). Current attempts by the Department of Higher Education to regulate student intake in favour of certain fields of study is therefore a general agreement that the demand for certain skills required to develop the domestic economy is far in excess of current supply. “The skills inappropriateness and inadequacy of the South African workforce has been one of the factors hindering its economic success in the global economy” (Barnes 2009: 39). This, in Barnes’ opinion “requires an up to date linkage of education and training to meet the market demands and avoid mis-skilling (imparting skills that are in excess in society when there is a serious lack of skills that are in demand) and consequently unemployment”. Barnes therefore concludes that the upgrading of the supply characteristics of the new labour market entrants is pivotal in this context.

However, contrary to the opinions articulated by different authors cited in the foregoing literature, Dias (2005) drawing from statistical figures of unemployed graduates concludes that the problem is not necessarily with the qualifications of graduates being inappropriate, but the labour market’s failure to absorb the number of new entrants with tertiary qualifications especially if this is viewed in light of the growth in employment levels by sector and skills category.

Hence, Dias cautions that improving the education qualifications of the unemployed is not a guarantee for employment since the labour market seems saturated. Supporting Dias, Standing et al. (2000: 158) posit that “one cannot presume that if all those without secondary schooling were provided with it and if all those without a skills required by the economy were provided with one, that unemployment would fall dramatically”.

Extending the skills shortage debate, Jimmy Manyi, former chairman of the Commission of Employment Equity (cited in Khumalo and Mmope 2007) and now the Director-General of the Department of Labour and also Chairman of the Black Management Forum (BMF) dismisses the entire argument surrounding skills shortages as an “urban legend based on racism”. However, Eddie Durant (also cited in Khumalo and Mmope 2007) promptly declared Manyi’s assertion as an “emotional and absurd outburst”. Manyi’s position regarding skills shortages has also been opposed by his own constituency, BMF. According to Lot Ndlovu (a past chairman of BMF) in a SAFM Radio interview (on Friday, 1 October, 2010), Manyi’s position was out of tune with the reality given the present state of skills shortage and migration of highly skilled people out of the country. Deloitte, a human resource development consultancy, found in a survey on 300 South African companies that an estimated 76% of them are experiencing difficulties in recruiting suitably qualified affirmative action candidates. Says Louise Marx, Deloitte’s human capital manager: ‘A lot of companies have to train internally because they have quotas to meet. To my mind the skills shortage is not an urban legend’ (Mabotja 2009).

Whichever direction we look at the problem, it will be difficult to justify the arguments of (Dias 2005, Standing et al. 2000, Jimmy Manyi for example) in the face of subsisting empirical evidence where certain vacant positions (engineering, medicine, financial management for example) could not be filled due to non-availability of appropriately qualified job candidates whereas we maintain a pool of unemployed graduates in fields such as the social sciences and humanities. Moleke (2005) concludes that the skills mismatch in South Africa is an important part of graduate unemployment. One way of solving the problem, Koen (2003) suggests is through improvements in the responsiveness of labour supply to the characteristics of labour demand.

### Policy Intervention in Undergraduate Enrolment

Policy intervention by the Department of Higher Education and Training to regulate admission patterns in institutions of higher learning to reflect the current reality in skills demand is already manifesting some positive results. Pieterse (2009: 226) reports progress in shifting the balance of enrolment in HET institutions across the humanities, social sciences and education (HSSE), business, commerce and management (BCM) sciences, and science, engineering and technology (SET), as proposed by the National Plan for Higher Education (DoE 2001). The National Plan set a target to shift the balance of enrolments between i) humanities, ii) business and commerce, and iii) science, engineering and technology from 49%: 26%: 25% in 2001 to 40%: 30%: 30% respectively by the end of the decade (DoE 2001: 27). However, Kraak (2009: 5) contends that the DoE has never been able to test the usefulness of these policy objectives through drawing up detailed correspondences between specific academic programmes at particular higher education institutions and actual sectoral needs located in specific regions of the country. This 'policy gap', Kraak further contends, has had a negative effect, handicapping the ability of education and training institutions to offer courses customised to particular development trajectories or technology platform needs.

