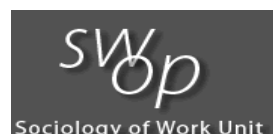




Human Sciences  
Research Council



Development Policy  
Research Unit



Sociology of Work  
Unit

## **RESEARCH CONSORTIUM**

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<h3><b>ARTISANS/TRADES</b></h3>
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**Scarce and critical skills  
Research Project**

**MARCH 2008**

**RESEARCH COMMISSIONED BY  
DEPARTMENT OF LABOUR  
SOUTH AFRICA**

**PROFESSIONS CASE STUDY REPORT:**  
**ARTISANS/TRADES**

**March 2008**

**RESEARCH CONDUCTED BY**

**DR JEFFY MUKORA, HSRC**

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## ACRONYMS

<b>ANC</b>	African National Congress
<b>ASGISA</b>	Accelerated and Shared Growth Initiative
<b>CEO</b>	Chief Executive Officer
<b>COSATU</b>	Congress of South African Trade Union
<b>COTT</b>	Central Organisation of Technical Training
<b>DoE</b>	Department of Education
<b>DoL</b>	Department of Labour
<b>FET</b>	Further Education and Training
<b>GDS</b>	Growth and Development Summit
<b>HSRC</b>	Human Sciences Research Council
<b>ITB</b>	Industry Training Board
<b>ISCO</b>	International Standards Classification of Occupations
<b>JIPSA</b>	Joint Initiative on Priority Skills Acquisition
<b>JIT</b>	Just in Time
<b>LFS</b>	Labour Force Survey
<b>MERSETA</b>	Manufacturing Engineering and Related Services SETA
<b>MQA</b>	Mining Qualifications Authority
<b>MTA</b>	Manpower Training Act
<b>NMC</b>	National Manpower Commission
<b>NQF</b>	National Qualifications Framework
<b>NSA</b>	National Skills Authority
<b>NSDS</b>	National Skills Development Strategy
<b>NTB</b>	National Training Board
<b>NTSI</b>	National Training Strategy Initiative
<b>NUMSA</b>	National Union of Metalworkers of South Africa
<b>NVC</b>	National Vocational Certificate

<b>OFO</b>	Organising Framework for Occupations
<b>OHS</b>	October Household Survey
<b>QCTO</b>	Quality Council for Trades and Occupations
<b>RPL</b>	Recognition of Prior Learning
<b>SAQA</b>	South African Qualifications Authority
<b>SASCO</b>	South African Standard Classification of Occupations
<b>SDA</b>	Skills Development Act
<b>SDF</b>	Skill Development Facilitator
<b>SETA</b>	Sector Education and Training Authority
<b>SOE</b>	State Owned Enterprise
<b>SSP</b>	Sector Skills Plans
<b>VET</b>	Vocational Education and Training
<b>WSP</b>	Workplace Skills Plan



## INTRODUCTION

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### Aims of the study

This study is part of a range of research projects commissioned by the Department of Labour on aspects of the National Skills Development Strategy (NSDS: 1 April 2005 – 31 March 2010) and on aspects of the labour market and skills development policies of the Department of Labour (DoL). It constitutes Phase 2 of a study to ascertain scarce skills needed in South Africa, namely: *Project 4.1: A multiple source identification and verification of scarce and critical skills in the South African labour market*. In support of the challenge to address skills shortages in South Africa, the main objective of this study is to identify, collate, interpret and verify information on artisanal skills currently available within the South African labour market.

The aim of the research is to give the Department of Labour a clear idea about the shortage of artisans in South Africa, thereby enhancing the department's ability to promote skills development towards sustainable growth, development and equity.

This research will make an assessment and provides a view on whether artisans are in shortage in the country, and if so, the type of shortage being experienced and the reasons for the shortage.

### Background and context

The South African government's target as set out in 2004 is to half poverty and unemployment by 2014. During the first 10 years of democracy, growth averaged about 3%. Since 2004 growth has tended to exceed 4% per year, reaching about 5% in 2005. In view of the deficiencies and capabilities of the economy, a two phase target has been set. Between 2005 and 2009, an annual growth rate that averages 4.5% and higher has been set. In the second phase, between 2010 and 2014, the government seeks an average growth rate of 6% of GDP.

The government's Accelerated and Shared Growth Initiative for South Africa (Asgisa) has identified skilled artisans and vocational skills as critical for sustained growth. In a period of growth it is evident that the South African labour market lacks sufficient skilled professionals, managers and artisans, and that those parts of the legacy of apartheid remains a contributory factor.

The short supply of well qualified, competent and experienced artisans is frequently highlighted in the media with comments from government, employers and unions. While the effect of skill shortage on the economy is not well defined, it is widely believed that the skills crunch will severely hinder South Africa's ability to deliver an economic growth rate of six percent per annum.

The expansion of intermediate artisan and technical skills for the growing economy has been identified as one of the five main areas for targeted intervention by the Joint Initiative on Priority Skills Acquisition (JIPSA) which was launched by the government on 27 March 2006. The JIPSA initiative argues that for both the public infrastructure and the private investment programmes, the single greatest impediment is the shortage of technically skilled labour at the intermediate level. This is being worsened by the government's massive investment in

the infrastructure sector in preparations for the 2010 FIFA World Cup. The shortage of skills in key technical fields has been fueled by a drastic decline in number of trained artisans over the last decades.

This shortage of artisans exists alongside a massive expansion of FET college enrolments in engineering studies (in the FET context Artisan related skills are clustered under engineering). According to Patel (2007), a total of 280 000 graduated in engineering studies in 2000 but only 34% found jobs in industry. It is primarily because most of these engineering students are not employer sponsored and that FET courses are not aligned to industry requirements.

The surplus of unemployed FET college engineering graduates is exacerbated by the increase in the number of learners who have enrolled in learnerships since April 2001. According to Kraak (2007), a total of 134 223 learners enrolled for learnerships in the period between 1 April 2001 and 31 March 2005. Research has revealed that most of these learnerships are in non-technical fields and until recently, have tended to be focused at very low skills levels than those that would be required for artisanal work. As a result, this learnership initiative has not sufficiently resolved the shortage of technical skills at the intermediate level.

These factors, among many others, have contributed to the malfunctioning labour market for artisanal skilled labour. It is important to note that artisans fall under the *Major Occupational Group 7: Craft and related trade workers* and this report uses 'craft and related workers' to refer to artisans although not all craft and related trade workers are qualified artisans.

## **Scarce and critical skills**

There are different perspectives attached to the term skills shortages. This report uses the definition of a skills shortage from Shah and Burke (2003):

*A skill shortage exists when the demand for workers for a particular occupation is greater than the supply of workers who are qualified, available and willing under existing market conditions.*

A distinction is made between the concepts of skills shortages with recruitment difficulties and skills gap. Recruitment difficulties refer to the situation where a business finds it difficult to fill a vacancy in spite of an adequate supply of skilled workers. This may be due to the characteristics of the business, location, remuneration being offered, poor working conditions or the skill set required for the position. Skills gap occurs when existing staff at a given company or industry do not have the skills for the required positions.

In support of the challenge to address skills shortages in South Africa, the vision of the National Skills Development Strategy (NSDS: 1 April 2005 – 31 March 2010) is to develop skills for sustainable growth, development and equity. Through Objective 1 of the NSDS, the Department of Labour commits itself and Sector Education and Training Authorities (SETAs) to prioritise and communicate critical skills.

SETAs are required to identify scarce and critical skills in the research, development and submission of their Sector Skills Plans (SSPs). The Department of Labour used the data on scarce and critical skills contained in Chapter 4 of the SSPs submitted by SETAs early 2006 to develop a list of scarce and critical skills in South Africa. The DoL has prepared this national list of scarce skills "to provide a more concrete and less anecdotal picture of skills

shortages that have been identified as contributing to blocking economic growth and development” (DoL, 2006a:1).

According to the DoL’s *Guide for the Development of Five Year Sector Skills Plans and Annual Updates for 2005 to 2010* (Department of Labour 2005), the term **scarce skill** refers to those occupations in which there is a demand of qualified and experienced people to fill particular roles or occupations in the labour market. Such scarcity can be current or anticipated for the future but it is always associated with a skills shortage which is prohibiting economic activity and growth, and may be because people are not available (absolute) or are available but do not meet other employment criteria (relative), for example geographical locations and employment equity considerations.

The term **critical skill** refers to a particular skill within an occupation. The concept critical skills, can refer to a) key, generic or fundamental skills such as cognitive skills (problem solving and learning to learn), language and literacy skills, mathematical skills, ICT skills and working in teams as well as b) the occupationally specific “top-up” skills required for performance within that occupation to fill a ‘skills gap’ that might have arisen as a result of changing technology, new forms of work organisation or insufficient training before entering the job market.

A number of sources are signaling the shortage of qualified and experienced artisans in the South African labour market, for example

- In the last two years, Seifsa has approved and developed the accelerated artisan training model at the Fundi training centre in a bid to expand the pool of artisans available in the steel and engineering industry by reducing the training programme to 80 weeks
- Murray & Roberts Cementation advertising artisan positions offering a R20 000 commencement bonus
- Bombela Concession Company appointing about 100 artisans from Philippines, India and the Southern African Development Community for the Gautrain project
- Sasol importing 900 skilled artisans from Asia to undertake maintenance work in September 2006
- A recent additional requirement of the Department of Labour (DoL) is that all SETAs should use their discretionary funds to identify scarce and critical skills in their respective sectors. Reporting of these skills shortages has to be done at the specific occupational level, and occupations have to be defined in terms of the organising framework for occupations (OFO), which is a new occupational classification system

However some of the claims about the shortage of artisans and the numbers given are not based on empirical evidence. In other words, most of the figures highlighted in the media and government reports are doubted on methodological grounds. According to the chairperson of the immigration and refugee-law committee of the Law Society of South Africa it appears that not much research was done in developing Home Affairs’ work-permit categories and quotas (Creamer Media, 2006). The Department of Home Affairs expects to update its immigration quota list from the *Consolidated Scarce Skills Master List* to be developed by the Departments of Labour and Trade and Industry.

Furthermore, SETA quantification of scarce skills is reported insufficient. Patel (2007) reported a low % industry contribution to workplace skills plans (WSPs).

This study is designed to rely on a process of triangulation involving the use of secondary literature; data obtained through previous HSRC, other studies and from Statistics South Africa; and in-depth interviews with a selection of enterprises, industry experts/stakeholders,

education and training institutions and professional bodies. These sources of information will all be drawn together to identify and verify whether artisans are in short supply.

The rest of the report is structured as follows:

- Section two presents the methodology adopted for this study
- Section three gives an overview of the demand for artisans in the South African labour market. It will show an increase in the number of workers reportedly employed as craft and related trade workers from 1,2 million in 1996 to nearly 1.8 million in 2005, constituting a compound annual growth rate of 4,36 % in employment over the ten year period. The greatest and growing demand for Craft and related trades worker skills is for Extraction and building trade workers in the Construction sector. This can attributed to the infrastructure boom ahead of 2010.
- Section four provides an overview of the supply-side of the equation. This will show trends in supply from the traditional apprenticeship route, the learnership route and from public FET colleges. It will also show the misalignment of these routes which result in a large number of people who do not have the artisan ticket but are working as artisans.
- Section five provides a brief history of artisan training in South Africa from the late 1800s until the current period. The historical overview will highlight how artisan development has been influenced by changes in the workplace and the economy as well as by socio-political factors. Drawing on the historical overview and on other data sources,
- Section six discusses the factors behind the decline of apprenticeship training and help to explain the current shortages of artisans.
- Section seven discusses a number of interventions put in place to alleviate the shortages.
- Section eight summarises all the salient points of the study and specific recommendations are made in section nine.

## **METHODOLOGY**

The research methodology adopted for this study drew mainly from the one that was used by Breier and Wildschut (2006) to study the professions and education of medical practitioners. Both quantitative and qualitative methodologies were used in their research.

The focus of this case study on artisans, then, was the relationship between artisanal shortages and the operational effectiveness of labour market processes and institutions. The concern was with the entire labour market process for artisan development, ranging from the way in which demand is manifested through entry into training and ultimate placement on the job.

The following factors were examined-with reference to their effect on labour supply and on demand-supply relationships:

- Factors affecting occupational choice
- Qualifications for entry into training

- The content and length of training programmes
- The financing of training
- The organisation of training
- Labour market information
- Employer hiring and utilization practices, as well as wages trends

### Research questions

In terms of the above, the key questions that this study aimed to address include the following:

- What skills/forms of knowledge are important, and why?
- What are the skills/knowledge requirements for artisanal work?
- What are the dominant trends in curriculum and pedagogy in the education and training for artisans? To what extent do apprenticeship and learnership programmes prepare learners for the workplace?
- How are firms coping skill/knowledge mismatches and tight labour markets?
- Does immigration play a significant role?
- Can certification schemes help signal skills to employers?
- What are the relative incentives and barriers for upgrading skills?

Drawing on the above considerations, the following activities were undertaken to fulfill the requirements of this project:

### Interviews

- A series of interviews were conducted with a number of individuals who had knowledge about artisan development in South Africa.
- In addition to this face-to-face or telephonic interviews were conducted with skills development managers from all the SETAs involved in artisan formation.
- Face-to-face interviews were conducted with two SETA CEOs.
- Face-to-face or telephonic interviews were also conducted with selected members of the Department of Labour (DoL)'s Artisan Development Committee.
- Telephonic interviews were conducted with fifteen registered apprentices
- In addition to the above, telephonic interviews were conducted with skills development facilitators (SDFs) from companies such as Eskom, Sasol, South African railways (Spoornet) and Seifsa.

### Documentation

- A review of the documents that have written about the history of artisan development in South Africa from the late 1800's until the current period;
- Documents (including relevant legislation) pertaining to the statutory framework relating to apprenticeships and learnerships.
- A review of various reports compiled by the DoL on artisan development and on the SETAs.
- Documents from the SETAs; SSPs for the 2005-2009/10 period; Annual reports for the periods 2004-2005 and 2005-2006.
- Reports from the DoL for the periods 2004-2005, 2005-2006 and 2006-2007.
- A wide range of secondary sources referenced in the text of this report were also used
- In addition to this, a dataset was also consulted of employment statistics of the Major Occupational Group 7: Craft and related trades workers according to the South

African Standard Classification of Occupations (SASCO) created from OHS and LFS data.

### Methodological challenges

With regards to the data obtained from the above sources a number of issues need to be borne in mind in the reading of this report:

Difficulties were encountered in many cases with the validity and reliability of the data. While there was an attempt to verify this data with other data sources, the validity and reliability of data obtained from these sources was also questionable.

Despite the above, however, an analysis of these pieces of data could at least illuminate the mismatch between the demand and supply of artisanal skills in the country.

## THE DEMAND FOR ARTISANS

The demand for skills can be derived from changing patterns of sectoral employment due to shifts in the demand for goods and services and changing ways in the production of goods and services (LSC, 2005). For the purposes of quantifying the demand for Artisans, a dataset of employment statistics<sup>1</sup> of the *Major occupational group 7: Craft and related trades workers* according to the South African Standard Classification of Occupations (SASCO) was created from OHS and LFS data.<sup>2</sup> Spanning a 10 year period (1996 – 2005), the information extracted from the OHS (1996-1999) and the LFS (2000-2005 September cycle) is presented in the following sections. The overview covers the distribution of workers with regard to occupations and sectors, race and gender and level of education.

The number of workers reportedly employed as craft and related trades workers increased from 1,2 million in 1996 to nearly 1,8 million in 2005, constituting a compound annual growth rate (CAGR) of 4,36 per cent in employment over the 10 year period (Table 1). The increase in demand occurred across all broad occupational categories, but more so for Extraction and building trades workers (4,88 per cent) and for Metal, machinery and related trades workers (4,62 per cent) than for Other craft and related trades workers (3,15 per cent) and for Precision, handicraft, printing and related trades workers (2,97 per cent).

**Table 1: Total numbers of craft and related trades workers from the OHS and the LFS databases (1996 – 2005)**

Year	Major group	Sub-major group			
	7: Craft and related trades workers	71: Extraction and building trades workers	72: Metal, machinery and related trades workers	74: Other craft and related trades workers	73: Precision, handicraft, printing and related trades workers
1996	1 205 170	560 057	334 929	239 364	69 310
1997	1 329 353	606 246	393 274	267 479	62 354
1998	1 348 203	641 658	386 314	245 500	74 730
1999	1 391 384	703 232	401 601	223 960	62 591
2000	1 535 889	754 953	438 922	271 747	70 267

<sup>1</sup> The number of people employed is used as a proxy for the demand for labour.

<sup>2</sup> Labour force statistics are collected by Statistics South Africa (StatsSA) through its household surveys (OHS annually 1994 – 1999 and LFS twice-yearly since 2000). OHS = October Household Survey, LFS = Labour Force Survey

Year	Major group	Sub-major group			
	7: Craft and related trades workers	71: Extraction and building trades workers	72: Metal, machinery and related trades workers	74: Other craft and related trades workers	73: Precision, handcraft, printing and related trades workers
2001	1 448 963	712 621	434 776	239 235	62 331
2002	1 416 671	661 786	443 903	243 265	67 717
2003	1 455 731	704 804	458 741	225 751	66 435
2004	1 554 683	786 578	443 328	252 593	72 184
2005	1 769 253	859 764	502 790	316 537	90 163
Distribution (average over 10 years: 1996 – 2005)					
Growth across sector					
Total	4.36	4.88	4.62	3.15	2.97
Formal	0.87	1.05	2.35	-0.87	-3.87
Informal	20.09	23.44	20.54	14.10	23.02
Employment across sector					
Formal	71.11	70.15	78.29	62.58	68.01
Informal	28.89	29.85	21.71	37.42	31.99
Occupation within sector					
Total	100.0	48.37	29.32	17.47	4.83
Formal	100.0	47.57	32.34	15.45	4.63
Informal	100.0	49.83	22.07	22.74	5.36

However, it has to be noted that job growth occurred mainly in the informal sector of the economy (one reason for this is the increasing use of casual labour). Formal employment of craft and related trades workers fluctuated over the period under review: from 1,1 million in 1996, down to 0,92 million in 2001, and up to nearly 1,2 million jobs in 2005 (at a CAGR of 0,87 per cent). Employment growth in the formal sector of the economy was lower than the overall growth rate for Extraction and building trades workers (1,05 per cent) and for Metal, machinery and related trades workers (2,35 per cent), while formal employment for Other craft and related trades workers and for Precision, handcraft, printing and related trades workers showed negative growth. Informal sector employment of craft and related trades workers showed significant growth across all sub-major group level occupations (at a CAGR of around 20 per cent). On average, more than a quarter of all craft and related trades workers were employed in the informal sector between 1996 and 2005.

Figure 1 show that nearly half of all craft and related trades workers were classified as Extraction and building trades workers (of which the majority was building trades workers). Around a third of all craft and related trades workers were employed as Metal, machinery and related trades workers (of which nearly two-thirds were Machinery mechanics and fitters). Less than a fifth fell in the category of Other craft and related trades workers and around five percent worked as Precision, handcraft, printing and related trades workers.