The proposal by the National Plan for Higher Education has, however, seen business, commerce and management graduates more evenly split between the various levels of qualifications. For example, there were 1,864 marketing, 1,416 personnel management, 1,894 other management, 12,267 accounting, 799 administration and 6,998 management graduates in 2005 across various universities and universities of technology, with a significant number of these obtaining postgraduate qualifications (Pieterse 2009: 226). This trend is also reflected in the graduation growth pattern of higher institutions of learning with concentration gradually shifting from the social sciences and humanities to business, management and commerce. The statistics of bachelor graduates from some of the universities analysed in Tables 1 – 7 from 2005 to 2008 supports this emerging trend. This is, however, still far from the projection of at least 270,000 of the country's estimated 820,000 students' popu-

lation at tertiary institutions to register for business and management degrees by 2010 (Govender 2007: 8).

**Table 1: Number of academic and professional undergraduate bachelor degree graduates at the University of Fort Hare**

Faculty	Year of graduation and number of graduates				
	2005	2006	2007	2008	Total
Education	319	354	285	77	1035
Law	-	85	118	131	334
Management and Commerce	229	204	248	313	994
Science and Agriculture	205	177	202	185	769
Social Sciences and Humanities	469	351	318	384	1522

Source: Planning Unit, University of Fort Hare, 2009

**Table 2: 2010 enrolment figures for academic and professional undergraduate bachelor degrees at the University of Fort Hare**

Faculty	No.
Education	941
Law	669
Management and Commerce	2563
Science and Agriculture	1739
Social Sciences and Humanities	2578

Source: Planning Unit, University of Fort Hare, 2010

**Table 3: Number of bachelor degree graduates at the Rhodes University**

Faculty	Year of graduation and number of graduates				
	2005	2006	2007	2008	Total
Education	62	56	62	66	246
Law	57	56	61	54	228
Commerce	313	313	334	310	1,270
Science	254	242	250	243	989
Humanities	536	577	639	552	2,304
Pharmacy	44	69	70	74	257

Source: Data Management Unit, Rhodes University 2010

The emerging shift in the enrolment pattern from the arts and humanities to management and commerce as contemplated by the DoE is also reflected in the career aspirations of prospective university undergraduates. Survey outcome of 12,204 Grade 12 learners in 288 schools across the nine provinces of South Africa by the Research Programme on Human Resources Development (HRD) at the Human Science Research

**Table 4: Number of bachelor degree graduates at the Nelson Mandela Metropolitan University**

Faculty	Year of graduation and number of graduates				
	2005	2006	2007	2008	Total
Education	655	528	337	-	1,520
Law	163	102	136	-	401
Business and Economics	596	735	745	-	2,076
Science	230	230	225	-	685
Health Sciences	269	311	212	-	792
Engineering, Built Environ. and IT	200	171	164	-	535
Arts	492	330	322	-	1,144

Source: HEMIS, NMMU 2010

**Table 5: Number of bachelor degree graduates at the Stellenbosch University**

Faculty	Year of graduation and number of graduates				
	2005	2006	2007	2008	Total
Education	407	250	263	251	1,171
Law	132	114	145	144	535
Economic and Management Sciences	1,318	1,444	1,374	1,354	5,490
Science	422	396	535	577	1,930
Engineering	227	267	265	251	1,010
Health Sciences	176	207	239	153	775
Military Sciences	54	77	68	77	276
Agricultural Sciences	131	244	275	257	907
Arts and Social Sciences	836	911	965	925	3,637

Source: Institutional Information Unit, Stellenbosch University 2010.

**Table 6: Number of bachelor and honours degree graduates at an anonymous University**

Faculty	Year of completion and number of graduates				
	2005	2006	2007	2008	Total
Education	592	554	565	499	2210
Law	267	346	268	305	1186
Management and Commerce	2158	2254	1833	1558	7803
Science and Agriculture	847	867	855	822	3391
Engineering	325	305	331	344	1305
Architectural studies	40	36	62	45	183
Humanities, Development and Social Sciences	1439	1730	1457	1412	6035
Medicine and Surgery	298	202	189	223	912
Health Sciences	245	293	293	291	1122
Pharmacy	62	74	63	61	260

Source: The University's Management Information Unit 2010

**Table 7: Number of bachelor degree graduates at the Tshwane University of Technology**

Faculty	Year of graduation and number of graduates					
	2005	2006	2007	2008	2009	Total
Engineering and Built Environment	332	376	467	453	544	2172
Economics and Finance	154	168	224	247	268	1061
Management Sciences	315	326	304	330	391	1666
Science	475	443	479	640	580	2617
Information and Communication	132	149	145	122	168	716
Humanities and Arts	1863	1388	999	881	865	5996

Source: Strategic Management Support Unit, TUT 2010

Council (HSRC) in 2001 indicated that vast majority of learners planned to study Business and Commerce at a HET institution (Cosser 2010: 47). For example, 32%, 23%, 15%, 11% and 2% of learners planned to study Business and Commerce, Engineering and other applied sciences, Health Sciences, Natural and Mathematical Sciences and Education respectively (Cosser 2010) while fewer than 10% of learners planned to pursue studies in other fields. Enrolment reality in institutions of higher learning however does not support career ambitions of learners as demonstrated above. According to Cosser (2010), in 2002 for example, the profile of headcount enrolments by study field revealed a wide disparity between learner preferences and student enrolments. Cosser demonstrates a significantly wide margin between the preference rates and actual enrolment in all fields of study except education. Two reasons can be attributed to this disparity. First, low pass (endorsement) rate in 2001 matriculation examination results. This suggests that out of the 309,061 Grade 12 learners who would want to enter the HET institutions in 2002, only 61,477 (20%) learners passed with endorsement and actually enrolled at a HET institution. Secondly, vast majority of matriculants who would want to pursue degrees in SET and Business and Commerce, for example, could not as a result of their failure in subjects such as mathematics and science which are basic requirements for enrolment in these fields of study.

According to the forecast of occupational demand for selected high-skills occupation (2001-2006) by Woolard et al. (2003), a total of

354,469 educators would be required to meet new and replacement demand. Similarly, the forecast puts the number of managers that would be required over the same period at 280,298. Since these are the two categories of professionals with the highest number of replacement demand (according to the forecast), Cosser (2010) suggests prioritisation of the recruitment and development of educators and managers by institutions of learning and public and private enterprises. To unblock the current skills shortages in the SET field, Woolard et al. (2003) suggest increasing the quality of mathematics and science education in the schooling system. Such quality enhancement, Woolard and colleagues reiterate, would, in the short-term, have the effect of limiting the number of SET entrants into HET system, but ultimately ensure that more students who enter SET programmes graduate with SET-related qualifications.

### **SKILLS DEMAND AND SUPPLY SIDE CHARACTERISTICS**

#### **The Demand Side Characteristics**

A research findings by the Centre for Development and Enterprise (CDE 2007) states that “shortages of skills is one of the most costly and troublesome issue affecting the management of South African businesses over the last two years”. In analysing the Natural Enterprise (1998) and World Bank (1999) surveys, Bhorat and Lundal (2002) found that 35% of all firms (894) surveyed in the manufacturing sector in South Africa identified inadequate skills as the most important reason for poor productivity. Again, survey by the Human Sciences Research Council (HRSC) cited by Pretorius (1999) shows that 76% of the 273 organisations surveyed did not have adequate skilled personnel.

Further to the above, 54% of the 113 organisations that employs engineers have problems in recruiting professionals – especially mechanical, electrical, civil and industrial engineers. The HRSC report also revealed shortages in IT professionals, accountants, economists, financial analysts, investment specialists, medicine, actuarial practitioners, managers and artisans. Concurring, Vicki Marais-Swanepoel, Managing Director of PAG (Harris 2010) believes South Africa’s skills shortage will determine the jobs of the future. Swanepoel reiterates that “key sec-

tors such as finance, engineering, project management and telecommunications always run short of skills, and the critical skills shortage in these sectors has been cited as a potential restraint of the attainment of the government’s growth goals.” Swanepoel further asserts that there will not be completely new positions instead, existing jobs will be in even greater demand. These jobs include the following:

- Engineers and project managers - “across all disciplines, all of which would require a degree and professional registration with the Engineering Council of South Africa”.
- Accountants - “specifically CAs, which require students to obtain a B.Com, B.Com Hons. and a CA(SA)”.
- ICT specialists - specifically development skills, requiring a diploma or degree. and
- Artisans - trade-tested artisans. “This is a key shortage as the practice of apprenticeship has fallen away.”

One way of finding a long term solution to skills shortages is by evolving a strategic skills development programme through education and training in FET colleges, HET institutions and enterprise training structures. However, the education system itself suffers from skills shortages. Research findings by the Organisation for Economic Co-operation and Development (OECD) and reported by Govender (2008) shows that while 20,000 new teachers are needed every year for the past two years (2006-2008), only 6,000 have qualified. Out of the 6,000 that qualified, only 4,000 entered the educational system while the rest leave South Africa to teach in UK, New Zealand, Australia and Dubai.