**Figure 1: Occupation distribution at a sub-major group level of craft and related trades workers**

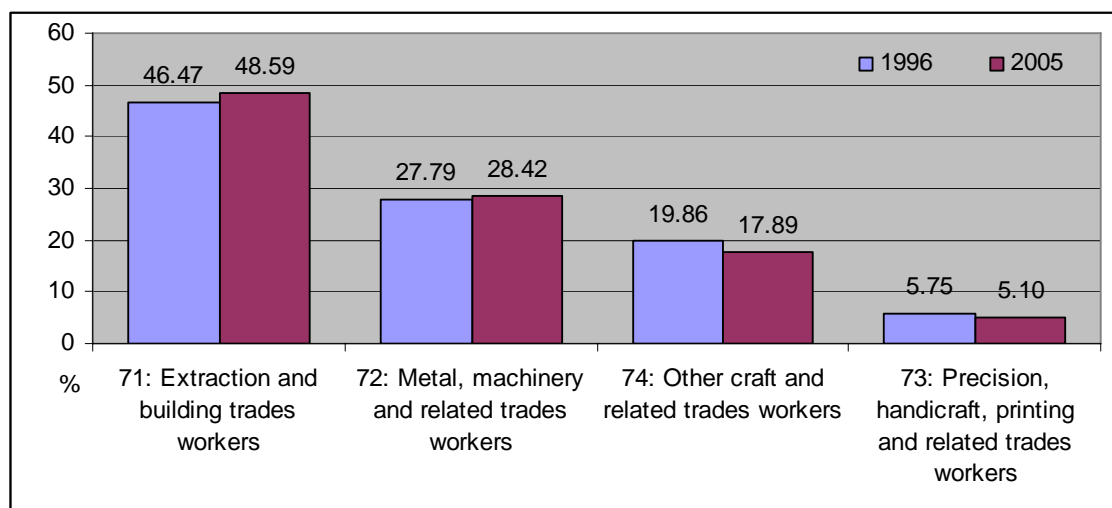


Table 2 provides an overview of trends in employment opportunities for Craft and related trades workers in different industry sectors. Strong growth in the employment of Craft and related trades workers occurred in the Construction sector and in Wholesale and retail trade: repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants (at a CAGR of above 8 per cent). The Agriculture, hunting, forestry and fishing sector; Manufacturing; and Mining and quarrying sectors also showed growth in the demand for Craft and related trades workers. The number of employment opportunities for Craft and related trades workers in Electricity, gas and water supply and in Financial intermediation, insurance, real estate and business services declined at a compound annual rate of 4 per cent between 1996 and 2005. The number of Craft and related trades workers has declined marginally in the Transport, storage and communication sector and has stayed relatively constant in the Community, social and personal services sector.



**Table 2: Sectoral distribution of Craft and related trades workers**

Year	Total	1: Agriculture, hunting, forestry and fishing	2: Mining and quarrying	3: Manufacturing	4: Electricity, gas and water supply	5: Construction	6: Wholesale and retail trade: repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants	7: Transport, storage and communication	8: Financial intermediation, insurance, real estate and business services	9: Community, social and personal services	0: Private households, extraterritorial organisations, representatives of foreign governments and other activities not adequately defined	10: Not applicable and Unspecified
1996	1201157	14383	109642	395858	49563	287643	172876	36900	36139	58627	39526	0
1997	1324940	21156	123605	405753	46346	331620	210058	38206	47616	61515	39065	0
1998	1331947	23447	157306	384186	32692	356726	237526	38507	32157	50692	16868	1838
1999	1383963	29227	172173	390196	22332	375152	249461	47238	24574	58077	15170	363
2000	1535889	17639	176660	463332	24100	450454	307174	31005	20263	42596	2667	0
2001	1448963	15432	173033	440801	24049	429673	272444	38562	17288	37527	155	0
2002	1416671	14555	161967	469953	25758	400682	253633	31753	14643	39476	4250	0
2003	1455731	20631	162978	460271	26172	414307	277712	23341	24258	44754	967	340
2004	1554683	20114	134159	463543	27153	524051	273296	32931	30038	46996	2166	236
2005	1769253	20404	120171	545192	32807	581571	354993	31873	24379	57097	766	0
CAGR	4.40	3.96	1.02	3.62	-4.48	8.14	8.32	-1.61	-4.28	-0.29		
1996	100.00	1.20	9.13	32.96	4.13	23.95	14.39	3.07	3.01	4.88	3.29	0.00
1997	100.00	1.60	9.33	30.62	3.50	25.03	15.85	2.88	3.59	4.64	2.95	0.00
1998	100.00	1.76	11.81	28.84	2.45	26.78	17.83	2.89	2.41	3.81	1.27	0.14
1999	100.00	2.11	12.44	28.19	1.61	27.11	18.03	3.41	1.78	4.20	1.10	0.03
2000	100.00	1.15	11.50	30.17	1.57	29.33	20.00	2.02	1.32	2.77	0.17	0.00
2001	100.00	1.07	11.94	30.42	1.66	29.65	18.80	2.66	1.19	2.59	0.01	0.00
2002	100.00	1.03	11.43	33.17	1.82	28.28	17.90	2.24	1.03	2.79	0.30	0.00
2003	100.00	1.42	11.20	31.62	1.80	28.46	19.08	1.60	1.67	3.07	0.07	0.02
2004	100.00	1.29	8.63	29.82	1.75	33.71	17.58	2.12	1.93	3.02	0.14	0.02
2005	100.00	1.15	6.79	30.81	1.85	32.87	20.06	1.80	1.38	3.23	0.04	0.00

**Table 3: Craft and related trades workers by sub-major group occupation and sector (2005)**

	71: Extraction and building trades workers	72: Metal, machinery and related trades workers	73: Precision, handicraft, printing and related trades workers	74: Other craft and related trades workers
1: Agriculture, hunting, forestry and fishing	875	7139	194	12195
2: Mining and quarrying	89472	28665	1640	393
3: Manufacturing	107043	162515	69145	206490
4: Electricity, gas and water supply	25530	7203	75	0
5: Construction	549396	25601	5338	1236
6: Wholesale and retail trade: repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants	42336	222227	6567	83863
7: Transport, storage and communication	5005	26868	0	0
8: Financial intermediation, insurance, real estate and business services	5371	10465	4090	4453
9: Community, social and personal services	33971	12107	3113	7906
0: Private households, extraterritorial organisations, representatives of foreign governments and other activities not adequately defined	766	0	0	0
10: Not applicable and Unspecified	0	0	0	0
<b>Total</b>	<b>859764</b>	<b>502790</b>	<b>90163</b>	<b>316537</b>
<b>Percentage distribution</b>				
1: Agriculture, hunting, forestry and fishing	0.10	1.42	0.22	3.85
2: Mining and quarrying	10.41	5.70	1.82	0.12
3: Manufacturing	12.45	32.32	76.69	65.23
4: Electricity, gas and water supply	2.97	1.43	0.08	0.00
5: Construction	63.90	5.09	5.92	0.39
6: Wholesale and retail trade: repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants	4.92	44.20	7.28	26.49
7: Transport, storage and communication	0.58	5.34	0.00	0.00
8: Financial intermediation, insurance, real estate and business services	0.62	2.08	4.54	1.41
9: Community, social and personal services	3.95	2.41	3.45	2.50
0: Private households, extraterritorial organisations, representatives of foreign governments and other activities not adequately defined	0.09	0.00	0.00	0.00
10: Not applicable and Unspecified	0.00	0.00	0.00	0.00
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Strong growth in certain sectors and slower growth or decline in other sectors resulted in shifts in the distribution of Craft and related trades workers across the different sectors. For example, in 1996 the Manufacturing sector was the largest employer (two-thirds of all Craft and related trades workers) but by 2005 the Construction sector employed two-thirds of all Craft and related trades workers. A fifth of all Craft and related trades workers were employed in the Wholesale and retail trade sector (mainly in the repair of motor vehicles, motor cycles and personal and household goods) in 2005, while in 1996 it was 14 per cent.

Nearly two-thirds (63,90 per cent) of all Extraction and building trades workers were employed in the Construction sector in 2005 (Table 3). A further 12,45 per cent was employed in the Manufacturing sector and 10,41 per cent in Mining and quarrying. Forty-four percent of all Metal, machinery and related trades workers were employed in the Wholesale and retail trade sector (mainly in the repair of motor vehicles, motor cycles and personal and household goods), followed by the Manufacturing sector (32,32 per cent). The majority (76,69 per cent) of Precision, handicraft, printing and related trades workers were employed in Manufacturing. Two-thirds of all Other craft and related trades workers have worked in the Manufacturing sector and a quarter in Wholesale and retail trade.

It can be deduced from the above information that the greatest (and growing) demand for Craft and related trades worker skills is for Extraction and building trades workers in the Construction sector. This can be ascribed to the infrastructure boom in preparation for the 2010 FIFA World Cup. This includes building or improving the 10 stadiums to be used, and investment in the environs and access to the stadiums.

The second largest demand is for Metal, machinery and related trades workers in the repair of motor vehicles, motor cycles and personal and household goods and in the Manufacturing sector. This can be attributed to the massive increase of new car sales in the South African motor industry for the past three years. Manufacturing, Engineering and Related Services Seta (merseta) CEO Raymond Patel said that, with 35 000 new vehicle units hitting South African roads every month, it would be a difficult task to ensure that there were enough skilled people to service them (Personal communication, 17 July 2007).

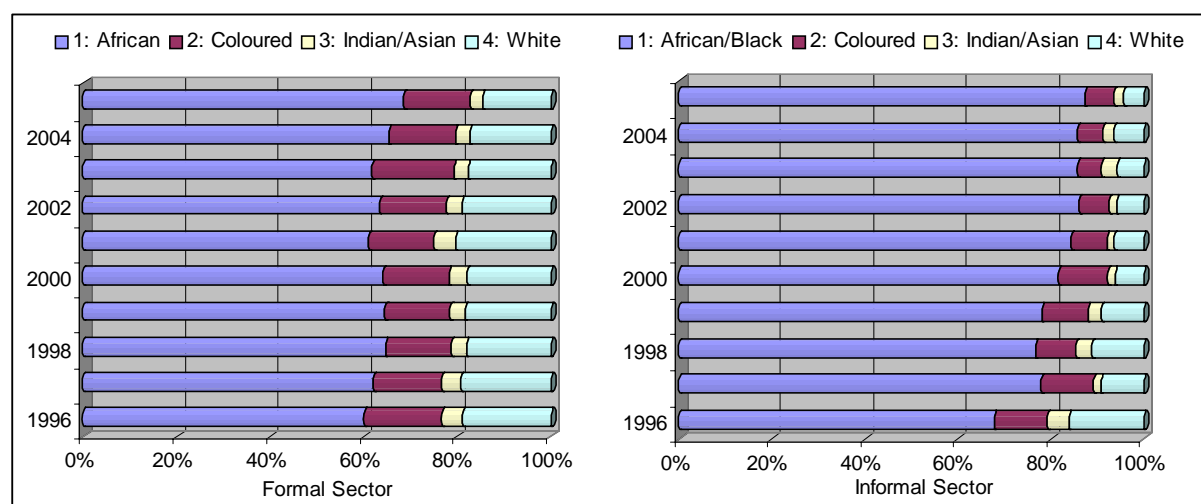
We will see in the supply-side section that the demand in these areas is reinforced by the government's allocation of R1,9 billion to the re-capitalisation of FET colleges over the period 2006/7 to 2008/9. R50 million is provided for the planning of the re-capitalisation of the colleges. This planning includes the development of curricula for eleven priority skills programmes to be offered from 2007 and replace the N1-N6 programmes. The 11 programmes or vocational fields of study fall into the priority areas identified by Asgisa, including civil engineering and building construction, electrical infrastructure construction, engineering and related design.

The share of African Craft and related trades workers have increased with 14 percentage points from 60,79 per cent in 1996 to 74,55 per cent in 2005 (Table 4/Figure 2). Consequently the share of coloured, Indian and white Craft and related trades workers has declined. The share of African Craft and related trades workers in the formal economy have increased with 8 percentage points from 60,07 per cent in 1996 to 68,35 per cent in 2005. The table also shows that there are more African Craft and related trades workers (than other races) active in the informal economy. This can be ascribed to South Africa's historical deep-seated inequalities where Africans were the most marginalized.

**Table 4: Craft and related trades workers by population group (1996 – 2005)**

Total	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	60.79	65.66	67.25	68.73	69.65	69.53	70.63	69.52	72.44	74.55
Coloured	16.23	13.85	12.89	12.73	12.80	11.56	11.83	13.51	11.21	11.74
Indian	4.48	3.53	3.37	3.15	3.01	3.61	2.66	3.23	2.76	2.38
White	18.51	16.96	16.38	15.37	14.23	15.13	14.88	13.67	13.53	11.15
Unspecified	0.00	0.00	0.10	0.02	0.32	0.17	0.00	0.07	0.06	0.19
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Formal sector	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	60.07	62.21	64.53	64.42	64.13	61.08	63.45	61.77	65.33	68.35
Coloured	16.71	14.59	14.08	14.02	14.07	13.75	14.41	17.39	14.27	14.37
Indian	4.46	4.02	3.22	3.23	3.81	4.73	3.19	3.14	3.03	2.56
White	18.76	19.18	18.03	18.30	17.82	20.24	18.95	17.61	17.32	14.47
Unspecified	0.00	0.00	0.14	0.03	0.18	0.20	0.00	0.10	0.05	0.25
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Informal sector	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	67.81	77.91	76.83	78.18	81.35	84.41	86.22	85.79	85.79	87.30
Coloured	11.50	11.29	8.68	9.83	10.42	7.59	6.42	5.26	5.51	6.41
Indian	4.64	1.55	3.50	3.01	1.57	1.61	1.61	3.32	2.31	1.99
White	16.04	9.24	10.98	8.97	6.06	6.27	5.75	5.64	6.30	4.23
Unspecified	0.00	0.00	0.00	0.00	0.60	0.12	0.00	0.00	0.10	0.07
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It was stated earlier that although growth in the employment of Craft and related trades workers took place, it mainly occurred in the informal sector of the economy. This growth can be attributed to a substantial increase in the number of Africans who were employed as craft and related trades workers (from 75 525 in 1996 to 505 205 in 2005). The share of African craft and related trades workers in the informal sector of the economy thus have increase with 20 percentage points from 67,81 percent in 1996 to 87,30 per cent in 2005.

**Figure 2: Craft and related trades workers by population group (1996 – 2005)**

Women have increased their share amongst the employed from 39,93 per cent in 1996 to 42,55 per cent in 2005 (Table 5). In comparison with total employment, only 16,75 per cent of

all Craft and related trades workers were women in 2005 (down from 17,97% in 1996). It is only as Other craft and related trades workers that women dominate. By far the majority of Extraction and building trades workers (94,47 per cent); Metal, machinery and related trades workers (96,34 per cent) and of Precision, handicraft, printing and related trades workers (62,51 per cent) are men.

**Table 5: Gender distribution of all employed people (1996 – 2005)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
All employed	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	60.07	61.01	60.22	57.96	54.50	55.91	56.18	55.44	58.32	57.41
Female	39.93	38.99	39.78	41.97	45.49	44.09	43.79	44.56	41.64	42.55
Unspecified	0.00	0.00	0.00	0.07	0.01	0.00	0.03	0.00	0.04	0.04

**Table 6: Craft and related trades workers by gender (1996 – 2005)**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
7: Craft and related trades workers	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	82.03	82.70	85.76	84.56	84.74	83.42	83.53	84.20	84.65	83.25
Female	17.97	17.30	14.24	15.40	15.26	16.58	16.47	15.80	15.35	16.75
Unspecified	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
71: Extraction and building trades workers	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	93.29	94.61	97.02	95.95	95.45	93.69	94.80	92.49	94.55	94.47
Female	6.71	5.39	2.98	3.96	4.55	6.31	5.20	7.51	5.45	5.53
Unspecified	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00
72: Metal, machinery and related trades workers	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	94.40	96.15	97.84	95.94	97.68	96.99	96.83	96.21	96.58	96.34
Female	5.60	3.85	2.16	4.06	2.32	3.01	3.17	3.79	3.42	3.66
Unspecified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73: Precision, handicraft, printing and related trades workers	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	72.32	70.54	70.82	70.19	72.52	62.33	61.96	55.70	62.06	62.51
Female	27.68	29.46	29.18	29.81	27.48	37.67	38.04	44.30	37.94	37.49
Unspecified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
74: Other craft and related trades workers	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Male	41.10	38.75	41.89	32.41	37.22	33.65	34.60	42.30	39.38	37.89
Female	58.90	61.25	58.11	67.59	62.78	66.35	65.40	57.70	60.62	62.11
Unspecified	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

In general Craft and related trades workers are relatively young: around 80 per cent are younger than 50. This can be attributed to the large number of matriculants and FET college graduates entering the occupation and this will be highlighted in the supply section. But it will be seen later on that qualified artisans are older.

**Table 7: Age distribution of Craft and related trades workers (1996 – 2005)**

Age between	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
15 and 19	1.24	0.98	1.64	1.80	1.16	1.35	1.51	1.76	0.97	1.52
20 and 24	10.06	9.07	8.70	9.12	8.72	7.78	8.56	7.75	9.75	10.37
25 and 29	14.82	14.85	17.53	14.83	14.40	13.74	14.56	13.68	14.85	15.25
30 and 34	18.17	18.97	18.21	17.36	16.20	16.84	16.32	15.55	18.27	19.37
35 and 39	16.23	17.34	17.20	18.65	17.27	17.03	17.61	17.08	14.33	13.71
40 and 44	13.02	15.26	14.20	13.91	14.79	14.53	15.46	15.43	13.08	12.22
45 and 49	11.46	10.37	9.88	10.77	11.78	12.83	11.72	12.78	10.79	10.87
50 and 54	7.02	6.98	6.53	6.39	7.91	7.77	7.13	7.58	9.54	7.36
55 and 59	4.60	3.87	3.93	4.22	4.78	4.25	4.07	4.83	4.79	5.13
60 and 64	2.11	1.34	1.28	1.54	1.87	2.49	1.82	2.69	2.15	2.43
65 and 69	0.84	0.87	0.51	0.67	0.69	0.72	0.62	0.41	0.98	0.92
70 and older	0.44	0.11	0.39	0.44	0.33	0.51	0.34	0.42	0.34	0.49
Unspecified	0.00	0.00	0.00	0.30	0.12	0.18	0.28	0.05	0.15	0.35
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Not all craft and related trades workers are qualified Artisans. There are five regulatory conditions that govern 'successful completion' of an apprenticeship. These conditions are prescribed by the Minister (from Government Gazette No. 2527 of 9 September 1977):

- **Entry requirements:** the minimum age and educational qualifications for commencing apprenticeship shall be 16 years and Standard 7- although Section 17 allows for 15 year old persons to become apprentices
- **Period of apprenticeship:** from 3 to 5 years depending on the designated trade
- **Formal qualifications:** National Certificate, Part 2. (Nated 190/191- N1-N6)
- **Workplace experience:** as prescribed by the Minister and linked to the period of apprenticeship
- **External assessment:** successful completion of a qualifying trade test

Although the highest level of education<sup>3</sup> is enumerated by Stats SA during surveys, no specific provision is made for the identification of workers who have passed a trade test or for example those who have obtained a Government Certificate of Competency (Government Ticket).

In an attempt to estimate the number of qualified artisans currently working in the South African labour market, the highest level of education captured in the OHS and the LFS databases (1996 – 2005) were recoded to form four broad categories of qualifications, namely:

- "Unqualified": which includes "No Schooling"; Grade 1 up to Grade 11 with no additional Certificate/Diploma
- Matriculants: which includes Grade 12/Std 10/Matric with no additional Certificate/Diploma or Degree

<sup>3</sup> I.e. in terms of Grades passed, and in terms of certificates, diplomas or degrees obtained

- “Under qualified”: this category includes NI-NIII, Diploma/Certificate with less than Grade 12/Std 10
- “Qualified”: which includes Grade 12/Std 10 plus Diploma/Certificate or Degree

The number of craft and related trades workers was cross tabulated with the newly created highest level of education variable (presented in Table 8).