The Department of Education, in the face of shortage of teachers, has hired a recruitment agency to hire foreign teachers to mitigate the shortages. The strategy is however not yielding the desired results yet. According to Govender (2008), Limpopo Province, which desperately needs 1,600 mathematics and science teachers, has only succeeded in attracting 300 Zimbabwean teachers so far. The National Professional Teachers’ Organisation of South Africa (NAPTOSA) contend that the education department needs 10,000 more teachers every year for Grade 1 alone in order to reduce class sizes from 40 to 30 pupils in that grade (Govender 2008). In summarising the depth of skills shortages in the education system, SETA report (Govender 2008) describes shortages of teachers in the country as “nothing less than a crisis”.

Skills shortages at the tertiary education level (saddled with the responsibility of producing high level skills) are not very much different from that in the lower stratum of the education and training system. A Sunday Times survey report by Govender (2008:13) reveals that there are 600 vacant posts for professors and lecturers in five universities. For example, University of Johannesburg needs 142 lecturers and 28 associate and professors. University of Pretoria could not fill 127 posts since January, 2008. University of Cape Town has 75 academic vacancies while the University of Zululand needs 31 lecturers and 14 professors in commerce, law, science and education. The University of Limpopo is not faring better with vacancies for 182 academic staff in optometry, dentistry, pharmacy and accounting. All the academic disciplines where vacancies exist in the universities reflect professions where scarce skills are more pronounced in the economy.

### The Skills Supply Pipeline

In analysing the skills supply-side indicators, Havenga (2009: 179) notes that supply-side challenges manifest themselves to a large extent in the mismatch of skills, in so far as the characteristics of the available pool of potential employees do not satisfy labour demand regarding specific qualifications and skills. Havenga (2009) attributes this to the quality of training institutions and teaching capital, incorrect and/or inappropriate fields of study offered by training institutions, the lack and/or incompleteness of over-arching management information on the labour market, the inability of learners to make the transition from school to further education and training (FET) facilities, universities and universities of technology, as well as insufficient communication and collaboration between enterprises and training institutions. While approximately 25% of South Africa's budget is allocated to education, Havenga (2009: 179) citing The Presidency (2007) reveals that some schools still lack basic services, learning materials and teachers. According to the Democratic Alliance (DA 2006) report, a substantial number of South Africa's public school teachers are under-qualified and only 12% have a postgraduate degrees. It is against the background of the above revelations that the following section discusses skills supply-side indicators in South Africa.

### Further Education and Training Colleges

One important component of the South Africa's skills supply base is determined by the Further Education and Training (FET) colleges. FET colleges are regarded as another avenue for technical skills development at the intermediate level, with the former Minister of Education, Naledi Pandor describing them as having taken a central role in the delivery of priority skills needed in South Africa (Pandor 2007). The main objectives of the FET colleges, according to Cosser and du Toit (2002) include:

- Address the broad socio-economic issues of unemployment, income inequality and poverty alleviation by creating opportunities for young people and adults to further their education and consequently become employable.
- Create a vibrant, accessible and high quality education system that imparts the kind of skills and knowledge needed by South Africans to be productive and keep abreast with modern technology, that meets the country's pressing human resource needs. and
- Encourages lifelong learning and contributes towards development" (MacGregor 2006: 39).

Gamble (2004: 173) states that the FET sector in South Africa is touted as a major contributor to the reduction of intermediate skills shortages. Intermediate level knowledge and skills are best described as skills held by workers in the craft and artisanal trades (Gamble 2004) where knowledge is a combination of theory and practice, and the emphasis is on the practical rather than the conceptual.

One of the objectives of the HRDS is to secure "a supply of skills, especially scarce skills, within the Further Education and Training bands of the NQF, which anticipate and respond to specific skill needs in society, through state and private sector participation in lifelong learning" (DoE and DoL 2003). However, one of the problems confronting the FET colleges is their inability to align course offerings with the demand of industry (Mukora 2009). Unlike universities and universities of technology, where there are advisory boards with industry representation, there is no communication between the FET colleges and industry. As a result, skills produced

by these institutions are not aligned with industry needs.

Mukora (2009) notes that enrolment figures in the FET colleges suggest that enough artisans-type skills are being produced. Nonetheless, employers continue to report a shortage of qualified artisans. The explanation is that employers perceive FET outputs as not providing the kind of skills that they require in industry. The FET college problem, Mukora (2009) opines, arises because many learners who are currently undertaking college studies within the priority areas do so with insufficient or no access to workplace experience. With only limited opportunity or none at all for access to workplace experience, these learners learn theory as theory, mainly for examination purposes and access to further studies (Young and Gamble 2006). Supporting Young and Gamble, Mukora (2009) contends that the current FET colleges' learning outcomes are not aligned with industry needs, stressing that the quality of FET graduates is not what is required in the workplace.

#### **Shortage of Educators at FET Colleges**

The FET colleges which were established primarily to produce intermediate skills through programmes of study that are intended to respond directly to the priority skills demands of the economy are, like other institutions, faced with capacity problems. According to Kraak (2008), the public FET colleges is an important partner in the new skills development initiatives, especially in the area of curriculum development and training of learners are equally under-performing. Badroodien and Kraak (2006) observe that the curriculum development of learnerships is often out-sourced to private curriculum consultants and companies. Perhaps, the FET colleges are having capacity problems because the process of delivering learnerships in the colleges is generally regarded as time-consuming and challenging. This practice of out-sourcing curriculum development by the colleges could be counterproductive.

Kraak (2008) further states that the new curriculum activity should be integrated into the everyday workings of the college. Knowledge and experience developed in this area of academic exercise should contribute immensely to the in-house capacity building in the colleges instead of losing them out to outside consult-

ants. In addition, report from the DoE (2004) indicates that 8% of all teaching staff at FET Colleges had less than a diploma (Brown 2007). Of this percentage, there are 27% engineering staff with trade certificates (that is, engineering and utility studies), 55% with engineering trade certificate while another 27% had utility trade certificate (Brown 2007). This indication has caused industry to raise concerns about the quality and relevance of both the practical and theoretical training that learners receive at FET colleges, citing both the qualifications and workplace experience of the teaching staff as a concern (Didiza 2007).

Grawitzky (2007) reveals that a shortage of qualified technical instructors has emerged as an impediment to increasing training capacity. The same is also true for workplace assessors and mentors. It is increasingly becoming difficult to find trainers while assessors are poorly trained with training becoming too theoretical (Brown 2007; Peacock 2009 citing CDE). This, Brown (2007) notes, has resulted in 50% under-utilisation of state owned enterprises' (for example, Transnet, Eskom, and Metrorail) training facilities. In order for the FET colleges to fulfil its central vision of becoming a seamless interface between basic schooling and workplace learning, and a bridge to higher learning, Hensley, cited in Brown (2007) recommends that trainers in the industry and colleges require expertise in teaching and learning methodologies in addition to their professional qualifications.

#### **Higher Education and Training Band**

Higher education institutions play a major role in developing the higher level skills and knowledge base of the labour force that is essential for an innovative and growing economy like that of South Africa. Incentives for the allocation of strategic human capital are seen in enrolments in higher education and technical colleges and new government programmes and legislation designed to promote equity in society (Cunningham et al. 2006: 74). Accordingly, higher education in South Africa is being restructured to "meet the needs of an increasingly technologically oriented economy: to deliver ... research, highly trained people, and knowledge to equip ... society with the capacity to address national needs, and to participate in a rapidly changing and competitive global context" (Badsha 1999: 39). The role of HET in the South



Africa's education system, according to Burger (2009) is three-fold:

- *Human Resource Development*: mobilising human talent and potential through lifelong learning to contribute to the social, economic, cultural and intellectual life of a rapidly changing society.
- *High-level Skills Training*: training and providing person-power to strengthen the country's enterprises, services and infrastructure. This requires the development of professionals with globally equivalent skills, but who are socially responsible and conscious of their role in contributing to the national development effort and social transformation.
- *Producing, Acquiring and Applying New Knowledge*: national growth and competitiveness depend on continuous technological improvement and innovation, driven by a research and development system that integrates the research and training capacity of HET with the needs of industry and of social reconstruction.

The most important contribution that higher education institutions makes to the pool of skills in the labour market is the number of graduates they produce. In this regard, DoE (2001) report that the institutions of higher learning are becoming responsive to the human resources development needs of the country and producing more and more individuals with the skills and knowledge necessary to enter the labour market. The problem however, is the quality and demand for such skills and knowledge by the economy. Stressing this further, Mantashe (2009) asserts that "unless higher education adapts to the economic needs of the country, skills shortages will remain in the country". Mantashe (2009) further state that, not one of the former black universities has an engineering faculty, therefore, the education infrastructure is such that generates a surplus of social scientists. The implication of this is that skills shortages will persist in areas such as engineering and technology because the education and training institutions do not generate sufficient skills in very critical areas.