**Table 8: Highest level of education obtained by craft and related trades workers according to the OHS and the LFS databases (1996 – 2005)**

Year	Total	“Un-qualified”	Matriculants	“Under qualified”	“Qualified”	Unspecified
1996	1 205 170	894 843	189 801	57 608	52 491	10 427
1997	1 329 353	985 304	212 067	37 816	90 968	3 198
1998	1 348 203	1 003 395	233 665	37 495	71 874	1 775
1999	1 391 384	993 685	246 453	45 275	58 291	47 679
2000	1 535 889	1 125 258	244 222	70 407	73 012	22 989
2001	1 448 963	1 080 098	234 186	52 255	57 910	24 514
2002	1 416 671	1 006 146	278 978	61 318	49 877	20 352
2003	1 455 731	1 018 919	312 213	40 650	68 075	15 874
2004	1 554 683	1 087 137	318 789	56 203	62 732	29 822
2005	1 769 253	1 246 521	378 968	56 009	63 483	24 273

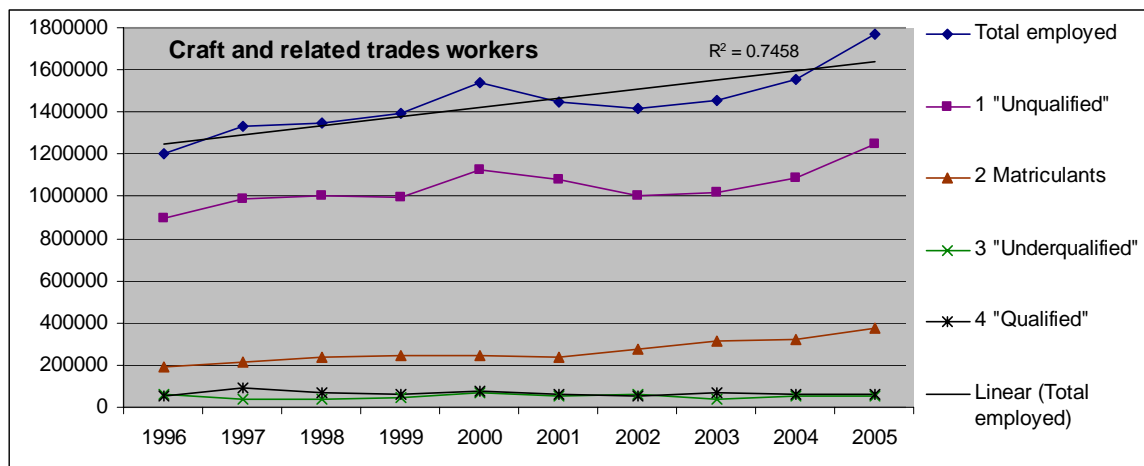
Based on a narrow definition for “qualified” artisans (i.e. Grade 12/Std 10 plus Diploma/ Certificate or Degree), it is estimated that there were a total of 63 483 qualified artisans who have practiced their skills in both the formal and informal economy of the country in 2005.

A person can enter his/her theoretical training to become an artisan (i.e. at a technical college or training institute) with a Grade 10/Standard 8 qualification with Mathematics, Physical Science and a Language as the minimum requirement. A further 56 009 craft and related trades workers reported in 2005 having obtained an NI-NIII qualification, or a Diploma/Certificate with less than Grade 12/Std 10. If this group is also accepted to be qualified artisans then a total of 119 492 were working in the country in 2005. This might be an under estimation if compared to the total number of artisans who have passed their trade test over the years and who still might be practicing in 2005 (see below).

It has to be noted, that on average, the number of qualified artisans stayed constant (attributable to the decline i.e. since 1985 in the number of artisans who have passed the trade test – see section on supply), while the number of “unqualified” people and matriculants who were employed as craft and related trades workers have increased over the 10 years under review (Figure 2). The stagnation in the supply of qualified artisans, while there is a clear indication of an increase in the demand based on employment explains the claims made that there is a “dire” need for qualified artisans in the country.



**Figure 3: Level of education of craft and related trades workers (1996 – 2005)**



Furthermore, “under qualified” and “qualified” Artisans are mainly white and are aging, while the “Unqualified” and Matric craft and related trade workers are mainly African. This can be explained by the historical legacies of the apartheid training system where most Blacks were excluded from the apprenticeship system. However, the fact that they are decreasing (by 2005 African “Qualified” constituted nearly half of all Artisans) may point at whites not entering the occupation and/or they are aging.

**Table 9: Highest level of education obtained by craft and related trades workers by population group (1996 – 2005)**

All Crafts	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	60.79	65.66	67.32	68.74	69.87	69.65	70.63	69.56	72.49	74.68
Coloured	16.23	13.85	12.91	12.73	12.84	11.58	11.83	13.52	11.22	11.76
Indian	4.48	3.53	3.38	3.15	3.01	3.62	2.66	3.24	2.76	2.38
White	18.51	16.96	16.39	15.38	14.28	15.16	14.88	13.68	13.54	11.17
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
"Unqualified"	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	70.62	75.04	77.53	78.32	79.02	78.51	80.51	78.86	81.55	82.08
Coloured	17.77	15.25	13.44	14.20	13.11	11.90	11.28	14.12	12.01	11.52
Indian	3.95	2.70	2.31	1.95	2.21	3.00	2.06	2.10	1.46	1.34
White	7.67	7.01	6.72	5.53	5.67	6.59	6.15	4.92	4.98	5.06
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Matric	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	40.01	46.17	41.87	46.40	51.93	48.42	51.71	52.61	56.18	62.50
Coloured	12.11	9.78	10.57	9.09	11.97	12.10	13.31	12.23	10.30	11.65
Indian	6.89	7.98	7.55	7.10	5.34	4.47	4.62	6.33	6.33	5.13
White	40.98	36.07	40.01	37.41	30.76	35.01	30.37	28.82	27.20	20.72
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
"Under qualified"	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	12.13	28.14	26.60	19.45	24.93	22.80	25.54	21.04	24.67	33.22
Coloured	11.38	17.39	11.74	10.84	12.63	4.96	12.60	14.11	10.52	10.62
Indian	3.28	2.55	3.93	6.62	2.85	6.93	2.77	2.09	7.81	0.57
White	73.22	51.92	57.73	63.09	59.60	65.32	59.09	62.77	57.00	55.60
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

"Qualified"	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	20.03	25.11	29.38	32.11	30.17	29.14	30.47	33.70	40.35	46.20
Coloured	12.72	6.37	12.40	5.45	10.28	8.11	10.48	10.68	3.06	8.56
Indian	6.31	2.60	4.56	4.58	7.82	8.32	4.80	7.38	3.93	9.00
White	60.94	65.91	53.66	57.85	51.73	54.44	54.25	48.24	52.65	36.23
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

### Age distribution

From Table 10 it can be seen that around 60 per cent of all craft and related trades workers were younger than 40 years between 1996 and 2005.

**Table 10: Age distribution of all Craft and related trades workers (1996 – 2005)**

Age between	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
15 and 19	1.24	0.98	1.64	1.80	1.16	1.35	1.51	1.76	0.97	1.52
20 and 24	10.06	9.07	8.70	9.12	8.72	7.78	8.56	7.75	9.75	10.37
25 and 29	14.82	14.85	17.53	14.83	14.40	13.74	14.56	13.68	14.85	15.25
30 and 34	18.17	18.97	18.21	17.36	16.20	16.84	16.32	15.55	18.27	19.37
35 and 39	16.23	17.34	17.20	18.65	17.27	17.03	17.61	17.08	14.33	13.71
40 and 44	13.02	15.26	14.20	13.91	14.79	14.53	15.46	15.43	13.08	12.22
45 and 49	11.46	10.37	9.88	10.77	11.78	12.83	11.72	12.78	10.79	10.87
50 and 54	7.02	6.98	6.53	6.39	7.91	7.77	7.13	7.58	9.54	7.36
55 and 59	4.60	3.87	3.93	4.22	4.78	4.25	4.07	4.83	4.79	5.13
60 and 64	2.11	1.34	1.28	1.54	1.87	2.49	1.82	2.69	2.15	2.43
65 and 69	0.84	0.87	0.51	0.67	0.69	0.72	0.62	0.41	0.98	0.92
Age 65 +	0.44	0.11	0.39	0.44	0.33	0.51	0.34	0.42	0.34	0.49
Unspecified	0.00	0.00	0.00	0.30	0.12	0.18	0.28	0.05	0.15	0.35
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Younger 40	60.51	61.21	63.28	61.76	57.75	56.73	58.56	55.81	58.18	60.22
40 and older	38.21	37.82	35.82	36.83	41.12	41.87	40.20	43.31	40.35	38.00

### Points to note:

- Unqualified craft and related trades workers are older
- Craft and related trades workers with Matrics are young and it will be shown in supply section below that the proportion of Matrics working as Craft and related trades workers have increased from 15,20 per cent of all craft and related trades workers in 2000 to 21,20 per cent in 2005.
- "Qualified" Artisans are relatively young: 67,14 per cent were younger than 40 years in 2005. This may relate to the FET output – see supply section below. However, Indlela data on the apprentices who have passed their trade test (see supply section) shows that Artisans are aging: it is estimated that nearly three-quarters (72,94 per cent) of Artisans are 40 years and older.

**Table 11: Education levels of craft and related trades workers younger than 40 years (2000 – 2005)**

Younger than 40	2000	2001	2002	2003	2004	2005
All Craft and related trades workers	57.75	56.73	58.56	55.81	58.18	60.22
Unqualified	52.88	51.80	53.96	49.79	52.98	55.58
Matric	78.43	76.74	75.79	74.69	74.70	74.74
"Under qualified"	62.38	63.79	65.88	69.55	62.97	59.77
"Qualified"	61.67	62.95	52.46	53.10	65.46	67.14

"Qualified": This includes Grade 12/Std 10 plus Diploma/Certificate or Degree

The fact that Artisans are ageing mainly applies to white craft and related trades workers. Mainly whites who were allowed to qualify as Artisans – before blacks were allowed – are indeed getting old now (Table 12). Encouraging to see majority of African and coloured craft and related trades workers are younger than 40 (although no increases in recent output of Artisans, but increases in FET output) it does point to blacks getting opportunities to qualify as Artisans.

**Table 12: Population group distribution of “qualified” craft and related trades workers younger than 40 (2000 – 2005)**

“Qualified” and younger than 40	2000	2001	2002	2003	2004	2005
African	69.49	77.30	78.12	56.93	81.58	78.64
Coloured	52.05	70.45	74.33	65.09	71.07	92.71
Indian	42.36	60.74	49.61	73.40	96.34	64.79
White	60.62	52.90	33.32	44.89	48.43	49.83
Total	61.67	62.95	52.46	53.10	65.46	67.14

Compared to workers in other occupations, “qualified” craft and related trades workers are relatively young.

**Table 13: Proportion of under 40’s workers by occupation (2005)**

Under 40	All workers	“Qualified”
All Occupation groups	63.78	58.78
1: Legislators, senior officials and managers	44.00	47.41
2: Professionals	55.81	55.60
3: Technicians and associate professionals	56.36	54.86
4: Clerks	65.57	76.16
5: Service workers and shop and market sales workers	70.39	72.95
6: Skilled agricultural and fishery workers	43.20	44.66
7: Craft and related trades workers	60.22	67.14
8: Plant and machine operators and assemblers	52.78	68.16
9: Elementary occupations	56.71	68.85

## THE SUPPLY OF ARTISANS

The current supply of labour includes all those who are either working or looking for work, that is, all those who are participating in the labour force (GNB, 1998, LSC, 2005). Unemployed people with qualifications relevant to the profession under review may point to an oversupply of skills or to a mismatch in the provision of skills. The supply of skills can also be derived from graduation trends and availability. Graduation trends refer to the number of qualifications awarded within a specific academic year. The number of graduates of working-age (15 – 65 year old) that have accumulated over the years provides an indication of the current availability of the number of people with qualifications in a particular occupation.

### **Supply derived from employed and unemployed Craft and related trades workers**

The same methodology used to estimate the number of qualified artisans currently working in the South African labour market was used to estimate the current supply

of Artisans (employed and unemployed): The highest level of education captured in the LFS databases (2000 – 2005) were recoded to form four broad categories of qualifications, namely unqualified; matriculants; under qualified and qualified. Unemployed Craft and related trades workers were identified by using the “previous occupation” variable on the LFS.

The number of workers who have worked or who have seek employment as craft and related trades workers have increased from 1,8 million in 2000 to 2 million in 2005 (LFS September 2000 and 2005) (Table 14). However, it was shown in the Section on demand that the majority of the employed craft and related trades workers could not be accepted as qualified Artisans. The combined profile of employed and unemployed craft and related trades workers is similar: nearly two-quarters were unqualified in 2005. A fifth of all craft and related trades workers in 2005 have obtained a Matriculation qualification. Matrics working or seeking work as craft and related trades workers have increased from 15,20 per cent in 2000 to 21,20 per cent in 2005.

**Table 14: Employed and unemployed craft and related trades workers, by level of education (2000 – 2005)**

	2000	2001	2002	2003	2004	2005
Unqualified	1382273	1374361	1259881	1243434	1292926	1434833
Matric	275471	268282	317454	351482	360202	419759
Under qualified	73846	58546	65373	42647	60323	60262
Qualified	80542	63718	54650	73605	65418	65052
Total	1812132	1764907	1697358	1711168	1778869	1979906
% Distribution	2000	2001	2002	2003	2004	2005
Unqualified	76.28	77.87	74.23	72.67	72.68	72.47
Matric	15.20	15.20	18.70	20.54	20.25	21.20
Under qualified	4.08	3.32	3.85	2.49	3.39	3.04
Qualified	4.44	3.61	3.22	4.30	3.68	3.29
Total	100.00	100.00	100.00	100.00	100.00	100.00

According to LFS (September) data, there were 234 925 craft and trade trades workers who could not find employment in 2005. The question is: can the unemployed craft and related trades workers plug the shortage of Artisan skills? Unlikely, if it is considered that 80,16 per cent of all craft and related trades workers who was unemployed in 2005 was “unqualified” which includes “No Schooling”; Grade 1 up to Grade 11 with no additional Certificate/Diploma. A further 17,36 per cent only had Matric. The fact that very few “under qualified” and “qualified” craft and related trades workers were unemployed confirms the demand for Artisans: only 2,48 per cent of all unemployed craft and related trades workers have obtained NI-NIII, Diploma/Certificate with less than Grade 12/Std 10 or Grade 12/Std 10 plus Diploma/Certificate or Degree.

**Table 15: Education levels of unemployment craft and related trades workers (2000 – 2005)**

	2000	2001	2002	2003	2004	2005
Unqualified	257015	294263	253735	224515	205789	188312
Matric	31249	34096	38476	39269	41413	40791
Under qualified	3439	6291	4055	1997	4120	4253
Qualified	7530	5808	4773	5530	2686	1569
Total	299233	340458	301039	271311	254008	234925

	2000	2001	2002	2003	2004	2005
Unqualified	85.89	86.43	84.29	82.75	81.02	80.16
Matric	10.44	10.01	12.78	14.47	16.30	17.36
Under qualified	1.15	1.85	1.35	0.74	1.62	1.81
Qualified	2.52	1.71	1.59	2.04	1.06	0.67
Total	100.00	100.00	100.00	100.00	100.00	100.00

The increase in the demand for craft and related trades workers – at a compound annual growth rate (CAGR) of 4,36 per cent reported in the previous section on demand – has contributed to a decrease in the number of unemployed craft and related trades workers. In 2000, nearly 300 000 craft and related trades workers were reported to have been actively looking for a job. This figure dropped to 235 000 in 2005, signifying a compound annual decrease of -4,7 per cent in unemployment among craft and related trades workers.

Clearly the demand for craft and related trades workers is immense (even though they are not qualified Artisans). Table 16 shows that the unemployment rate among “unqualified” craft and related trades workers have dropped from 18,59 per cent in 2000 to 13,12 per cent in 2005. The unemployment rate among Matrics who were looking for craft and related trades work decreased from 11,34 per cent to 9,72 per cent. The unemployment rate among “qualified” craft and related trades workers dropped significantly (from 9,35 per cent in 2000 to 2,41 per cent in 2005). Although the unemployment rate for “under qualified” craft and related trades workers showed an increase (from 4,66 per cent to 7,06 per cent) the increase in numbers was low (from 3 439 workers in 2000 to 4 253 workers in 2005).

**Table 16: Unemployment rate of craft and related trades workers by level of education (2000 – 2005)**

Unemployment rate	2000	2001	2002	2003	2004	2005
Unqualified	18.59	21.41	20.14	18.06	15.92	13.12
Matric	11.34	12.71	12.12	11.17	11.50	9.72
Under qualified	4.66	10.75	6.20	4.68	6.83	7.06
Qualified	9.35	9.12	8.73	7.51	4.11	2.41
Total	16.51	19.29	17.74	15.86	14.28	11.87

Although the pressing demand for artisan skills creates employment opportunities for lower qualified craft and related trades workers there still were a total of 229 103 unemployed workers who have worked as craft and related trades workers before and who were looking for a job in 2005. If it is considered that around 2 million people were working – or wanted to work as craft and related trades workers in 2005 but that 93,67 per cent were not qualified artisans then there were around 125 000 craft and related trades workers who have obtained NI-NIII, Diploma/Certificate with less than Grade 12/Std 10 qualifications or a Grade 12/Std 10 plus Diploma/Certificate or Degree.

### **Availability of Artisans**

Availability refers to the accumulated number of individuals over a period of time that has obtained qualifications in a particular field of study. One source that can be used to estimate the number of artisans in the country is the Indlela register of the number of people for whom trade testing was arranged and those who have passed the trade test. It has to be noted that trends data is not available in terms of race, gender, age, or field of qualification.

From Table 17 it can be seen that a total of 270 586 apprentices have qualified as artisans between 1970 and 2004. An effort to quantify the number of artisans that might be available to practice their skills in the country has to consider the perceived aging of the pool of artisans. In theory it might take a person up to six years to qualify as an artisan (if it is considered that a person can enter into an apprenticeship at the age of 17, receive three years of theoretical training, obtain workplace experience for a further three years before a trade test is arranged). It is therefore safe to set the average age for a person to qualify as an artisan at 25 years. If this assumption is accepted then the Class of 1972 has reached retirement age (60) and the Class of 1982 would have been around 50 years old in 2007. If the 97 750 artisans that have qualified between 1970 and 1982 (36.13% of all artisans on the Indlela register) are excluded on the basis that they are aging, then an estimated 172 836 artisans might be available to the country.

It has to be acknowledged that a large number of artisans might have been lost due to migration and that a large number of artisans might be working overseas due to the global shortage of artisans. If it is assumed that around 50 000 of the artisans that have qualified since 1983 have left the country or are working abroad then there could be around 120 000 qualified artisans in the country: a figure very close to the number estimated based on the analysis of Stats SA data.

**Table 17: Total number of apprentices qualifying as artisans, 1970 – 2004**

Year	Arranged	Passed	Total	Year	Arranged	Passed	Total
1970	14 500	5 500	20 000	1988	18 000	11 000	29 000
1971	16 500	6 050	22 550	1989	15 500	8 000	23 500
1972	16 000	7 000	23 000	1990	15 000	7 500	22 500
1973	15 950	7 000	22 950	1991	14 900	7 200	22 100
1974	18 100	8 000	26 100	1992	15 050	8 000	23 050
1975	18 500	8 050	26 550	1993	16 000	9 550	25 550
1976	17 000	8 050	25 050	1994	11 800	7 000	18 800
1977	18 000	8 500	26 500	1995	9 000	5 000	14 000
1978	19 000	9 500	28 500	1996	5 000	3 000	8 000
1979	18 400	9 600	28 000	1997	8 910	4 874	13 784
1980	18 400	10 000	28 400	1998	9 403	4 933	14 336
1981	18 300	10 500	28 800	1999	9 517	5 145	14 662
1982	19 500	11 000	30 500	2000	11 000	5 600	16 600
1983	22 100	12 000	34 100	2001	5 552	3 191	8 743
1984	22 500	12 000	34 500	2002	6 448	2 916	9 364
1985	26 000	13 500	39 500	2003	6 343	2 779	9 122
1986	24 950	13 100	38 050	2004	6 157	2 548	8 705
1987	23 000	13 000	36 000	Total	530 280	270 586	800 866

Source: Indlela

Table 18 below shows that qualified artisans are ageing and this could be attributed to the decline in apprenticeship training overtime.

**Table 18: Estimated age distribution of artisans (2004)**

Age between	Passed	Distribution	Arranged	Distribution
26 and 29	11 434	4.31	24 500	4.75
30 and 34	23 552	8.88	43 830	8.50
35 and 39	36 750	13.86	66 750	12.94
40 and 44	52 600	19.84	96 450	18.70
45 and 49	59 000	22.26	108 400	21.02

Age between	Passed	Distribution	Arranged	Distribution
50 and 54	45 650	17.22	90 800	17.60
55 and 59	36 100	13.62	85 050	16.49
Total 26 - 59	265 086	100.00	515 780	100.00
26 and 39	71 736	27.06	135 080	26.19
40 and 59	193 350	72.94	380 700	73.81

A second source from which availability and graduation trends can be obtained is SETAs through the Skills Development Act (SDA), finally promulgated in 1998. The Act proposed that learnerships would incorporate traditional apprenticeships but did not say that apprenticeships would no longer be allowed. It repealed a number of the sections of the 1990 Manpower Training Act but retained a number of sections relating to apprenticeship training. As a result, apprentices continue to be trained under the two routes of the Manpower Training Act of 1981: S (13) MTA and S (28) MTA.