#### **Under-production of Educators**

A study by the Human Sciences Research Council (HSRC) reported by Cosser (2009) state

that only 3% of matriculation learners are interested in teaching as a profession. This poses serious concerns around the teaching profession as it means the country will run out of teachers in the next ten years. The report is consistent with Metcalfe cited in Govender (2008: 1) who assert that "we are not producing enough teachers although there is capacity in the system to do so". Hindle (2008) did not, however, concur with the positions presented by Govender. Hindle asserts that "there is enormous demand for the government's bursary scheme, suggesting that more teachers are being currently trained thus resulting in increase in the number of teachers in the near future". But an integrated report prepared by a consortium of experts for the Education Labour Relation Council (2005: 17) notes that "there has been a decline in students taking the Initial Professional Education of Teachers (IPET) qualifications, namely undergraduate Bachelor of Education (BE) and the Post Graduate Certificate in Education (PDCE)". The report further notes that "self-reported data from the Deans' Forum in 2004 indicated that education institutions are producing at best approximately 9,000 graduates of whom at least about 3,000 may already be practicing educators". Perhaps, the problem with Hindle's position may then lie with the graduation rate of these bursary beneficiaries, many of whom may completely drop out of school while some may change from teaching to other professional courses.

#### **Under-production of Engineering and Construction Graduates**

It is not only professional teachers that are being under-produced as noted by Govender (2008). There is gross under-production of construction and engineering graduates. According to Didiza (2007), the quality of learners entering construction and engineering programmes is also recognised as a challenge to skills development. Academic institutions point to the critical skills and attitudes of matriculants, irrespective of their matriculation passes, as often being unsuitable for the rigour required in engineering studies. This mismatch, Didiza (2007) notes, results in high drop-out rates, where students change their studies mid-stream, which subsequently translates into low turnout rates of engineering graduates.

Apart from the attitudinal factor on the side of learners, Didiza (2007) also assert that the capability and extent of preparedness of academic staff to instruct a new generation of learners is also a factor impacting on the production rate of engineers. Equally of concern is the quality and state of repair of teaching infrastructure at some of the institutions which influences the performance of learners with limited prior exposure to technological infrastructure (Didiza 2007). There is also a systemic dimension to the problem of acute shortage of practicing engineers. Didiza (2007) observes that some engineering programmes accredited by the Higher Education Quality Council (HEQC) are not accredited by Engineering Council of South Africa (ECSA) resulting in some universities and universities of technology offering non-ECSA accredited programmes to learners. The implication of this scenario is that graduates of ECSA non-accredited programmes cannot practice or register as professionals in the field resulting in wastage for the learners and the higher education system as a whole.

In summary, Havenga (2009: 181) concludes that supply-side analysis suggests that all growth indicators in the production of engineering graduates, in relation to the economy, are declining. Grade 12 teaching inputs are poor and mathematics pass rates are still unacceptable. Numbers of engineering higher education and training graduates are far below what is needed in the economy and the gap between current growth, required growth and what is actually being delivered is widening (Havenga 2009: 181).

Another impediment to skills supply by the HET institutions is the difficulty of attracting and retaining highly qualified but poorly remunerated academic staff. This makes it increasingly difficult to effect a radical improvement in graduation rates. Didiza (2007) puts the average graduation rate at universities and universities of technology at 14% for undergraduate engineering programmes in 2004.

#### **Under-production of Qualified and Chartered Accountants**

The demand for and supply of qualified and professional accountants have equally assumed a disproportionate dimension. a situation that is also not helped by shortage of qualified aca-

demical staff. Temkin (2008) citing Ignatius Sehoole, the Chief Executive Officer of the South African Institute of Chartered Accountants (SAICA) reports that "SAICA conducted a lengthy study of the accounting programme at the University of Witwatersrand this year (that is, 2008) and concluded after a monitoring visit to the University in August (2008) that the programmes did not comply with its standards and that steps would be taken to withdraw its accreditation". SAICA regulates the accounting profession and the quality of South African accounting system is often cited as one of the main reasons foreigners invest in the South Africa's economy.

Some of the reasons attributed to the withdrawal threat by SAICA, according to Temkin (2008) include: shortage of academic staff, particularly in the core disciplines of taxation, financial management and accounting. Another reason given by SAICA is that the school has an acting head (Barnard) who has little background in accounting matters. Other reasons include loss of a number of senior staff members over the last few years, problems attracting and retaining staff, a large number of staff appear to be demoralised, and the pass rates for Black students are considerably lower than for the White students, with the number decreasing significantly from the first to the fourth year. There are currently 27,047 chartered accountants in South Africa and the country is in a dire need of accountants amidst skills crisis, the profession that is arguably the most fundamental to the economic success of South Africa (Temkin 2008).