- Chapter 2, Section 13 of the Manpower Training Act of 1981 refers to people who have been formally indentured as apprentices, who meet the age criteria, who serve the full time period and who pass the trade test as prescribed by the Minister.
- Chapter 2, Section 28 of the Manpower Training Act of 1981 refers to people not indentured under Section 13 but who satisfy the Registrar of Training that they have gained sufficient work experience over an adequate period of time, and can therefore write a trade test, after which (if they pass), they can become qualified artisans.

Table 18 thus highlights the number of apprenticeships enrolled in these two routes during the period 1 April 2001 until 31 March 2005. This period constitutes the four-year period of the First Phase of the implementation of the National Skills Development Strategy (NSDS). A total of 21 237 learners were indentured as apprentices in the four year period, and counted together with the number of employed people enrolled in apprenticeships (S28) during the same four year period, gives a grant total of 36 703.

**Table 19: Total number of Apprenticeships (S13 and S28), 1 April 2001 to 31 March 2005**

SETA:	Apprenticeships enrolled between 1 April 2001 and 31 March 2005	Apprenticeships enrolled between 1 April 2001 and 31 March 2005	Total number of apprentices enrolled between 1 April 2001 and 31 March 2005
SETA:	Section 13, MTA	Section (28) MTA	Sections 13 and 28
FASSET	0	0	0
BANKSETA	0	0	0
CHIETA	929	929	1858
CTFL	88	35	123
CETA	351	0	351
DIDTETA	1529	0	1529
ETDPSETA	0	0	0
ESETA	568	191	759
FOODBEV	90	0	90
FIETA	586	55	641
HWSETA	0	0	0
ISETT	0	0	0
INSETA	0	0	0

	Apprenticeships enrolled between 1 April 2001 and 31 March 2005	Apprenticeships enrolled between 1 April 2001 and 31 March 2005	Total number of apprentices enrolled between 1 April 2001 and 31 March 200
SETA:	Section 13, MTA	Section (28) MTA	Sections 13 and 28
LGWSETA	1991	619	2610
MAPPP	1408	167	1575
MQA	3494	402	3896
MERSETA	6935	5642	12577
POSLEC	0	0	0
PAETA	5	92	97
PSETA	20	5887	5907
SETASA	38	0	38
SERVICES	808	789	1597
THETA	0	0	0
TETA	2397	658	3055
W&RSETA	0	0	0
<b>TOTAL</b>	<b>21237</b>	<b>15466</b>	<b>36703</b>
<b>AVERAGE ENROLMENT PER ANNUM</b>	<b>5309</b>	<b>3866</b>	<b>9175</b>

*Source: Department of Labour, 2006a*

### **Trends in supply from public FET colleges**

Further Education and Training (FET) colleges are another important avenue for technical skills development at the intermediate level, with Minister of Education, Naledi Pandor describing them as having taken a central role to the delivery of priority skills needed in South Africa. The new curriculum for FET colleges that will lead to National Certificate (Vocational) (NC (V)) qualification is a comprehensive and coordinated response to this skills development agenda.

The Department of Education research shows that the previous programmes have some value, but are generally outdated, including the National Technical Education, better known as Nated programmes (N1 to N6), some of which have not be revised since the 1980s. the following underpin this;

- the current programmes cause a separation of theory and practice, giving rise to irrelevant programmes that fail to meet the needs of students and the changing demands of the economy;
- the poorly articulated programmes and qualifications inhibit student mobility across programmes and providers or learning sites; and
- students exiting the system have to repeat passed subjects when they enter the system.

Other programmes to be replaced are the National Certificate Orientation or N1, which was the orientation programme used to bridge the maths and science gap some students might suffer from.; the National Intermediate Certificate, which is parallel to grade 11, and the National Senior Certificate, parallel to the Senior Certificate, commonly known as “matric”.

In replacing these programmes, the NC (V) is a response to scarce and high-demand skills, and also heeds calls from employers saying they want “thinking” employees. In



the 21<sup>st</sup>-century workplace, high levels of written and spoken communication skills, work ethics and personal management are highly valued.

Mastery of these so-called “soft skills” is based on a through grounding in the fundamentals of reading, writing, calculating and basic IT abilities. This is why the NC (V) comprises three compulsory subjects: language (first additional), mathematics or mathematical literacy and life skills (which includes IT) alongside the four vocational or specialized subjects. Both the compulsory and vocational subjects are spread across 11 programmes or vocational fields of study, including management, marketing, office administration, primary agriculture, tourism, civil engineering and building construction, electrical infrastructure construction, engineering and related design, finance, economics and accounting, hospitality and information technology and computer science.

The 11 programmes fall into the priority areas of Asgisa. The NC (V) has been phased out at FET colleges from January 2007. the qualification, offered at NQF levels 2, 3 and 4, allows for its staggered implementation. This means the NC (V) at NQF level 2 is being introduced in 2007, followed by NQF level 3 in 2008 and NQF level 4 in 2009. Unlike the trimester N courses, the NC (V) courses are one-year long programmes. This means a certificate will be awarded after a successful completion of each NQF level, following a national external examination. This structure allows students the flexibility to complete a certificate on one NQF level, work for a year and pick up their studies again.

Although the new curriculum is based on existing unit standards, the NC (V) is a non-unit standard qualification. The aim is not to train people for individual companies, but to train them for a sector. Because it is programme driven (not subject driven), it offers a more comprehensive (generic) training than unit-standard based qualifications.

The NC (V) has been “marketed” by the Department of Education as the solution lack of artisan development in South Africa, although no workplace training exist that is currently required within the NC (V) training curriculum. This makes it difficult to make an assessment on the actual contribution of FET colleges to artisan development. This has led to a further blurring and confusion as to what are the training routes or pathways to becoming an artisan.

This has also been further complicated by the fact that the introduction of the NC(V) and the phasing out of the NATED (N1 & N2) negates the traditional path to becoming an artisan. In the old system, apprenticeships acquired their theoretical component through the National Certificates Part 1 and 2 (NATED N1 & N2).

The Department of Labour through it Artisan Development Committee has announced four routes people could take to train as artisans, which were gazetted towards the end of December 2007 for public comment before being legislated. This means that the output from FET colleges alone will not be representative of the number of qualified artisans.

The four routes are as follows:

- Apprenticeship Route
- Recognition to Prior Learning (RPL) Route
- Learnership Route
- Internship or Skills Programme Route (NCV plus)

An overview that forms the basis of a more detailed route description is described below:

### **Apprenticeship Route**

A learner that registers as an apprenticeship with a SETA on an NQF registered artisan trade qualification that spends between 2 and 4 years on a single apprenticeship contract linked to a modular learning programme that ends in a trade test. This pathway has one entry and one exit point. Certification occurs at the end of the single contract period. Registration as an artisan occurs after successful completion of a trade test.

### **Learnership Route**

A learner that registers as a learnership with a SETA on an NQF registered artisan trade qualification that spends between 2 and 4 years on a multi learnership year contracts linked to a modular learning programme that ends in a trade test after completion of a highest NQF level qualification that needs to be achieved before undergoing a trade test. This pathway has multi entry and multi exit points. Certification occurs at the end of each completed contract period. Registration as an artisan occurs after successful completion of a trade test.

### **Internship or Skills Programme Route**

A learner that has relevant “National Certificate: Vocational (NCV)” that registers as an internship or a skills programme with a SETA on an NQF registered artisan trade qualification that spends an pre-determined period of time in the workplace on a single internship or skills programme contract that ends in a trade test. This pathway has one entry and one exit point. Certification occurs at the end of the NCV. Registration as an artisan occurs after successful completion of a trade test.

### **Recognition of prior learning route**

A learner registers as a Recognition of Prior Learning (RPL) Learner with the Institute for the National Development of Learnerships, Employment Skills and Labour Assessment (INDLELA) on an NQF registered artisan trade qualification that spends a pre-determined period of time on a single RPL contract that ends in a trade test. The RPL contract will guide the learner in the compilation of a portfolio of evidence that is assessed by INDLELA prior to undergoing the trade test. Certification occurs at the successful assessment and moderation of the portfolio of evidence. Registration as an artisan occurs after successful completion of a trade test.

The Artisan Development Coordinating Committee has proposed a new definition of an artisan as follows:

“Artisan” will mean a person that has been certificated as competent by a relevant Education and Training Quality Assurance body for a qualification registered on the National Qualifications Framework for a Trade listed by the Minister of Labour in the Skills Development Act as amended, which trade has a designation at occupation level on the Organising Framework for Occupations and the person is registered with the Registrar for Artisans as an Artisan for such a Trade (Endorsed by the Artisan Development Coordinating Committee on 29<sup>th</sup> June 2007)

It should be noted that these proposed routes are being continuously refined by ongoing discussions between SETA Coordination, Department of Labour and stakeholder groupings that make up members of the Artisan Development Coordination Committee. Once the learning route document is finalised as a stakeholder agreed policy document, it will be submitted for formal publication by the Department of Labour.

It is important to reiterate that FET college outputs graduating with an NC (V), still need to do their workplace experience through an internship or skills programme and write a trade test before they can be registered as a qualified artisan. There are concerns however, about the nature and form of the four routes proposed, coherent linkages and parity between the routes, how the routes will be viewed in the professional labour market as well as the management and administration of the quality assurance system of Trade Testing.

The DoE is currently updating FET colleges, mostly in modernising workshops and physical resources. It is aiming to finalise the updating of training programmes for 22 priority artisanships by the end of 2008 and set to aside R600 million for bursaries for FET students between 2007 and 2010. Partnerships are actively encouraged to ensure colleges are responsive to industry demand.

The 22 priority artisanships are:

- Engineering: Welders, Electricians, Fitters, Turners, Millwrights, Sheetmetal Workers, Biolermakers, Mechatronics, Mechanics, Toolmakers, Patternmakers
- Construction: Bricklayers, Plumbers, Carpenters, Joiners, Shutterhands, Steel fixers, Glaziers, Plasterers, Tilers
- Other: Sound technicians, Instrumentation and Electronics Technicians

Private and public FET colleges are already contributing to the development of artisan skills. Comprehensive data on the number of learners who have completed a **qualification** in a particular field of study is not available. No data available for private colleges. With regard to public FETs, the only data available from the Department of Education (DoE) on FET colleges are on **subjects** (called instructional offering) entered and passed. It is impossible to quantify FET output in terms of Artisan skills. However, an overview of trends in the total number of learners who have passed an exam in a particular occupation field (i.e. Construction Trades) does provide an indication of the contribution made.

Table 20 below shows the types of programmes offered at Public FET colleges.

Subjects in the non-technical fields were usually offered on a semester system. Individuals who are being trained in a technical occupational field get and obtain theoretical instruction through an FET institution to obtain study to obtain national certificate qualifications such as NTC 3 or NTC 4 (sometimes abbreviated further as N3 or N4) (Table 20). The NTC 3 courses have a content and conceptual level that is equivalent to the national educational certificate or matriculation certificate. To qualify as an artisan requires that students achieve the NTC 2 level, but in the newer technology programmes this minimum requirement can be raised to NTC3.

**Table 20: Types of programmes offered at Public FET colleges**

Programmes	Content
NC(V) Level 2 – 5	Theory and practical
N1 – N3	Theory
N4 – N6	Theory
SETA Level 1 – 5	Theory
Other HE	Theory
Other FE	Theory or practical or both

Source: Vinjevold (2007)

The subjects on offer from N4 to N6 are quite different to those that are available to candidates from N1 to N3. The principal difference is that a shift is made from

theoretical support for trade-related occupational training to an introduction to technical knowledge of more general fields. While the orientation to subject offerings at the N4 to N6 levels may be interpreted as a supplement to the traditional occupational trade courses designed for individuals to become artisans, it is also probably driven by FET institutions themselves as they attempt to advance a higher standard of instruction and but capture a wider segment of potential recruits to their programme offerings. A subsidy formula that awards institutions that have a higher proportion of graduations at the higher programme level (i.e. N6 instead of N3), may too have the effect of enhancing a supply-driven provision of academic credentials within the engineering fields.

In the FET context Artisan related skills are clustered under engineering studies. According to Vinjevold (2007), a total of 211 000 learners were enrolled at FET colleges in engineering studies in 2004 (Table 23). Learners in engineering studies constituted more than half (56,57 per cent) of total enrolment at FET colleges in 2004. Nearly two-thirds (62,09 per cent or 131 000) of engineering learners were enrolled at N1 – N3 Level. If all these engineering learners can be channelled into skills programmes in the workplace, then FET colleges can make a massive contribution towards the training of 50 000 artisans by 2010.

**Table 21: Enrolment in FET Colleges in 2004**

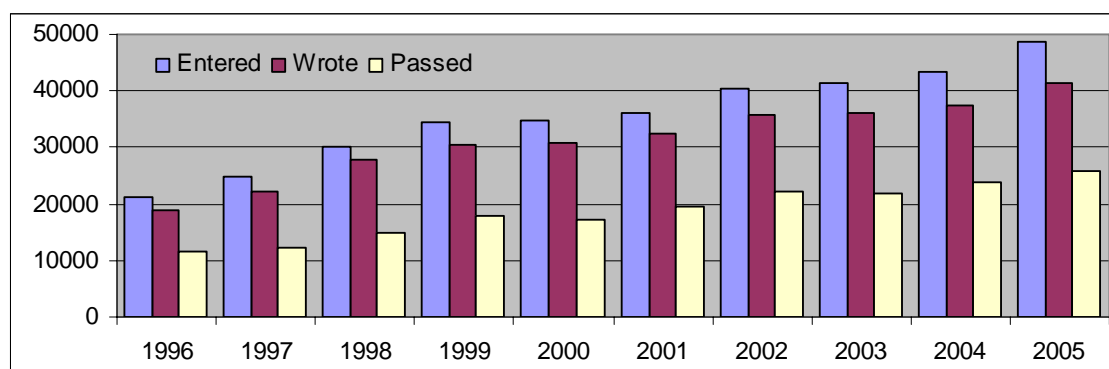
Programme	Business	Engineer	Other	Total
NIC/NSC	20 000	9 000	4 000	33 000
N1 – N3	13 500	131 000	6 500	151 000
N4 – N6	73 500	54 000	6 000	133 500
Other	9 500	17 000	29 000	55 500
Total	117 000	211 000	45 000	373 000
Programme	Business	Engineer	Other	Total
NIC/NSC	17.17	4.27	8.79	8.85
N1 – N3	11.59	62.09	14.29	40.48
N4 – N6	63.09	25.59	13.19	35.79
Other	8.15	8.06	63.74	14.88
Total	100.00	100.00	100.00	100.00
Distribution	31.23	56.57	12.20	100.00

Source: Vinjevold (2007)

## Level 0

The number of learners who have entered in, and who wrote and have passed Level 0 courses at public FET colleges have doubled between 1996 and 2005 (Figure 4). This growth calculates to a compound annual growth rate (CAGR) of 9,39 per cent.

**Figure 4: FET colleges Level 0 enrolments, exam writers and passes (1996 – 2005)**



A total of 186 803 learners have passed Level 0 exams in Mechanical Engineering Trades (49,20 per cent); Manufacturing Trades (27,51 per cent) and in Manufacturing Technicians (23,29 per cent) at public FET colleges between 1996 and 2005 (Table 22). A total of 355 466 learners have entered these three instructional offerings at Level 0, of which 312 777 (87,99 per cent) wrote the exams. On average, half (52,55 per cent) of those who have entered have passed their exams over the ten years under review.

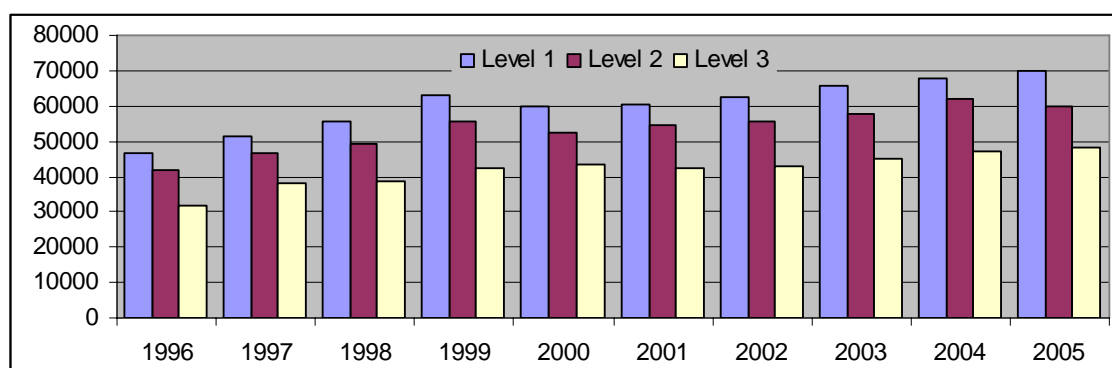
**Table 22: FET Level 0 enrolments and passes (1996 – 2005)**

	Entered	Wrote	Passed	Share of Occupational Field Passed			Total
				Mechanical Engineering Trades	Manufact-uring Trades	Manufact-uring Technicians	
1996	21 302	18 746	11 521	45.60	30.08	24.31	100.00
1997	24 724	22 116	12 176	51.26	24.91	23.83	100.00
1998	30 230	27 672	14 825	50.95	25.05	24.00	100.00
1999	34 442	30 524	17 801	52.23	25.61	22.16	100.00
2000	34 789	30 880	17 207	50.70	24.18	25.12	100.00
2001	36 256	32 329	19 584	49.13	28.25	22.62	100.00
2002	40 241	35 716	22 090	48.41	30.50	21.09	100.00
2003	41 412	36 092	21 937	49.64	27.98	22.39	100.00
2004	43 373	37 430	23 821	47.09	28.87	24.05	100.00
2005	48 697	41 272	25 841	48.06	27.76	24.17	100.00
Total	355 466	312 777	186 803	49.20	27.51	23.29	100.00
% of those Entered		87.99	52.55				
% of those who Wrote			59.72				
Accumulated passed (1996 – 2005)				91 912	51 389	43 502	186 803

### Level 1 – 3

The number of learners who have passed in each of Level 1; Level 2 and Level 3 exams in Engineering studies at public FET colleges have shown steady year-on-year increases between 1996 and 2005 (Figure 5).

**Figure 5: FET Level 1-3 passes in Engineering studies (1996 – 2005)**



The number of learners who passed Level 1 exams in engineering studies have increased from 46 872 to 69 720 at a compound annual growth rate (CAGR) of 4,51 per cent between 1996 and 2005 (Table 24). Nearly 1,4 million learners have entered engineering studies at Level 1 in public FET colleges between 1996 and 2005 of whom 602 974 (43,43 per cent) have passed the exams.

The number of learners who passed Level 2 exams in engineering studies have increased from 41 858 to 62 110 in 2004 and ended at 60 008 in 2005. These increases calculates to a compound annual growth rate (CAGR) of 4,08 per cent between 1996 and 2005 (Table 24). A total of 1,2 million learners have entered engineering studies at Level 2 in public FET colleges between 1996 and 2005 of whom 536 134 (45,82 per cent) have passed the exams.

The number of learners who passed Level 3 exams in engineering studies have increased from 31 776 to 48 081 at a compound annual growth rate (CAGR) of 4,71 per cent between 1996 and 2005 (Table 25). Nearly 1 million learners have entered engineering studies at Level 3 in public FET colleges between 1996 and 2005 of whom 419 780 (44,72 per cent) have passed the exams.

**Table 23: FET Level 1-3 enrollments and passes in Engineering studies (1996 – 2005)**

	Entered				Passed		
	Level 1	Level 2	Level 3		Level 1	Level 2	Level 3
1996	111 743	9 7356	71 045	1996	46 872	41 858	31 776
1997	122 704	10 5909	84 315	1997	51 347	46 825	38 050
1998	134 843	11 2310	87 004	1998	55 577	49 288	38 865
1999	141 367	11 6488	87 064	1999	62 978	55 413	42 552
2000	143 315	11 2586	88 118	2000	59 983	52 466	43 244
2001	141 751	11 5591	89 701	2001	60 513	54 628	42 284
2002	143 755	12 0791	101 794	2002	62 536	55 741	43 058
2003	146 863	12 5238	105 033	2003	65 496	57 797	44 918
2004	148 590	12 9514	111 398	2004	67 952	62 110	46 952
2005	153 597	13 4406	113 286	2005	69 720	60 008	48 081
Total	1 388 528	1 170 189	938 758	Total	602 974	536 134	419 780
CAGR	3.60	3.65	5.32	CAGR	4.51	4.08	4.71
					Level 1	Level 2	Level 3
Average rate of completions (1996 – 2005):					43.43	45.82	44.72

At an aggregated level, two occupation fields in engineering studies account for more than half of learner passes from Level 1 to Level 3: Mechanical Engineering Trades and Electronics and Telecommunications Trades (Table 23).

At Level 1, five out of 21 occupation fields accounts for 90 per cent of all examination passes registered: Mechanical Engineering Trades (44,00 per cent); Electronics and Telecommunications Trades (17,11 per cent); Electrician (13,91 per cent); Construction Trades (7,48 per cent) and Automotive Electricians and Mechanics (6,82 per cent).

At Level 2, six out of 21 occupation fields accounts for 90 per cent of all the passes. These are Mechanical Engineering Trades (33,76 per cent); Electronics and Telecommunications Trades (22,04 per cent); Electrician (13,94 per cent); Construction Trades (6,93 per cent); Telecommunications Trades (6,51 per cent) and Automotive Electricians and Mechanics (6,36 per cent).

No more than four occupation fields account for 90 per cent of learner passes in engineering studies at Level 3: Mechanical Engineering Trades (40,18 per cent); Electronics and Telecommunications Trades (34,17 per cent); Telecommunications Trades (8,10 per cent) and Construction Trades (6,88 per cent).

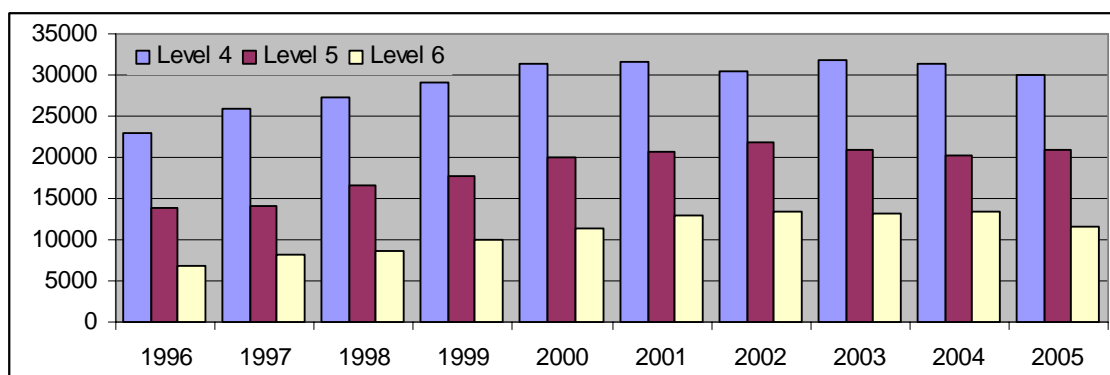
**Table 24: Occupation field in which Level 1 – 3 learners in engineering studies have passed exams (total accumulated: 1996 – 2005)**

Occupational field	Level 1	%	Level 2	%	Level 3	%
Mechanical Engineering Trades	265 802	44.00	180 976	33.76	168 648	40.18
Electronics and Telecommunications Trades	103 353	17.11	118 160	22.04	143 434	34.17
Telecommunications Trades	12 183	2.02	34 885	6.51	34 008	8.10
Construction Trades	45 189	7.48	37 179	6.93	28 880	6.88
Automotive Electricians and Mechanics	41 220	6.82	34 118	6.36	12 588	3.00
Electrician	84 001	13.91	74 746	13.94	10 340	2.46
Manufacturing Trades	4 588	0.76	2 523	0.47	6 757	1.61
Chemical Technician	7 767	1.29	5 636	1.05	4 789	1.14
Fabrication Engineering Trades	13 682	2.26	13 310	2.48	2 549	0.61
Mining Trades	6 205	1.03	4 332	0.81	2 075	0.49
Waste Water Plant Operator	1 107	0.18	671	0.13	1436	0.34
Aviation	653	0.11	888	0.17	906	0.22
Wood and Paper Manufacturing Trades	3 447	0.57	1 192	0.22	888	0.21
Panelbeaters and Vehicle Body Builders, Trimmers and Painters	3 162	0.52	2 093	0.39	798	0.19
Horticulturist	657	0.11	584	0.11	547	0.13
Textile, Clothing and Footwear Trades	1 455	0.24	23 202	4.33	415	0.10
Airconditioning and Refrigeration Mechanics	527	0.09	891	0.17	367	0.09
Food Trades	1 123	0.19	437	0.08	222	0.05
Manufacturing Technicians	247	0.04	142	0.03	91	0.02
Painting Trades	11	0.00	17	0.00	30	0.01
Wood Trades	7 702	1.27	152	0.03	12	0.00
Total	604 081	100.00	536 134	100.00	419 780	100.00

#### Levels 4 – 6

The number of learners who have passed in each of Level 4; Level 5 and Level 6 exams in Engineering studies at public FET colleges have shown steady year-on-year increases until 2001, after which it stayed relatively constant (Figure 6).

**Figure 6: FET Level 4-6 passes in Engineering studies (1996 – 2005)**



The number of learners who passed Level 4 exams in engineering studies have increased from 22 931 to 29 972 at a compound annual growth rate (CAGR) of 3,02 per cent between 1996 and 2005 (Table 24). A total of 617 753 learners have entered engineering studies at Level 4 in public FET colleges between 1996 and 2005 of whom 291 385 (43,58 per cent) have passed the exams.

The number of learners who passed Level 5 exams in engineering studies have increased from 13 792 to 21 734 in 2002 and ended at 20 958 in 2005. These increases calculates to a compound annual growth rate (CAGR) of 4,76 per cent between 1996 and 2005 (Table 26). A total of 397 026 learners have entered engineering studies at Level 5 in public FET colleges between 1996 and 2005 of whom 187 064 (48,79 per cent) have passed the exams.

The number of learners who passed Level 6 exams in engineering studies have nearly doubled from 6 906 to 13 518 in 2002, stayed relatively constant till 2004, but have declined to 11 515 in 2005. A compound annual growth rate (CAGR) of 4,76 per cent between 1996 and 2005 was registered (Table 25). A total of 244 703 learners have entered engineering studies at Level 6 in public FET colleges between 1996 and 2005 of whom 109 768 (41,34 per cent) have passed the exams.

**Table 25: FET Level 4-6 enrollments and passes in Engineering studies (1996 – 2005)**

	Entered			Passed		
	Level 4	Level 5	Level 5	Level 4	Level 5	Level 6
1996	50 808	30 194	16 537	1996	22 931	6 906
1997	57 639	33 084	19 440	1997	25 816	8 182
1998	62 881	37 178	20 685	1998	27 165	8 608
1999	59 840	37 402	21 553	1999	29 065	9 979
2000	62 729	42 358	24 098	2000	31 349	11 475
2001	62 186	41 038	27 216	2001	31 573	12 877
2002	62 080	44 029	28 301	2002	30 539	13 518
2003	63 803	45 173	29 313	2003	31 708	13 281
2004	67 015	43 614	29 705	2004	31 267	13 427
2005	68 772	42 956	27 855	2005	29 972	11 515
Total	617 753	397 026	244 703	Total	291 385	109 768
CAGR	3.42	3.99	5.96	CAGR	3.02	5.85
Average rate of completions (1996 – 2005):				Level 4	Level 5	Level 6
				43.58	48.79	41.34

Three occupation fields account for around 80 per cent of learner passes from Level 4 to Level 6: Electronics and Telecommunications Trades; Construction Trades and Mechanical Engineering Trades.

No more than five occupation fields account for 96 per cent of learner passes in engineering studies at Level 4: Electronics and Telecommunications Trades (48,02 per cent); Mechanical Engineering Trades (29,95 per cent); Construction Trades (8,30 per cent); Telecommunications Trades (5,02 per cent) and Manufacturing Trades (4,80 per cent).

At Level 5, six out of 17 occupation fields accounts for 96 per cent of all the passes. These occupation fields are Electronics AND Telecommunications Trades (46,46 per cent); Construction Trades (17,12 per cent); Mechanical Engineering Trades (13,50 per cent); Electrician (10,10 per cent); Telecommunications Trades (5,00 per cent) and Manufacturing Trades (3,44 per cent).

At Level 6, six out of 17 occupation fields accounts for 96 per cent of all examination passes registered: Electronics and Telecommunications Trades (48,93 per cent); Construction Trades (15,76 per cent); Mechanical Engineering Trades (12,33 per cent); Electrician (8,39 per cent); Telecommunications Trades (6,20 per cent) and Manufacturing Trades (4,39 per cent).



**Table 26: Occupation field in which Level 4 – 6 learners in engineering studies have passed exams (total accumulated: 1996 – 2005)**

	Level 4	%	Level 5	%	Level 6	%
Electronics and Telecommunications Trades	139936	48.02	86919	46.46	53710	48.93
Construction Trades	24185	8.30	32024	17.12	17295	15.76
Mechanical Engineering Trades	87283	29.95	25250	13.50	13538	12.33
Electrician	2341	0.80	18890	10.10	9212	8.39
Telecommunications Trades	14641	5.02	9345	5.00	6805	6.20
Manufacturing Trades	13980	4.80	6442	3.44	4815	4.39
ICT And Telecommunications	4053	1.39	2234	1.19	1283	1.17
Mining Trades	1	0.00	0	0.00	1194	1.09
Chemical Technician	2451	0.84	1378	0.74	801	0.73
Manufacturing Technicians	0	0.00	0	0.00	538	0.49
Automotive Electricians And Mechanics	90	0.03	391	0.21	301	0.27
Wood and Paper Manufacturing Trades	248	0.09	132	0.07	119	0.11
Textile, Clothing and Footwear Trades	319	0.11	152	0.08	96	0.09
Aviation	360	0.12	49	0.03	41	0.04
Air-conditioning and Refrigeration Mechanics	157	0.05	45	0.02	20	0.02
Cad Draughtsman	0	0.00	2197	1.17	0	0.00
Fabrication Engineering Trades	1340	0.46	1616	0.86	0	0.00
Total	291385	100.00	187064	100.00	109768	100.00

It seem from the above tables, public FET colleges do provide artisan type skills. Still being the case, employers report a shortage of qualified artisans. The explanation is that employers perceive FET output as not providing the kind of skill they require in industry. The FET college problem arise because many learners at the college who are currently undertaking college studies within the priority areas do so with insufficient or without access to workplace experience. With only limited opportunity or without access to workplace experience these learners learn theory as theory, mainly for examination purposes and for access to further studies (Young & Gamble 2006).

Elliott (2006) elucidates the college problem by arguing that the current FET colleges learning outcomes are not aligned with industry needs. The quality of FET graduates as she puts it is not what is required in the workplace. According to Gamble (2003) workshop training and workplace experience are crucial to vocational preparation. Workshop training assists in the transmission of general principles (trade theory), while workplace training, on the other hand teaches the procedures of a particular workplace and situation-specific competence.

Whyberd (2007) also affirms that it is in the interests of young people, employers and the country that those who seek to follow a vocational qualification through the Further Education (FE) route in the United Kingdom and the FET route in South Africa choose options that delivers the skills that employers need. For these learners, progression to skilled employment, rather than qualifications achieved, is the true measure of success.

However, there are also some indication from research that some big construction companies are saying that although there's a boom and although there is a shortage of skills, construction companies are working with the skills that are available and will complete (e.g. stadiums) in time. We have seen from the LFS data in terms of a large number of people working as craft and related trades workers and who may have passed exams in artisan related occupation fields, coupled with Indlela arranged

exam but not passed – there may be a large number of people that just don't have the artisan ticket but are working as artisans. Most employers will prefer this situation because basically they are paying their employers less than if they were qualified and they still have the work done.

#### Concluding remarks

In the sections above, four analyses were undertaken. Firstly, StatsSA data was used to determine the number of practicing and unemployed artisans in South Africa (however in terms of craft and related trades workers). Secondly, Indlela data was used to estimate the availability of artisans. Distinction in availability was made between those who had arranged to undertake the trade test (assuming that these people had completed both theory and practice and were ready for such testing) and those who passed the trade test. No analysis was however undertaken at the level of age, race or specific artisan jobs (i.e. builders, mechanics, etc.) and thus no distribution of artisans is yet presented. Determination of such distribution is however important, and may be possible through more detailed cross-tabulations to determine the compatibility of the existing databases for potential super-imposition work and additional deductions. Thirdly, SETA apprenticeship enrolment data was used to show possible artisan output (2001 – 2005). Lastly an overview of trends in exam passes in occupational fields at public FET colleges was provided.

From the demand side analysis in the previous section and the above analysis of supply it is clear that there were workers in the country who had been working as artisans for many years but their skills had never been developed beyond the jobs they did. In the second half of 2007, a Jipsa working group had agreed on four routes people could take to train as artisans. One of the routes developed by the Department of Labour is the "recognition of prior learning" based on workplace experience. Estimates based on the Indlela data indicates that there could be around 300 000 people in the country for whom a trade test was arranged between 1983 and 2004 (i.e. currently younger than 50 years old) but who did not pass the test. These workers have completed their theoretical and practical training otherwise a trade test would not have been arranged. Surely they are a priority group to be targeted for recognition of prior learning.

FET exam passes data shows increasing trends across all 6 levels – confirming increasing number of younger people entering the labour market as craft and related trades workers – they don't have the qualification as an artisan, but employers are including their services on very large projects and believe these projects will be delivered on time.

## **HISTORY OF ARTISAN TRAINING IN SOUTH AFRICA**

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The traditional apprenticeship, based on a very structured master-apprentice relationship no longer exists in South African workplaces. It is inevitable, that over time, the structure of artisan training has evolved in response to a range of factors such as workplace changes and beyond. For example, the discriminatory policies introduced during apartheid influenced the way the system was crafted. Gamble (2004) argues that the apprenticeship system has evolved over time from the 'formal, traditional master-apprenticing relation that was regulated first by the individual artisan or journeyman, later by various craft unions and ultimately by the state. Once

the state got involved, the state-regulated apprenticeship system changed its shape and form, in accordance with shifts in production systems and the organisation of work.

In the South African context, the legal framework regulating artisans and apprentices emanates from the Manpower Training Act, 1981 (Act 56 of 1981) and subsequent regulations under the Act. This act superseded the Training of Artisans Act, 1951 (Act No. 38 of 1951) and the Apprenticeship Act, 1944 (Act 37 of 1944). Interestingly, the Manpower Act does not define an artisan but define an apprentice as:

*...any person employed in terms of a contract of apprenticeship registered or deemed to be registered in terms of the provisions of section 16 (3) (d) or section 18 (1) (c) or (3) and, for purposes of sections 42, 50, 51, 54, and 56, and includes any minor employed in terms of the provisions of section 15 (xxxiv).*

The term 'artisan' is defined by default as a person who has successfully completed an apprenticeship. Five regulatory conditions govern 'successful completion' of an apprenticeship. These conditions are prescribed by the Minister (from Government Gazette No. 2527, 9 September 1977):

- **Entry requirements:** "The minimum age and educational qualifications for commencing apprenticeship shall be 16 years and Standard 7"-although Section 17 allows for 15 year old persons to become apprentices.
- **Period of apprenticeship:** From 3 to 5 years depending on designated trade.
- **Formal qualifications:** National Certificate, Part 2. (NATED 190/191-N1-N6).
- **Workplace experience:** As prescribed by the Minister and linked to the period of apprenticeship
- **External assessment:** Successful completion of a qualifying trade test

## 1800s-1920s

The apprenticeship system was introduced in South Africa by immigrant craft workers, the majority of whom came from the UK and various parts of Europe during the second half of the 1800s, to work on the mines. They were trained in a particular craft (or skill) and had years of experience in industry. Few South Africans had industrial skills at that early stage, so craft workers were imported from industrialized countries like Britain and other parts of Europe, the US and Australia. In those countries they had served five to seven years of apprenticeship, learning their crafts as electricians, fitters and tuners, moulders, pattern-makers and plumbers (Callinicos 1980).

The craft workers who came to work on the Rand brought with them the tradition of craft trade unions, which sought to maintain a monopoly on skills. These unions eventually assumed control of the apprenticeship system as well as the content and pace of work. Craft workers maintained control over the job through various interventions such as the closed shop arrangement, which required that no worker could be employed as a craft worker unless he was a member of a craft union. The unions retained a monopoly over labour, rates of pay as well as the actual training of apprentices. Callinicos (1980) pointed that it was the responsibility of the journeymen (qualified craft worker) to train apprentices on the job. In order to restrict numbers,

the unions in engineering, for example, would not allow more than one apprentice to every four journeymen.

The craft unions including the Witwatersrand Mining Employees' and Mechanics' Union (1892), the SA Engine Drivers' Association (1896), the Amalgamated Engineering Union (1898) and the Boilermakers' Society were at their most powerful from the 1890's onwards when there was a great need for industrial skills as deep-level mining evolved. Katz (1977) argued that the basic class interest pursued by white workers on the mines was to protect and consolidate their privileged status as a labour elite and as members of a dominant racial group.

Attempts to restrict competition between black and white workers can be traced back to the 1880's with the enactment of a regulation to the 1883 Mining Act. This was an attempt to exclude the blacks. In a similar vein, the Transvaal Engine Drivers Association managed in 1896 to establish that compulsory certificates were necessary for engine drivers and this was reserved for whites. Whilst this was later withdrawn, the 1903 Mines and Works Machinery regulations reinstated the colour bar for winding engine drivers. At the same time however, employers on the mines sought to replace whites with blacks in skilled positions so as to reduce costs.

In 1907, white workers – largely driven by British workers - went on strike over a proposal by employers to allow blacks and Chinese to perform skilled work on the mines. The decision by employers to replace striking workers with unemployed Afrikaner workers not only broke the strike but also was viewed as an important breakthrough for the emerging Afrikaner working class. Poor whites started getting preference for jobs not only on the mines but also since the formation of the Union, the government gave preference to whites for unskilled jobs, which later became known as the 'civilised labour' policy.

The Mines and Works Act of 1911 has been viewed as a further step in extending the colour bar through various regulations, which prohibited blacks from acquiring certificates of competency in a range of occupations.

The situation came to a head in 1922 when employers sought to cut costs by reducing the number of highly paid white workers and replaced some with black workers. The move by employers was not intended to do away with the job colour bar but rather to create some flexibility within the system. This led to what has been described as a bloody strike with military aircrafts being used to bomb white working class areas such as Benoni and Germiston. The Pact government (coalition of the Labour Party and the Afrikaner Nationalist Party), which came to power in 1924, moved swiftly to entrench the power of particularly white Afrikaans workers. Following the elections, the new government moved to entrench the colour bar. Initiatives included the amendment to the 1911 Mines and Works Act, which made it illegal for any black to occupy skilled jobs on the mines. The Pact government also instructed all government departments to replace 'uncivilised' (black) with 'civilised' (white) labour.

This policy inadvertently contributed towards a deskilling process, which the traditional craft unions sought to halt. The deskilling process also involved the introduction of various machines, which used semi-skilled machine operatives who replaced skilled artisans. Lundall (1997) explains that the history of changes in apprenticeship training cannot be divorced from the general history of the changing labour process, from craft orientated towards fordist modes of factory organization, particularly during the early part of the twentieth century. Usually, it was in defence of institutions such as the apprenticeship system that large segments of skilled workers

resisted the onset of automated mass production assembly lines under fordist modes of factory organization.