Critical to the problem of scarce skills is the continued misalignment in the skills supplied into the economy by the HET band and the skills required by the economy for sustainable economic growth. This problem was reflected in a memorandum of understanding (MOU) signed in 2006 between the Cape Higher Education Consortium (CHEC), comprising of Vice-Chancellors of all the universities and universities of technology in the Western Cape Province and the Provincial Government of the Western Cape, represented by the Premier. The MOU states inter-alia: "there is currently misalignment with South Africa's further, higher and continuing education sector and market demand. This has resulted in the paradoxes of proposal to attract skilled foreign labour to a country with unacceptably high levels of unemployment, and the

failure to fill graduate-level jobs in key sectors in the face of a rising levels of overall graduate unemployment". In order to overcome the problem, the MOU provided a framework for facilitating alignment between the demand for scarce skills in the medium to long-term and the supply of graduates particularly in relation to identified growth areas. Furthermore, the MOU was to establish strategic partnerships to support the provision of continuing education courses to address critical skills shortages in the short-term. The reality on ground today (that is, continued misalignment in skills demand and supply) does not, however, suggest that the MOU achieved the desired results.

### The Learnerships System

There is a general consensus that in order to achieve growth and development, South Africa requires a multi-pronged skills development strategy that targets high, intermediate and low-level skills development simultaneously in a differentiated manner (Kraak; Kraak et al.; McGrath et al.; Ashton, Young cited in Visser and Kruss 2009: 357). The point of divergence, however, is whether a single intervention mechanism can provide such a multi-pronged strategy on its own, functioning as a demand-led formal labour market tool to fill the need for critical and scarce-high- and intermediate-level skills, and simultaneously, as an employment-creation mechanism at the low-and intermediate-skills levels (Fuller and Unwin 2003). Arising from this consensus between government, organised labour and organised business was the establishment of learnerships as a new skills development system in South Africa.

Learnership system was implemented in South Africa in 2001 as a key component of a NSDS as an accredited work integrated learning programmes aimed at providing workplace learning in a structured form, linked to multiple sites of work experience, and culminating in a nationally recognised qualification (DoL 1997). Learnerships were aimed to provide a quality learning experience by integrating theoretical education and work-based skills training linked to qualifications at a NQF levels (Visser and Kruss 2009). One of the key objectives of the learnership system is to foster skills development in the formal economy, as well as assist (young) entrants into employment (DoL 1999a, 2002, 2005b). In order

to facilitate and make this objective to be effective, government allocated the sum of R1-billion in the 2010/11 fiscal policy to subsidise the cost of new (young) people entering into employments.

Learnerships are administered and managed by SETA in order to respond to specific sectoral skills priorities. Learnerships were introduced to replace the outdated apprenticeship system, to halt the steady decline in enterprise training experienced in the 1980s and early 1990s (Badroodien 2004; Kraak 2004) and to stem the decline and poor quality of technological education at the intermediate level (Kraak 2005). Apart from these intentions, learnerships were initially identified as a policy instrument (DoL 1997; Kraak 2008) that would shift away from the provider-driven training system of the past, to a system aligned with and driven by skills needs in specific sectors. Learnerships and skills development in general, are well funded by a compulsory national levy-grant system administered by SETAs as provided for in the Skills Development Act, 1998 (Act 97 of 1998).

The initial design and intention of the learnerships system was similar, to a large extent, to the German and Singaporean skills development models discussed in chapter two of this thesis. The German system require learners to spend four days a week employed by a firm and receiving training, and one day a week in school. The training received is carefully standardised nationally and is provided by specially trained and certified firm of employers. In Singapore, the technical education stream structured training according to economic needs. However, with time the target group of the learnerships system began to change due to socio-political considerations. For example, the system initially focused strongly on up-skilling the employed. The targets for the unemployed were later emphasised during a tripartite Growth and Development Summit (DoL 2003) between government, business and labour (Kraak 2008). The summit (Visser and Kruss 2009) pressurised SETAs to make commitments in terms of the numbers of unemployed youth under 35 to be engaged in learnerships. With this, the demand-led formal labour-market intervention strategy of the system was altered to modify learnerships as an employment-creation and social-inclusion mechanism more strongly (Visser and Kruss 2009). An unintended consequence is that

learnership programmes were increasingly perceived to be initiated from the supply-side, by private training providers establishing programmes that could attract potential learners (Marock 2007; Grawitzky 2007; Kraak 2008).