Hence, increased mechanization led to the introduction of an off-job technical education component as incorporated in the 1922 Apprenticeship Act. Prior to the 1922 Act, apprenticeship training was governed by a number of disparate pieces of legislation such as the 1918 Regulations of Wages, Apprentices and Improvers Act. The 1922 Act introduced the concept of apprenticeship curriculum, namely classes in technical education to be undertaken at a technical college. The provisions of the Apprenticeship Act of 1922 set out high educational requirements to enter apprenticeships and because of the low level of education Blacks received, these requirements effectively precluded and prevented most Black youths from being able to enter apprenticeships (Lewis 1984; Chisholm 1992). Drawing on other research, Gamble (2004) explains how supplementing limited practical experience with instruction in the general scientific principles underlying work processes was deemed a resolution to the loss of craft knowledge and skill that occurred when increased mechanisation resulted in a more specialised technical division of labour that often deprived the apprentice from getting exposure to all aspects of a trade. The apprentice was not taught the whole theory and practice of a trade because there was no one in the workshop who performed more than a fractional part of the process of manufacture.

During this period, the economy continued to grow with the basis being laid for the establishment of a number of state owned enterprises (SOEs) while the manufacturing sector began to build its base, which was consolidated during the 30'-40's.

### **1930s-60s**

The new Pact government faced a growing poor white Afrikaner problem especially during the depression years of the early 1930's. It has been argued that the training of craft workers expanded dramatically during this period 'as the government sought to address two parallel problems: the first was the 'poor white problem' which arose during the 20's and 30's. The second was the expansion of secondary industry around the mines and the need for craft workers to work in the newly established SOE utilities, which supported the industrial expansion of the day. The government funded a massive craft training initiative to address these two problems and in the process lifted a whole generation of 'poor whites' into the middle class.'

Whilst the manufacturing sector made steady progress after WW1, the economy went into a depression between 1931-33 but by the late 1930's the country was experiencing a marked increase in industrial growth. Gold mining profits grew by 98% between 1931 and 1940 and the value of gold sales increased by 155%. The government imposed an excess profit tax on mines, which helped finance the construction of Iscor.

As the economy continued to boom, a shortage of skilled artisans emerged. One of the interventions proposed to address this shortage was the establishment of the Central Organisation of Technical Training (COTT) in 1940. COTT operated under the Director-General of War Supplies and was viewed as a short-term measure to address the large-scale shortage of skilled technicians being experienced at the time in the Defence Force. COTT provided a range of intensive technical training courses and after the war it was used for returning white servicemen so as to ensure their easy access into the economy. COTT was eventually converted into a trade test

centre when the 1922 Act was amended and replaced by a new Apprenticeship Act 37 of 1944, which introduced the concept of a trade test. This Act only made provision for the training of white artisans. In 1951 the Training of Artisans Act was passed, making provision for one year full-time intensive institutional training followed by 3 years of practical training with an approved employer. Industry, especially the SOE's, established technical colleges to provide the theory component of trade training.

A restructuring of the artisan system was recommended in the findings handed down in 1948 by an official commission of inquiry – the De Villiers Commission. The Commission attempted to address the shortage of white apprentices by seeking to understand the reasons for the general apathy exhibited by white youths against entering into apprenticeship contracts. Concerns revolved around wages, high entry-level requirements and the obligation to attend compulsory technical classes while in some trades white youth were reluctant because these trades were perceived to be passed into the hands of 'non-Europeans' (Lundall1997).

In seeking to alleviate the shortages, the Commission recommended a policy of immigration and decentralization. The Commission called on government to 'adopt a positive and effective immigration policy with the appropriate financial assistance of the state so that 25 000 European or white immigrants could immigrate to SA annually. The Commission proposed 'the decentralization and favourable location of these industries' which could then continue to take advantage of cheap black labour. 'The commission envisaged that the dilution and fragmentation of jobs performed by 'non-European employees' in areas closer to the reserves, would alleviate the shortage of skilled labour.'

The Commission's main recommendation concerned the introduction of a trade test that would allow the more competent apprentices to reduce their training time. By 1960, it was proposed that apprentices who failed the trade test should still receive full journeyman status. A training scheme, which allowed trainees to bypass the apprenticeship requirements and become artisans by effluxion of time, was also introduced in 1965. By this stage, the apprenticeship curriculum consisted of three components: practical workplace training, formal theoretical training in a technical college and a formal trade test.

On the political front, a minority Nationalist government was voted into power in 1948. By the late 1950's the building blocks for apartheid were in place, intensifying a period of repression and resistance. The economy, by this stage, appeared to stabilise with manufacturing beginning to face rising international competition. However, as the country moved more into its 'isolation years as the architects of apartheid systematically painted South Africa into a corner', the economy boomed because 'fundamental to Fortress SA was government's support of local industry' (SEIFSA 2003). Between 1960 and 1970 the annual growth rate averaged at around 6%. Against this backdrop, the shortage of skilled labour re-emerged as a problem. This led to probably the last massive immigration of artisans from the UK and elsewhere until the end of apartheid in the 1990's. Those who came as part of the 1960's influx from the UK and else where were known as the '10 pound pom'. These artisans were paid for passage to SA and received 10 pounds on arrival.

Despite the importation of skills, employers continued to complain about shortages and began to explore other options aside from immigration. Lundall (1997) argues that elements of big business began to engage in a persistent, organized and vitriolic ideological battle with white artisan unions to remove the most severe forms of job reservation, which were a constraint on growth. During this period, job fragmentation

continued in order to reduce the labour costs. Employers in metal and engineering, for example, began to talk of applying for exemptions to enable them to reallocate certain of the less skilled and responsible jobs to non-white workers. In a major move by employers, a decision was taken to establish a metal and engineering industries education and training plan which provided for a multi-tier grant/levy scheme.

## **1970s-1990s**

The growth of the economy in the 1960's ironically acted as a catalyst for the resurgence of black worker organisation in the 1970's. Black workers began to organise into unions and started challenging the system in place. A wave of strikes culminated in what became known as the 1973 Durban strikes. Discontent spread to all sectors of society. These social upheavals compounded by divisions within the Nationalist Party itself and underlying weaknesses in the economy fuelled by decades of tariff protection and inward-industrialisation, rendered the apartheid state insecure. It was forced to take action. It established a number of Commissions of Inquiry to seek a new regime of control. The outcome of which was the introduction of a new set of laws, which sought to deracialise in areas where it was possible without completely dismantling the apartheid system as a whole (Bird 2001). Kraak (1996) argues that part of the states response was a decisive shift away from directly intervening in the economy to a social system where market forces would be allowed to predominate. The commission reports (three commissions were established in 1977) repeatedly stressed the importance of market forces and the limited role of the state. The results of this shift were revealed firstly, by the decision to commercialise some key SOEs and privatise Iscor – the institutions which had been critical in building up the apartheid state and had played such a critical role in the training of artisans. Secondly, the 1990 amendments to the Manpower Training Act revealed a shift away from the state's involvement in training.

Both Wiehahn (headed commission on labour laws) and Riekert (headed commission which investigated black urbanisation and community development) recommended the streamlining and rationalising of labour and training legislation, which culminated in the enactment of the Manpower Training Act (MTA) of 1981. They also recommended the establishment of the National Manpower Commission (NMC) and the National Training Board (NTB) – which replaced the earlier Apprenticeship Board, set up under the 1944 Act. Until 1991 the NTB excluded representation from the unions affiliated to the Congress of SA Trade Unions (Cosatu).

One of the NTBs first major tasks was a joint research project with the Human Sciences Research Council (HSRC) on artisan training in South Africa. The result was the 1985 report *Investigation into the Training of Artisans*. It questioned the ability of the old apprenticeship system to meet current technological skill requirements. Apprenticeship entailed serving a fixed period ranging from three, four or five years depending on the specific trade. It also involved some form of 'on-the-job' practical experience which was often unsupervised and unstructured. Theoretical study up to the level of N1 (equivalent to standard eight) or N2 (standard nine) was undertaken on a block-release basis at neighbouring race-based technical colleges. The NTB's criticism included:

- Inappropriate approaches to apprenticeship training leading, in some cases, to the production of low standard artisans. This criticism referred to the 'Sit-by-Nellie' form of practical training, which was largely unsupervised and unstructured training.

- The lower quality artisan was often associated with achieving artisan status by 'effluxion of time': a system whereby mainly white workers acquired artisan status after five years irrespective of passing the trade test.
- A general dissatisfaction with the time-based nature of apprenticeship training, which did not take into account the differing learning tempos amongst apprentices.
- All apprentices did not enjoy the privilege of training over the full spectrum of their trade due to inadequacies in facilities/opportunities provided by the employer. Many employers used apprentices only in performing a specific task, thereby not developing their overall skills (NTB/HSRC 1985)

Similar trends occurred in the UK. In the early 1980s, fundamental questions were asked about the future validity of apprenticeship, on the grounds that

- it provided rigid, job-specific training in skills for which demand was diminishing, and did not cater adequately for the rapid changing skills needs, nor at all for new skills;
- it was lengthy (four years) and costly;
- it could not provide for the 40 % of school leavers for whom no training provision was made;
- Unemployment continued to rise from 1973 to 1986.

These factors led to a dramatic decline in apprenticeship in the UK. In the road transport industry, for example, recruitment fell from 11,000 in 1975 to less than 1000 in 1986, and there were comparable falls in manufacturing (Haxby 1989).

In South Africa as a result of criticisms, the 1985 NTB/HSRC report recommended significant changes to the artisan training system. A competency based modular training system was introduced, which sought to retain the requirement for technical education at a technical college, on-the-job instruction as well as a compulsory period of 'institutional training' offered by an accredited training provider. In terms of the new system, apprentices would have to complete a specified number of modular credits within specified period of time. The curriculum was divided into various stages, with a stage test at the end of each stage and a trade test at the end of the final stage.

This recommendation, amongst others, was incorporated in an amendment to the MTA, which was finally published in July 1990. Kraak (1996) reports that the amended MTA provided for the devolution of control over apprenticeship training from the Department of Manpower to accredited Industry Training Boards (ITBs). This effectively marked a shift away from the state towards business and labour being responsible for artisan training. Training effectively became privatised and sectors had the autonomy to decide what training they deemed appropriate.

These reforms were viewed as a response to economic difficulties and rising political opposition. By the late 1970's the economy was achieving poor growth. By the mid-1980's, the economy was shrinking despite a mini-boom between 1981 and 1983. For the major part of two decades (between the 70's and 90's) the economy was growing at under 1% per annum. This had a dramatic impact on training, which was compounded by the commercialization and privatization of the SOEs. Bird (2001) reports the extent to which the training of artisans declined in the SOEs. Following the privatisation of Iscor in 1989, the training of artisans reduced rather dramatically from 250 a year to 70 by 2000 in just one plant.



Although the legislation provided for the deracialisation of the apprenticeship system, studies reveal that in practice few black apprentices were indentured. Bird (2001) argues this was partly a result of persistent racism amongst employers and craft unions (which in some cases cautioned their members not to coach black apprentices or else face expulsion from the union) and partly a result of the overall decline of the apprenticeship system, which could have been the result of the following:

- The withdrawal of tax concessions on employee training in July 1990.
- The commercialisation and subsequent privatisation of Iscor led to a decline in apprenticeship contracts as these organisations faced pressure to cut costs and were no longer able to train beyond their needs.
- Political insecurity (coupled with sanctions) created uncertainty amongst employers around the transition so they held back on training.
- Economic restructuring which led to a change in the type of skills required as the structure of the economy began to change with a shift away from the traditional sectors (mining/manufacture) towards services. This was coupled with a declining economy, which was loath to train beyond survival.
- Decline in the power of the craft unions saw a corresponding rise in the power of black industrial unions whose priority was not the training of skilled artisans as their base at the time was more amongst semi-skilled workers.

While the state was drafting amendments to the 1981 MTA, there was a growing awareness within the labour movement that skills development was critical in bridging the gap between the imbalances of the past and the need to grow the economy and create jobs. It was during the late 1980's - largely spearheaded by the Congress of SA Trade Unions (Cosatu) and one of its largest affiliates, the National Union of Metalworkers of SA (Numsa) – that a rethink of the existing training system began. The union's central theme for an integrated education and training system was based on the concept of a ladder-like framework in which workers could enter at any point and progress upwards in meaningful stages - from 'unskilled' to semi-skilled and skilled levels and beyond – 'from sweeper to engineer'. The training ladder was complimented by an adult basic education and training framework to ensure that adults who had been denied a general education could still access and climb up the learning framework (Numsa 1991).

Meanwhile, the NTB published a further substantive policy document in 1991, entitled *Investigation into a National Training Strategy for the RSA*. The report made some important proposals and recommendations such as the formation of a unified Department of Education and Training to ensure effective co-ordination of training efforts, which were absent. A unified department, it was argued, would facilitate the elimination of the highly fragmented nature of current education and training governance. A call was also made for the establishment of a system of national vocational qualifications, which articulated, with the formal education system.

The 1991 NTB report was shelved following opposition from organisations such as Cosatu, who by that stage had been invited by the Minister of Manpower to nominate representatives to the NTB. Following extensive discussion, the parties to the restructured NTB agreed to begin a process of negotiating a new National Training Strategy. Various working groups were set up including representation from employers, unions (including representation from the ANC's education department), and government and training providers.

This process led, in 1994, to the drafting of a National Training Strategy Initiative (NTSI), which was finally published in April 1994. The NTSI's vision was a human resources development system in which there is an integrated approach to education and training and which meets the economic and social needs of the country and the development needs of the individual (NTB 1994).

The integrated approach to education and training would require the breaking down of the 'barriers which separate education and training', the report argued, hence the call for the notion of a single department of education and training. Other recommendations included the restructuring and expansion of the industry training board system and replaced with Sector Education and Training Organisations (later became known as Sector Education and Training Authorities) to execute new functions.

This strategy, negotiated with business, accepted the notion of some form of integration between education and training, which would be achieved through a National Qualifications Framework (NQF), which was eventually established by the SA Qualifications Authority (SAQA) Act of 1995. The SAQA Act was the first piece of legislation passed by the newly elected government post 1994. The idea was that the NQF, overseen by SAQA, would operate as one qualifications framework for all kinds of learning. In reality this would mean that all qualifications from vocational (occupation based) through to professional and higher education would be incorporated onto one qualifications framework. The intention was that those previously excluded from the formal education system (such as workers who had not received formal qualifications), could gain access to learning opportunities (and hence gain qualifications and recognition of prior learning) and thereby become integrated into the formal educational system.

According to Bird (2001), all parties agreed to the establishment of a NQF: Workers wanted an integrated framework to secure access to learning which had been denied them. They also wanted their skills recognised beyond their single employer to provide them with greater mobility and prospects for progression. Employers supported it because it ensured that training questions would remain on the agenda (not just general education) and through the focus on outcomes - it was believed that learning could be contextualised to the workplace whilst remaining internationally referenced. It also provided them with a framework within which they could legitimately sub-divide trade skills and hence lower costs.

Despite a clear policy recommendation to establish a single department of education and training, this did not happen after the first democratic elections. Two departments, one for Education and one for Labour (incorporating responsibility for the apprenticeship system but not for the public providers of training) were established. The two ministries sought to ensure the effective implementation of the NQF by setting up an inter-ministerial working group. However, the birth and evolution of the NQF did not go smoothly. By 2001 a review was initiated by government, with some educationalists believing that this signalled an awareness that the approach seemed not to be working. The departments jointly responsible for the NQF, DoE and DoL, commissioned a study team to conduct a review of problems with implementation. The study team produced a report in 2002, entitled *Report of the Study Team on the Implementation of the NQF*. This report became known as the NQF Review. It proposed substantial changes to the NQF and hence became the subject of intense debate between the two departments. Resolution to this issue has lasted for almost four years. In August 2007, the joint policy statement was tabled by the Ministers of Education and Labour, which pointed out the need for change in the organizational structure of the NQF. This was followed by the new NQF Bill gazetted

on 15 February 2008 and the proposed Skills Development Amendment Bill gazetted on 28 February 2008. These developments have put on the table the revised national qualifications framework model. However, many respondents for this case study felt that whilst this development is better late than never, its success still needs to be seen.

As part of the DoL's commitment to ensure the implementation of the NTSI, it drafted an initial green paper on skills development in 1997. The green paper proposed the introduction of a national levy/grant system (which was strongly contested by employers) so as to increase investment in training and employer involvement; the establishment of Setas to drive implementation and the introduction of learnerships which sought to go beyond the racially restrictive apprenticeship system to extend to all skills levels and sectors. The learnership system was seen as an intervention to redress the old apprenticeship system and its problems and create a high quality dual system of learning. Learnerships would be structured as a combination of unit standard-based structured learning and practical work experience that leads to a qualification on one of the levels of the NQF and guarantees that the successful candidate is competent for a specified occupation.

The green paper stated that learnerships were being proposed as a 'major vehicle for addressing skills development needs. The green paper argued that traditional apprenticeships had been declining for a decade which had been attributed to the economic downturn, rising costs, reduced incentives, inflexibility of design in the face of shifting skills requirements linked to technological change and increased multi-skilling of lower levels in the workforce. The green paper pointed out that traditional apprenticeships would remain an important component of the new learnership system. 'However, real qualification value of apprenticeships will have to be reviewed in the process of standards setting and qualification restructuring.'

A learnership does not equate to a full apprenticeship. While traditional apprenticeships had, over the years, been reduced from a statutory seven years to a period of two to four years, employers had remained legally bound to ensure that an apprentice went through all the stages of apprenticeship. Learnerships effectively would allow employers to enter into a learnership contract with an apprentice for only one or perhaps two NQF levels. The learner or trainee has no guarantee that the employer will enter into a second or third learnership contract. Each NQF level is accessed through a new and separate learnership agreement. This would give employers in mass production, who have long complained that all-round expertise is no longer required in their factories, the opportunity to specify that a learner should be trained on only one or two machines, or on restricted but specialised work routines. This would ensure more people could access training, but fewer have the opportunity to attain the all-round knowledge and skill offered by the old apprenticeship system.

The Skills Development Act (SDA), finally promulgated in 1998 proposed that learnerships would incorporate traditional apprenticeships. The Act did not say that apprenticeships would no longer be allowed. It repealed a number of sections of the 1990 Manpower Training Act but retained a number of sections relating to apprenticeship training. As part of the transitional arrangements, apprenticeship training would remain in place until such time as the Minister of Labour deemed otherwise.

At the time of the drafting of the SDA, economic growth remained stagnant and the country faced rising unemployment and poverty. Employers at the time were sceptical about the potential of an economic turnaround and were feeling bombarded

by the numerous pieces of labour legislation which were being tabled for negotiations.

## **2 000 and beyond**

Setas were officially launched in March 2000 amidst high expectations that they would contribute towards increasing the country's competitiveness (and hence foreign investment) through rising productivity, improved and available skills and rising employment levels. Setas were expected to fulfil their obligations in terms of the SDA as well as the remaining provisions of the MTA, which included the management of apprenticeship training – formerly done by the ITBs.

However, when the Setas were established, the majority did not have appropriate systems and procedures in place to deal with their core functions. From a governance and oversight point of view, the situation was equally problematic as Seta boards were constituted and sought to define their areas of responsibility. Amidst all of this, the Setas were expected to manage the introduction of learnerships, which were promoted at an ideological level as a transformation of the 'old' into the 'new' whilst also ensuring the continued implementation of the apprenticeship system, which the majority of Seta staff had no knowledge of.

While these Setas grappled to put in place proper systems and processes, the Department of Labour (DoL) too was faced with a myriad of demands to ensure the system worked. By 2003, the Setas faced intense criticism sparked by various allegations of misconduct. This criticism coincided with a number of developments: The economy was showing clear signs of a recovery with growth exceeding 3%. Talk of a massive infrastructure rollout intensified while at the same time unemployment persisted leading to the holding of yet another summit on jobs, the Growth and Development Summit (GDS), held in June 2003. The GDS adopted a number of resolutions in relation to strengthening the functioning of Setas and to promote learnerships. Concerns around Seta governance structures and involvement of stakeholders in driving skills development has been of concern for some time with various attempts being made to address this. The social partners made various commitments in this regard and to ensure the registration of at least 72 000 unemployed learners in learnerships by May 2004. This formed part of an attempt to use learnerships to address the unemployment problem and not necessarily raising the country's skill profile.

Following the GDS, the DoL embarked on an exercise to amend the Act so as to deal with Seta performance as well as efforts to increase learnerships whilst also restating the importance of the traditional apprenticeship system. DoL officials have indicated that there was a growing realization that the apprenticeship system should be promoted. In order to promote the take-up of learnerships, the tax incentives granted to employers was increased from R25 000 to R35 000 on the registration of a learnership for new employees and R20 000 for existing employees and a further R30 000 on completion of the learnership. The tax allowance for the employment of disabled people was even higher and could amount to up to R90 000 per learnership.

Despite these incentives, the take-up of learnerships proved to be problematic.

## Role of government and the private sector in artisan training

The respective roles played by government and the private sector in the promotion or otherwise of artisan training are clearly revealed during the historical overview outlined in section 3 above.

### Government

Building the skills base of white Afrikaners became an important component in the construction of the apartheid state. From the late 1920's and early 30's onwards, following the victory of the Pact government, there was an increased focus on solving the poor white problem and artisan training was viewed as a way to address this. Large numbers of white apprentices were trained up to be artisans as part of an affirmative action programme – driven by the government.

The government's commitment to training whites was reflected in the decision to set up the Central Organisation of Technical Training (COTT) in 1940, which was used to train white returning servicemen after the war. This facility trained up hundreds of artisans.

Table 27 provides racially classified figures from 1977-1981. In 1977 there were no Blacks registered as apprentices. Of the 10527 indentured apprentices in 1980, 8568 were White (81%), 1406 were Coloured (13%), 471 were Asian (4%) and 82 were Black (0.8%).

**Table 27: Apprentices registered: 1977-1981**

Apprenticeships	1977			1980				1981			
	W	C	A	W	C	A	B	W	C	A	B
Totals	10066	871	323	8568	1406	471	82	9232	1595	645	495

W= White; C= Coloured; A= Asian; B= Black (African)

Source (Bird 2001)

At the same time however, skills were still imported especially during the building of the SOEs when specialized expertise was required. Skills were also imported during various boom periods when shortages were experienced. For example, during the 1960's, the government provided a range of incentives to facilitate the importation of artisans as the economy grew.

Up until the early 1980's, the state intervened and was directly involved in driving training either through supporting training centres, providing incentives and opportunities for apprentices to be trained (through workplace experience in the SOEs). The first major shift occurred following the decision to commercialise a number of SOEs and privatise companies such as Iscor. Until then, SOEs had become the main suppliers of artisans into the broader economy. As part of cost cutting exercises, SOEs began selling off training centres and were no longer able to fund the training of artisans beyond their immediate needs. An ILO report (Bird 2001) reveals the extent to which the training of artisans declined in the SOEs as a result of privatisation. Following the privatisation of Iscor in 1989, the training of artisans reduced rather dramatically from 250 a year to 70 by 2000 in just one plant.

Between 1991 and 1999 the number of new apprentice contracts showed a significant decline. It fell from 10758 in 1991 to 7492 in 1992, 6247 in 1993, down to 5545 in 1995. In 1999, the number was at 3129. Table 2 shows this dramatic decline in the number of new apprentices indentured since 1991 when the total number

peaked at 10 758. The total number of final year apprentices qualifying as artisans was at its highest in 1986 at 11 769, but it went down to 3 960 in 1994.

**Table 28: Apprentices and artisans, historical trends, 1985-1994**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Newly indentured first year apprentices	11573	9660	8185	7919	9891	9054	10758	7492	6247	5002
Total stock of apprenticeship contracts	33752	29826	25689	23416	26941	24448	26714	25785	21677	22015
Artisan status attained	12933	11769	10686	8578	5138	7132	4527	5588	9362	3960

Source: Kraak 1996

Table 29 highlights a continuation of the decline in the number of newly indentured apprentices with the metal, motor and railways sectors being the most affected.

**Table 29: New apprenticeship contracts, 1990-1999, prior to the Learnership era**

Industries	1991	1992	1993	1994	1995	1996	1997	1998	1999	% change: 1991 to 1999
Aerospace	259	257	43	63	85	76	158	81	176	-32.05
Automobile	187	109	105	77	59	56	47	58	15	-91.98
Building	417	348	222	230	254	263	269	170	107	-74.34
Carbonated soft drink	0	0	0	0	0	0	12	14	7	-
Chemical	126	64	58	32	62	0	91	127	5	-96.03
Dairy	0	0	0	0	0	0	2	4	0	-
Diamond cutting	7	1	3	1	1	0	0	4	5	-28.57
Electrical contracting	162	322	150	277	230	177	231	226	197	21.60
Eskom	225	156	126	71	93	133	28	27	203	-9.78
Furniture	179	136	199	70	61	70	112	34	27	-84.92
Government	202	208	100	86	123	57	71	40	29	-85.64
Hairdressing	335	462	733	244	338	397	455	347	341	1.79
Jewellers and goldsmiths	63	21	35	32	54	16	17	7	17	-73.02
Local government	566	296	172	143	164	111	303	122	278	-50.88
Metal	3911	1940	1387	1227	980	1381	682	320	320	-91.82
Mining	880	1200	942	976	1644	840	1476	815	366	-58.41
Motor	1855	1217	1524	972	1025	1349	1026	684	594	-67.98
Printing	422	400	283	224	186	169	282	22	147	-65.17
Sugar manufacture	43	19	25	9	56	37	52	28	1	-97.67
Textile	0	0	19	11	18	20	22	32	70	-
Transnet (railways)	907	332	113	244	107	140	263	150	224	-75.30
Tyre and Rubber	12	4	8	13	5	0	0	0	0	-
Totals	10758	7492	6247	5002	5545	5292	5599	3312	3129	-70.91

Source: Moleke, 2006

This decline of apprenticeship is an international trend. In Australia, there has been a substantial decline in the public sector construction workforce for example as a result of privatisation. Between 1984 and 2004 this workforce declined by 81 per cent (Toner 2005). Similar trends occurred in the UK.

The second shift occurred following the amendments to the MTA in 1990 where the state appeared to begin to distance itself from directly driving training. Training effectively became privatised and sectors had the autonomy to decide what training they deemed appropriate. As a result of the continued decline in the economy, artisan training and training in general became less of a priority not only within the SOEs but the private sector as a whole.

In the post 1994 period, the government sought to encourage the private sector to train more through the introduction of the SDA and the Skills Development Levies Act. More importantly, the Act was based on the premise that training would largely be driven by labour and business through their strategic involvement in the Seta's where sector and workplace needs would be addressed. Government's role in relation to skills development was:

- to oversee the functioning of Seta's and provide research capacity to conduct labour market analysis in relation to skills needs;
- to be involved in the various Setas as an employer and ensure that the skills needs of government were addressed; and
- provide various tax incentives for employers so as to encourage them to enter into learnership arrangements.

The current discourse around the shortage of skills raises some questions about the state's role in the delivery of skills, which will be discussed later in this report.

### ***Private sector***

Until the 1970's the private sector relied largely on the supply of skills produced by the SOEs (government) and the ability to import skills when required. This does not discount the fact that some of the larger companies in metal and mining did train artisans for their very immediate needs. The historical overview points to a link between the question of skills and the containment of costs. Business appeared, at different periods, to oppose job reservation not for ideological reasons but as a way to replace skilled white artisans (expensive) with cheaper semi-skilled black labour who did aspects of the full artisan job.

After years of complaining about skills shortages, employers in metal and engineering established a metal and engineering industries education and training plan in 1970. This plan, viewed as groundbreaking at the time, provided for the introduction of a multi-tier grant/levy system, which appeared to work well. This marked the first time that employers appeared to get serious about addressing skills needs in a particular sector. It occurred at a time when the country was finding it increasingly more difficult to import skills because of apartheid.

Political instability from the 1970's onwards coupled with a contracting economy led to a reduced focus on training. The country effectively began to experience low growth from the 1970's to 1990's, with the economy growing at under 1% per annum. The economy began to turn during former President Nelson Mandela's term of office and by 2000 growth broke the 3% barrier. Kraak (1984) has argued that South African employer decisions are generally short-term and cost sensitive and as a

consequence, training plans are likely to fluctuate with changes in the company's economic performance. Hence, during boom periods there is likely to be an increase in apprenticeships and a reverse during recessionary periods. In view of the fact that training decisions are still a function of 'short-term business considerations', they are likely to be 'highly sensitive to the vagaries of the GDP.' Hence, Kraak compared the annual percentage growth in artisans with the annual percentage change in GDP from 1975-1993. He found that a training lag existed. This is largely a result of the fact that 'the "qualification-of-artisans" cycle lags at least three to four years behind the business cycle. This is the minimum time it takes for apprentices to qualify as artisans. This lag then results in an acute shortage of skilled labour precisely at times when the expansion of output requires increased numbers of artisans...It is this disharmony in the labour market, which accounts for much of the employer rhetoric about a skill shortage. It is especially during the mini-boom periods when the consequences of cutbacks in training (made four years earlier) take effect, and crises of skill shortages emerge. The skill shortages crisis is really a by-product of insufficient long-term planning.

Kraak (1984) concludes that South African training has become ad-hoc rather than long-term or systematic in character, implemented when the need has arisen and quickly abandoned when the economic climate has shrunk. The current shortage has been compounded by the fact that when the economy did start to recover (after more than two decades of dismal growth), one would have expected business to begin to invest; it did not do so and remained sceptical and pessimistic about the country's future. The situation was compounded after 2000 by the apparent confusion surrounding the status of apprenticeship training following the promulgation of the SDA.

The ANC's economic policy document (ANC 2007) points to the private sector's failure to anticipate the growth in the economy; respond to growing consumer demands and the opportunities provided by government's infrastructure roll-out plans. In addition, the document criticised the private sector's response to skills development, which was unenthusiastic at best, showing an unwillingness to accept that these policies are in the long-term interest of business.

It would appear that the private sector would only respond to their immediate needs without having a longer-term focus. This raises concerns as to whether SA business has an institutional culture of investing in and developing human potential. The approach to human resource development has not always been strategic and rather narrowly focused. More importantly, it will train up those skills that are relatively easy and cost effective to do so otherwise explore the option of importing or poaching.

## **FACTORS BEHIND THE DECLINE OF APPRENTICESHIP**

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Numerous explanations are offered for the decline of apprenticeship training internationally. These may be divided into two opposing approaches to labour market and economic analysis, namely supply-side and demand-side explanations. Supply-side explanations emphasise human-capital arguments such as excessive apprentice wages (reducing the demand for apprentices); inflexibilities of the supply-side of the training system (restrictive curriculum, delivery modes, and regulatory complexity) and declining apprentice applicant quality, to explain employers' declining investment in apprentice training. The supply-side explanations regard the level of investment in apprenticeship as the outcome solely of rational decision-making based on cost-



benefit analyses on the part of individual employers and apprentices. Adjustment of prices and quantities are assumed to ensure that any under-supply will be temporary.

The demand-side explanations focus on the structural and institutional foundations of vocational training and the changes in the economy which have reduced employer capacity to invest in such training (Toner 1999). The demand-side explanations consider decisions about the level of apprentice training to be determined, in large part, by particular economic characteristics of firms and industries, and historical and institutional factors. This approach is based on the empirical observation of persistent and large differences in apprenticeship training across different economic entities. Shifts in the economy will shift the aggregate of apprentice training. Over the last two decades a number of changes have occurred which are argued to be adverse for apprentice training. These changes include: corporatisation and privatisation of public sector entities; reductions in average firm size; increased global competition; growth of casual and part-time employment and growth of outsourcing and labour hire. Given the emphasis on structural and institutional factors the demand-side explanations reject the assumption that the economy will so adjust in the long run as to equilibrate supply and demand, either at an aggregate level or in specific activities, such as ensuring an adequate supply of skilled trades.

These opposing interpretations have significantly different policy implications for the Vocational Education and Training System (VET) system. The policy response from the supply-side explanations recommend measures to ensure the market for training more accurately approximates a competitive model through further deregulation of labour markets and training systems; increasing firm-specific training; and shifting the cost burden of training from firms to individuals. The policy response from the demand-side explanations involve a broad range of specific measures targeted to offset specific structural impediments to lifting apprenticeship training. This study concludes that, in general, demand-side explanations provide a superior understanding of declining apprenticeship training.

Based on a literature review coupled with interviews conducted amongst a range of stakeholders, the following – some of which are not new - have emerged as factors contributing towards the current artisan shortage:

### **State of economy and an inadequate national artisan training commitment:**

There is a direct relationship between economic change and training, leading to a start stop approach to training. During previous boom periods in the early 1960s (or in the event of major infrastructure projects), the country was forced to import because of insufficient local supply of artisans.

Ten years later, in 1975, for example, the problem had clearly been recognised and measures introduced to resolve it. In 1975 more than 30 000 apprentices were registered and this figure went down to 3 000 by the year 2000. Unless radical intervention is imposed to rectify the problem, South Africa's industrial and commercial sectors will be faced with an acute shortage of qualified artisans. This will hamper the country to achieve a growth rate of 6% per annum. The major contributor to the reduction in apprentice numbers over the 1990s was the large-scale withdrawal of all levels of government from apprenticeship training. The reason for this withdrawal was largely due to the fact that SOEs faced privatisation and commercialisation in the late 1980's.

Changes in the ownership or legal structure of these entities led to a shift in their objectives away from a broad range of economic development and social objectives to a singular focus on improving the direct rate of return on the private or public funds invested in the entity. By the time the economy began to recover, training in both the private and public sector had contracted while training facilities had either been mothballed or sold off. Instead of responding to the signals of an economic recovery after 2000, business remained sceptical and merely sought to comply with its statutory requirements as provided for in the SDA, which had come into effect by that stage. The training of artisans was further hampered by confusion, which arose as to whether the apprenticeship system would continue. A number of years were wasted as some employers stopped taking on apprentices and waited to implement learnerships. Employers experienced a myriad of problems in implementing artisan-based learnerships, leading to concerns around quality.

### **Role of government (and SOEs) in the delivery of artisans:**

In the past, the state played an active role in the supply of artisans whether it is through the SOEs or national government departments such as the Defence Force. These interventions coupled with the funding of training facilities, incentives and the importation of skills where necessary, contributed towards the building of the Volkstaat.

Aside from these direct interventions, government claims to provide an enabling environment for the training of artisans. It is questionable to what extent this has occurred. Some interviews revealed that instead of creating an enabling environment government has sought to over regulate in some instances, while failing to ensure critical institutions for learning are functional so as to meet the needs of industry. This leads onto a critical concern which has existed as far back as 1990 – the relationship between the departments of education and labour with insufficient co-ordination between them. A unified department, it was argued, would facilitate the elimination of the highly fragmented nature of current education and training governance. Little has changed since then, raising serious concern as to whether skills development can happen in the absence of strong institutions (such as FET colleges).

An example of this disconnect was illustrated fairly recently when DoE took a decision to change the curriculum of FET colleges. The DoE decided as from January 2007, that the N courses previously offered by FET colleges in three month blocks would be phased out and would be replaced with new one year National Vocational Certificate (NVC) courses offered at NQF levels 2,3 and 4 over three years. The N1 course, for example, is the theoretical component for an apprenticeship programme and is provided for in the MTA. DoE has indicated that it consulted business on this change but those interviewed indicated this was not the case. It is also believed that DoL was caught unawares by the decision to implement the new changes from this year.

Whilst, there is a need to update current FET courses, business argues that transitional arrangements should be put in place or the new courses phased in to allow those already in the system to complete their qualifications. Seifsa skills-development head Janet Lopes commented that “it seems problematic that at a time when shortages of skilled artisans present a key constraint to growth, the DoE is introducing new and unpiloted one year vocational programmes at colleges without proper transitional arrangements for companies indenturing apprentices”(Personal communication, 2007)

### **Business approach to training:**

Interviews and a literature review reveals that business has sought to get rid of the expense for training and more importantly, the implied cost of paying for skills. It has appeared to be shortsighted when it comes to training and during boom periods resorted to importing skills as a stopgap. In the future, this option might prove increasingly more difficult in view of the global demand for artisans. It should be noted that whilst in the past, SA was only an importer of skills; this is no longer the case. SA artisans are currently working on projects in Russia, China and the Middle East while thousands have immigrated to Australia and elsewhere. These developments could impact on the costs of doing business in SA.

This increased global competition for artisans has resulted in unpredictable and shorter contract cycles. This has introduced uncertainty about the future, which makes employers reluctant to enter into the 3-4 year contracts involved in the employment of apprentices. Apart from not having the capacity to carry the additional costs, they do not want to have to put them off if contracts do not eventuate (Marshman 1996). The move to shorter contract cycles (for example in the case of the new learnership contracts) reflects the introduction of 'lean production' production techniques aimed at reducing a firm's cost and risk (Harrison 1997). A key element in lean production is the Just in Time (JIT) production method. JIT offers employers considerable competitive advantage through cost savings. It is also a method for shifting the risk of market fluctuations from the purchaser of a good or a service onto the supplier, as the purchaser is not locked into a fixed long term contract. However, JIT production methods make it difficult to provide the continuity of work required for an apprenticeship and they are a factor in the growth of labour hire.

Interviews conducted for this case study with the skills development manager of the Mining Qualifications Authority (MQA) has revealed that that the mining and minerals sector, that was traditionally the principal employers of apprentices, is outsourcing production, maintenance and other services. This sector is outsourcing functions such as engineering, information technology (IT) and transport as an alternative to employing skills that are, among other things, difficult to find. The significance of this outsourcing of trade based work to labour hire companies is that labour hire firms primarily rely upon the pool of skilled people in the labour market, and are not large providers of formalized training of the type involved in traditional apprenticeship.

### **Social partnership and strategic engagement:**

As mentioned previously, the SDA was premised on a social compact around skills. Until the recent interventions by JIPSA, this had largely disappeared. In the absence of the social partners driving training, the skills profile of the country will not be sufficiently addressed. One key respondent from the Department of Labour has this to say:

"From a government point of view, some attention should be given to the approach adopted in the Skills Development Act which sought to ensure that skills development becomes integrated into broader government policies and projects so as to ensure that supply met actual demand. This strategy locates the approach to skills development within a broader policy context and will be guided by national priorities. It relates to macro-economic, industrial, labour market, and science and technology policies".

Since the promulgation of the Skills Development Act, 1998 (Act 97 of 1998) and more recently the introduction of the National Certificate Vocational (from 2007), the

regulations and practices associated with artisanship and apprenticeship have become vague. The Skills Development Act introduces the concept of a 'learnership' which does not replace apprenticeships nor does it link directly to the 5 conditions mentioned above (particularly the trade test). The National Curriculum Vocational (NCV) does replace the National Certificate (Parts 1 to 3) but does not link to the trade test. As we have seen earlier on, graduates from FET colleges will need to undergo a skills programme or an internship in the workplace that will end in a trade test.

The introduction of the NCV and the phasing out of the NATED 190/191 N1 & N2 negates the traditional path to becoming an artisan. The N1 & N2 were the theoretical route for the apprenticeship programme and it is not clear how the new NCV will cater for that.

### **Dilution of workplace learning:**

Since the introduction of the SDA, much has been made of shortages, which have emerged around workplace mentors, assessors and technical instructors. These shortages have not arisen merely because of increased demands arising out of the SDA (in terms of learnerships) but point to changes in workplace learning, which has been going on for some time. It is suggested that there has been a dilution of workplace learning (and workplace experience) since the late 1970's. A number of factors might have contributed towards this:

- The relationship between the artisan and apprentice was slowly compromised, as production became more of a priority. This impacted on the transfer of knowledge, which has at the heart of the traditional apprenticeship system.
- Training which had traditionally been a line management function shifted to human resources who do not always have an intimate knowledge of production processes.
- Over time the apprenticeship system became more focused on education rather than technical skills while workplace experience became compromised as the period of apprenticeships were reduced but apprentices were expected to operate at the same level as experienced artisans.
- Workplace learning is about a transfer of knowledge/skill and not about ticking boxes, which has tended to emerge in relation to learnerships.