The learnership system may not achieve the original desired results as a result of the shift in operational focus – that is, from up-skilling employees on sectoral bases to providing general skill programmes for the unemployed. This may prompt SETAs to develop greater capacity to steer demand-led skills development in relation to critical and scarce skills, as they mature (Visser and Kruss 2009: 371) as it has not been possible to maintain a balance of expectations in the face of a de-facto shift in the learnership system to cater primarily for the young unemployed people. The prioritisation of learnerships as a means of social inclusion and employment creation may exacerbate the systemic mismatch between skills supply and demand in specific sectors of the economy. Also of concern is the possibility that the learnership system can meet the demand for upgrading scarce and critical skills at the intermediate and high levels adequately (Visser and Kruss 2009: 372).

A serious concern expressed by Visser and Kruss is the adequacy of the learnership system to meet the needs of its majority beneficiaries – unemployed people – whose learnership qualifications may not be aligned sufficiently with labour-market demand, or may be at too low a level to impart core competences and skills that allow for employment flexibility, which may devalue their labour-market exchange value. The tendency to perceive learnership qualifications as a low-status, low-skills qualifications route for marginalised young people who are unable to access further and higher education is also of concern (Visser and Kruss 2009). Visser and Kruss concluded by suggesting a future debate as to the best mechanisms for skills upgrading, on the one hand, and for training to enhance employability on the other hand. “It may be desirable, but it is not yet possible for SETAs to manage and realise the multiple expectations of the learnership system” (Visser and Kruss 2009: 372).

## METHODOLOGY

### Data Collection

Secondary data was collected through a letter of request to Registrars of seventeen out of

the twenty-three public universities in South Africa. However, only six responded. Data collected included the degree profile of undergraduates per fields of study from 2005 – 2008. The data showed the numerical strength of graduates in all academic faculties in the universities. The data was considered accurate, reliable and of high integrity as it was obtained through the authorised custodians (Registrar) of such information.

The research utilised exploratory research method. Extensive literature review was conducted in order to establish the sectoral demand side characteristics of skills. The skills demand by industry (as established through literature review) was evaluated against the number of skills produced in each discipline by the universities in order to determine the extent of misalignment in the supply and demand sides.

## LIMITATIONS

The survey covered only six out of the twenty-three public universities in South Africa. The study was also limited to undergraduate degree graduates. It is quite possible that a social science graduate, for example, could opt for professional study through programmes such as Master of Business Administration (MBA) at postgraduate level. Such possibility was not accounted for in the study.

## CONCLUSION

It is not just sufficient for the HET system to turn out large number of graduates at each graduation ceremony, it is more important to ensure that various stake holders in the education and training of these graduates begin to realise return on their investments immediately. This can only be possible if the system produces job candidates whose skills and expertise are presently required and immediately absorbed by the economy. In other words, there should be alignment between the skills produced by the tertiary education and training institutions and those skills that are presently required by the industry so that these graduates can be employed upon graduation. Analysis of sectoral skills demand shows that each sector of the economy requires customised skills development strategies to meet specific sectoral conditions. The reality in the skills produced by the HET band however does not meet this expectation. This places widely di-

verging demands on the education and training system and that, in turn, necessitate far greater levels of alignment between skills development and industry requirement. It is on the strength of this finding that this study recommends a demand (employer) - driven human resource development strategy in order to effectively address the skills gap occasioned mainly by mismatches in the skills demand and supply pipelines.

### RECOMMENDATIONS

There should be greater involvement and stronger partnership between the universities and FET colleges on the one hand, and the industry on the other hand, in the design and implementation of study programmes (especially those that are technically oriented). This is essential in order to provide undergraduates with a practical knowledge of the workplace requirements by way of experiential learning. This will enrich the practical component of academic programmes run by these institutions so that learners can have a proper blend of both theory and practical. This also will greatly improve the level of job opportunities of these graduates. The FET colleges should be strengthened and refocused to concentrate on the production of intermediate skills, especially those in the scarce category rather than enrolling students in great numbers in generic studies that are not presently in demand by the economy. In this regard, the Department of HET and that of Labour should provide a platform to facilitate (through persuasion and if necessary, legislative intervention) an effective working relationship between tertiary education institutions and industry players in order to properly align education and training to the demand of the economy. This will drastically reduce the growing pool of unemployed graduates in the face of skills shortages. This, by extension will reduce the level of poverty in the country.

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