### **Image of the artisan:**

Over the years various discussions have taken place on how to build the image of the artisan. Some years ago Eskom attempted to set up an Institute of Artisans to raise the image of artisans within the public arena. This issue has also been taken up during JIPSA discussions. It is clear that during different periods in history, the artisan was considered a valued skill within the workplace. In the post-apartheid era, the artisan became less appreciated and valued. In a recent newspaper article (Cape Times Insight May 15, 2007), Merseta CEO Dr Raymond Patel pointed that the dire shortage of artisans is not unique to South Africa but a global phenomenon that permeates the Western world because young people are afraid to get their hands dirty. Young people would rather work with computers than to for engineering and its associated professions. If the country is to increase the supply of artisans some measures will have to be implemented to encourage people to become artisans. A similar process might have to occur if learnerships are to be taken seriously. It is questionable whether the marketing around the end product of a learnership has

been properly done. Most companies are sceptical about learnerships and have questioned the quality from learnership programmes.

### **Lose of focus on intermediary skills:**

The current artisan shortage has been exacerbated by the fact that a large number of the learnerships that were initiated from 2001 were at the lower (NQF 1) rather than intermediary skills levels. This might partly be a result of a drive by government to meet specific targets to employ unemployed youth and for redress. The NQF 1 learnerships were bridging learnerships, which is critical if workers, previously denied access to training, could have the opportunity of moving up the skills ladder. This did not however, address scarce or critical skills needs. A balance needs to be achieved between redress learnerships and skills interventions at the intermediary and higher end of the skills spectrum. It should however, be noted, that according to some research, the introduction of learnerships, for example, at the higher end of the skills spectrum has proved to be problematic because of the costs involved and other related problems.

### **Incentives/funding:**

These have worked at different points in time and should be reviewed if industry is expected to train artisans beyond its immediate needs. Alternatively, the National Skills Fund should be restructured so as to provide funding for specific projects relating to the training of scarce and critical skills needs.

### **Transformation of the industrial relations system:**

Many of the changes outlined above such as those related to growth of labour hire and increased outsourcing of functions have been facilitated by reduced union influence in the workplaces, the broader deregulation of the labour market and changes in the industrial relations system. In turn, these changes to the industrial relation system have also contributed to the decline of the apprenticeship system.

We have seen from the previous sections that the creation and maintenance of a VET system producing 'industry' specific skills, like traditional apprenticeships in South Africa and Western Europe, depends on a set of interlocking institutional arrangements. These institutional arrangements include 'collective wage bargaining systems' and their associated strong business and union organisations. These arrangements are necessary to sustain cooperation in the provision of specific skills (Toner 1999). Industry specific skills in South Africa and Western Europe are acquired through a combination of employment and on and off the job training, have duration of around 3-4 years, and have well-defined standards for entry and training and in most cases result in well defined occupations which have considerable intra-industry mobility. Key features of these industry specific skills, notably those relating to wages, content of training and duration of training and prescribed off the job training are the subject of negotiations and agreement between business organisations and unions. These arguments result in common standards being applied within an industry to minimum wage levels and conditions of employment and consensus on the work content and career paths of tradespersons.

Estevez-Abe et al (2001) argue that this industry wide coordination is essential if workers are to be encouraged to invest in acquiring these industry specific skills. The existence of a recognised occupational labour market for these skills, established career paths and comparability of wages across firms reduces the risk to individuals in acquiring these skills. In countries such as the US, which do not have these

institutions, individual workers invest much more heavily in 'general' skills, notably college and university education. Just as the acquisition of skills in countries such as South Africa, is facilitated by a large infrastructure of vocational education institutions, so too in the US the existence of a large world class university sector and a culture that encourages self-funding of post-compulsory education, facilitates the attainment of general skills. The portability of these skills across firms and industries is designed to insulate workers from the risk of unemployment and diminished wages. The low risk of unemployment and a clear internal career path reduced the risk to individuals in investing in from specific skills.

The industrial relations changes that occurred over the past decades would appear to be adverse to the maintenance of the apprenticeship system, by undermining the broader institutional supports for this system. This applies especially to occupations such as metals, electrical and construction apprenticeships, as these are predominantly in industries where union influence was significant, but has been reduced.

## **DEMAND-SIDE                      RESPONSES                      TO                      DECLINING APPRENTICESHIP TRAINING**

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A number of policy responses are suggested from the demand-side approach. These responses are intended to remedy specific structural impediments to the training of more apprentices. The principle responses are briefly described below.

As highlighted at the outset, the current discourse around the shortage of artisans has led to some finger pointing and attempts to lay blame at the door of the Seta. Within such a climate, there is a tendency to romanticize about the past. The historical overview reveals that previous systems were not full proof, requiring ongoing changes and refinements. Finding solutions to the current shortages does not lie in attributing blame but some level of maturity in acknowledging where the problems exist so that the future generations can benefit from an improved education and training system. It is therefore, necessary to firstly, explore some of the problems, which have emerged around the implementation of the SDA. Secondly, identify and evaluate what initiatives are currently underway within DoL (and DoE) to address these and thirdly, the role played by the Joint Initiative on Priority Skills Acquisition (JIPSA) in galvanizing some action around the delivery of skills.

### **Implementation of the Skills Development Act (SDA)**

Many respondents amongst those involved in the drafting and implementation of the SDA have acknowledged that:

- There was an underestimation of the scale of the task and the volume of the problems in terms of implementing the SDA. This then could have fed into a failure to sufficiently factor in the extent to which the new system might become bureaucratized and hence, its resource intensity.
- There appeared to be a lack of understanding not only around the structure of the economy but also the nature of work processes (especially in relation to artisans and the role they played in the production process). 'Those pushing for a new order did not have an appreciation for the artisan and there was a sense that intermediate (artisan) skills are not important'. This was partly

related to the fact that the apprenticeship system had become so intrinsically linked with the apartheid system (and hence had become discredited) and there was a real sense that artisanal skills would no longer be required as part of the skills base of the 'new economy' which was to emerge. Hence, the artisan became a devalued commodity.

The failure to acknowledge that the process of translating a vision into policy and then implementation is not a simple one. The day-to-day operational realities of implementing legislation might require the ongoing refinement of the law.

In view of the apparent confusion around the status of the apprenticeship system, amongst other issues, it is questionable whether the new policy approach (and law) had been sufficiently communicated to all stakeholders. It is also questionable whether the original drafters of the vision ensured that their philosophy and approach was properly passed on to those who were required to administer and manage its implementation.

Training systems, by their nature are complex, and require time for implementation so that they can deliver. In view of the magnitude of introducing a new system, it is questionable whether appropriate transitional arrangements were put in place so as to give the new system time to become fully operational before collapsing the old.

The implementation of the Act has revealed, amongst others, the following problems, some of which are currently being addressed by DoL:

At the outset it should be acknowledged that the social partners –government, labour and business - negotiated the SDA and its implementation was based on a model of co-determination. Hence, the Setas are the sum total of the social partners and if they are not driving implementation, it will impact on their effectiveness as is the case with other structures such as the National Skills Authority (NSA). This failure points to the resources allocated by the social partners to drive implementation and consequence of the Setas becoming an extension of the collective bargaining arena. These issues point to some critical governance concerns, which have emerged.

The pipeline for the development of skilled personnel is partly a responsibility of education and labour. Hence, it is not within the sole domain of Setas to deliver skills into the economy. The effectiveness of the educational system is critical in achieving this objective. This not only raises the question of the linkage between education and labour and the lack of co-ordination between the two ministries but also highlights the fact that a number of blockages have occurred, some of which are systemic and have nothing to do with the functioning of the Setas. For example, the disconnect between industry (and Setas) and FET colleges is highly problematic.

A related systemic problem revolves around the uncertainty, which has surrounded the model and management of quality assurance. The idea of a single qualifications structure in the form of the NQF might have been a good idea in theory as it sought to ensure a continuum between vocational based education and higher education. In reality however, the disjuncture between education and training has undermined this approach, as no consensus has existed up until now on whether the two approaches can operate in one system. Whilst the NQF was set up by both education and labour, the vast majority of qualifications have been occupational/workplace based which have to be registered within an education type framework (SAQA). As a result, compliance with the NQF has effectively, complicated occupational based learning.

The notion of learnerships remains a good one but has become slightly contaminated by virtue of the way in which they have been implemented. The concept of the

learnership was a way of extending the idea and concept of the traditional apprenticeship beyond the traditional crafts. As Lundall (1997) argues, it was intended to be a mass-based form of apprenticeship. Research has revealed that learnerships until fairly recently, have tended to be focused at very low skills levels. Where artisan-based learnerships have been introduced, scepticism emerged around quality. It has been argued that this is partly a result of the fact that learnerships were not ready to be implemented when they were but there was political pressure to do so as opposed to continuing with the apprenticeship system. During the first NSDS, Setas performance was measured against the extent to which they promoted learnerships with little or no focus on traditional apprenticeships. Part of the problem could have been linked to the absence of an agreement on learning pathways for artisans and the definition of an artisan. As mentioned above, there was insufficient clarity around how the two systems (apprenticeships and learnerships) would co-exist while the overall vision around learnerships might have become diluted following political pressure to use learnerships as a vehicle to address the problem of unemployment following the GDS in 2003.

## **DoL initiatives**

Despite some concerns around DoL's capacity to administer and ensure implementation of the SDA, it has responded positively and has been seen to be quite proactive in taking up the challenge of addressing the shortage of artisans. This has been especially so since the launch of JIPSA, which was initially met with some trepidation. DoL has taken ownership of finding solutions to speeding up the supply of artisans. A number of processes have been initiated in this regard.

### ***Learning pathways for artisans:***

Linked into the JIPSA process, the DoL has finalized a document which sets out a proposed agreement on learning pathways in order to become an artisan, the definition of an artisan and providing additional incentives for apprenticeships. Up until now there has been no common agreement on what is an artisan and the route to becoming an artisan. The Manpower Training Act allowed each industry to decide on their own route, which caused fragmentation and raised concerns around quality. The current proposal provides for four routes to becoming a registered artisan, provided some sort of trade test is built in and accredited training providers are utilized.

The DoL has also been engaging with national treasury around the standardization of tax incentives for apprenticeships. It is understood that the proposal on the table is aimed at ensuring that apprenticeships are treated the same as learnerships in terms of tax rebates so that employers can receive a rebate for every year of the apprenticeship.

### ***Initiatives to increase artisan numbers:***

The DoL, following an intervention by JIPSA, has brought together the CEO's of all the Setas involved in the training of artisans so as to explore ways to increase the number of apprenticeships. It is understood that this Seta forum has made significant progress and various initiatives explored (coupled with the agreement reached on learning pathways) could result in a significant increase in the supply of artisans from the current levels of about 3 500 per annum to about 12 500 per annum.



### ***Amendments to the SDA:***

A number of proposed amendments to the SDA have been gazetted to provide clarity around the continuation of the apprenticeship system. The following include some of the proposed amendments:

- The apprenticeship training system was never repealed as provided for in the MTA. There is now an attempt to merge various clauses in the MTA with the SDA by introducing a new chapter on apprenticeships.
- Some amendments are also being proposed in relation to the establishment of the Quality Council for Trades and Occupations (QCTO)
- The establishment of Artisan Development Institutes and or Institutes of Sectoral Occupational Excellence. These institutes will provide training and professional development of artisans and other learning programmes as well as conducting of trade tests. It is assumed that these learning programmes will replace the N1 & N2 courses which provided the theoretical training of the apprenticeships in FET colleges.
- The introduction of a new clause on internships (another route to artisan development)
- Additional amendments proposed to the Skills Development Act aim to provide clarity around the routes to artisan development

### ***Resolution of NQF:***

The birth and evolution of the NQF did not go smoothly. The NQF was established by the South African Qualifications Authority (SAQA) Act of 1995. By 2001 a review was initiated by government, with some educationalists believing that this signalled an awareness that the approach seemed not to be working. The departments jointly responsible for the NQF, Department of Education (DoE) and Department of Labour (DoL), commissioned a study team to conduct a review of problems with implementation.

The study team produced a report in 2002, entitled *Report of the Study Team on the Implementation of the NQF*. This report became known as the NQF Review. It proposed substantial changes to the NQF and hence became the subject of intense debate between the two departments. Resolution to this issue has dragged on for years now.

Following the review of the NQF, the joint Policy Statement by the Ministers of Education and Labour points out to the need of change in the organizational structure of the NQF. There will be three qualification frameworks instead of one National Qualification Framework. These are:

- The Higher Education Qualification Framework (HEQF)
- The General and Further Education and Training Qualifications Framework (GFETQF)
- The Occupational Qualifications Framework (OQF)

These new arrangements entail the establishment of three Qualification and Quality Assurance Councils (QCs) to manage the three frameworks. The three Quality Councils are:

- The Council on Higher Education (CHE) with its Higher Education Quality Council Committee (HEQC)
- Umalusi for General and Further Education

- The Qualifications and Quality Assurance Council for Trades and Occupations (QCTO), the new body responsible for quality assurance of occupational qualifications.

It is envisaged that the QCTO will have jurisdiction and oversight of learning that culminates in occupational competence. In building on existing structures so as to respond effectively to labour market needs as well as to develop the quality of work-integrated learning, the QCTO will be a mechanism co-ordinating and managing the development and delivery of occupational qualifications. Currently, there is no uniformity between the SETAs around quality assurance, which could be provided by the QCTO.

## **JIPSA**

The Joint Initiative on Priority Skills Acquisition (JIPSA) – a multi-stakeholder driven process – was established in March 2006 and was tasked with the responsibility of addressing the supply of scarce and critical skills so as to meet the objectives of the Accelerated and Shared Growth Initiative (AsgiSA). JIPSA faced a rather daunting task of having to almost coerce various constituencies, especially government departments, to begin to work together to address the delivery of skills. In view of various sensitivities around its establishment, JIPSA was careful to argue that its mandate was not to usurp the authority of existing institutions or replace them but to begin to assist them in unblocking the logjams. One of the interviewees for this case study commented that JIPSA initially faced a less than warm reception from those institutions and government departments who felt that their authority was being undermined.

JIPSA's most critical challenge has been to create a sense of common purpose and partnership between the key players and within and between different institutions. Key to this has been to ensure some level of coordination within and between government departments such as education and labour, which has been decidedly lacking. JIPSA was a desperate attempt to raise the profile of the skills shortage in the country.

More than anything however, JIPSA has put skills higher up on the political radar with an attempt being made to provide focus and play a co-coordinating and convening role. It has achieved this as well as ensuring the reprioritization of funding for the delivery of skills such as in relation to artisans. Some progress is being made but in view of the fact that JIPSA is not an implementation agency, it is only able to give guidance on how departments and other structures and institutions should proceed.

JIPSA's target on artisans is to increase training output to 50 000 between now and 2010, meaning that the country has to train about 12 500 artisans per year, or an additional 7 500 new artisans each year. To put this figure into perspective, a total of 36 703 apprenticeships were registered in the period from April 2000 to March 2005 in the two routes (S13 and S28). For this to be a reality there should be a common ground and understanding on creating coherence and certainty on the four routes to artisan development proposed by the Department of Labour. For example, a lot can still come from the further education and training (FET) college route through an internship or skills programme. It is well understood that colleges are not producing the quality of artisans that industry requires, which is why so few graduates are absorbed immediately into the labour market. Unemployed graduates or college

learners who are engaged in basic technical and trades courses can be put into accelerated programmes.

Seifsa has developed the accelerated artisan training model at the Fundi training centre since 2005. The Fundi accelerated artisan-training model targets apprentices who have completed theoretical training at FET colleges. After 80 weeks of training, the apprentices are ready to undergo their trade test. Under this accelerated programme a total of 69 artisans have been trained to date. Although the figure is still low, it's a pointer in the right direction. Opening up other underutilized training facilities around the country might help and be used for skills training programmes. Based on the success achieved by the Seifa initiative, the Manufacturing Engineering and Related Services education and training authority (Merseta) has approved the accelerated training model, and is funding a pilot project to train 650 artisans in 14 metal engineering trades and 650 artisans in automotive trades (Engineering News, 11 October 2007). This project is capable of increasing the number of artisans in South Africa to between 3 000 and 4 000 in the next 18 months to 36 months if additional funds are available.

Meeting the target of training 50 000 artisans by 2010 is not unrealistic provided the SETAs have the financial resources to fund that training. Literature review has confirmed that a target of 12 500 new apprentices per year has been reached before. In 1985, a total of 12 933 apprentices were indentured (see Table 2), although it is important to revisit what they did in order to achieve that target.

## RECOMMENDATIONS

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A number of recommendations have been formulated, based on the findings of this study. I have distinguished between high level recommendations that relate to strategic issues with system-wide implications and recommendations that relate to improving the effectiveness of the current institutional arrangements and therefore can be implemented in the short to medium term.

### High level and strategic recommendations

This section highlights those recommendations that are related to systemic changes, and which will need to be explored for the medium to long term.

#### ***The need for finalisation of regulation governing artisan development***

Critically, this study flagged the issue of the tension between the Manpower Training Act of 1981 and the Skills Development Act of 1998. What regulation ought to govern apprenticeships and learnerships? The existence of such a tension has caused confusion around the status of the apprenticeship system among key stakeholders.

The notion of learnerships remains a good one but has become slightly contaminated by virtue of the way in which they have been implemented. The concept of the learnership was a way of extending the idea and concept of the traditional apprenticeship beyond the traditional crafts. This research has revealed that learnerships until fairly recently, have tended to be focused at very low skills levels.

Where artisan-based learnerships have been introduced, scepticism emerged around quality. It has been argued that this is partly a result of the fact that learnerships were not ready to be implemented when they were but there was political pressure to do so as opposed to continuing with the apprenticeship system. During the first NSDS, Setas performance was measured against the extent to which they promoted learnerships with little or no focus on traditional apprenticeships. Part of the problem could have been linked to the absence of an agreement on learning pathways for artisans and the definition of an artisan.

It is therefore extremely important for the system to reach an agreement on creating coherence and certainty on the various training pathways to reaching artisan status.

### ***Resolution of the National Qualifications Framework (NQF)***

It is recommended that the final decision on the fate of the NQF be finalised so that the provisional agreement which has been reached on learning pathways for artisans can be implemented. Currently, there is a lack of uniformity and coordination between SETAs around quality assurance, which could be provided with the finalisation of the NQF.

Thus, the future of artisan development in South Africa depends on the form in which the NQF will take.

### **Recommendations related to improving the effectiveness of the current institutional arrangements**

This section focuses on those recommendations that can be implemented within the existing framework and therefore have immediate application.

As indicated in the main body of the report, the institutional arrangements that have been established to operationalise the apprenticeship and learnership systems remain vague. It is important that explicit decisions are taken in relation to improving SETA accountability and institutional governance.

A key shift in the current NSDS is the move away from chasing learner intake targets without measuring the impact of the intervention; an attempt to explore skills programmes beyond learnerships such as apprenticeships; to address scarce and critical skills; efforts to build relations between SETAs and institutions for occupational excellence which could include FET Colleges or any other institution/structure and an attempt to begin to measure the impact of SETA interventions.

Effective skills development relies on a positive interface between institutional conditions, market incentives, government policy, monitoring and evaluation of skills programmes and the decisions that firms make in relation to recruitment and workforce upgrading. In the light of the context of an acute shortage of relevant skills, especially those at the intermediary level, it is critical that SETAs take the lead in assessing the effectiveness and/or ineffectiveness of the learnership and apprenticeship pathways and their impact on the demand for and supply of skills for the industry.

## CONCLUSIONS

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Evidence has emerged in this study of severe shortages of artisanal labour in key technical fields in the South African labour market. It has emerged that the greatest and growing demand for artisanal labour is for Extraction and building trades workers in the Construction sector. The second largest demand is for Metal, machinery and related trades in the repair of motor vehicles and in the Manufacturing sector.

This shortage has been worsened by government's massive investment in improved social and economic infrastructure at an unprecedented rate ahead of 2010. However, significant progress is being made by all interested parties in order to alleviate the shortages. But significant challenges have emerged from this study with regard to: the list of priority trades; legislation governing apprenticeships and learnerships; coherence and certainty on the various pathways to reaching artisan status; resolution of the NQF; the efficiency of SETAs and other stakeholders in artisan development and the shortcomings in the functioning of the training market;

The findings of this study suggest that JIPSA's proposals and other interventions highlighted in the report are on a positive trajectory. It is still too early to measure the impact of these developments, but these interventions are likely to make a considerable impact on the South African labour market in the near future.

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