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DoL SCARCE & CRITICAL SKILLS – EDUCATORS

Project 4.1: A multiple source identification and verification of scarce and critical skills in the South African labour market. Phase 2: Case studies of occupations or occupational ‘families

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BACKGROUND

The Department of Labour commissioned a Research Consortium which included the Human Sciences Research Council (HSRC) to undertake a range of research projects 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.

Through Objective 1 of the NSDS, the Department of Labour (DoL) 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).

This report is one of 12 *Case studies of selected professions/occupations* regarded to be experiencing skills shortages. The case studies constitute 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 Project 4.1 is to identify, collate, interpret and verify information on scarce and critical skills currently available within the South African labour market. A secondary objective is to identify future occupational employment prospects (especially in those occupations where scarcity is suspected) (Erasmus 2006).

The DoL study is designed to rely on a process of triangulation involving the use of secondary literature; data obtained through previous HSRC studies, other studies, 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 occupations in which there is a scarcity of qualified and experienced people.

The proposed research process can be divided into six non-sequential phases:

- (1) Quantitative occupational and sectoral profiling;
- (2) Case studies of occupations or occupational 'families';
- (3) A survey of employers with vacancies;
- (4) Documentary research; and
- (5) Verification synthesis report writing.

The purpose of Phase 2: *Case studies of selected professions/occupations* is to assess occupational shortages by using a combination of labour market data, background information on the selected occupation, anecdotal evidence, and factors of demand and supply. An understanding of the reasons for perceived skills shortages helps to determine the appropriate measures needed to alleviate these shortages. For example, with regard to genuine skill shortages or absolute scarcity, supply side policy responses might include increases in education levels and adjustments to skilled migration targets and policies. As there is a delay between the start of new education and any addition to supply, immigration responses need to take precedence in the short term. Demand side measures to address some of the issues associated with recruitment and retention or relative scarcity include increasing pay scales or providing incentives e.g. to work in rural areas.

Drawing on preliminary secondary research (i.e. baseline demand and supply data) about a profession or occupation, or of a “family” of occupations (Engineers ↔ Technologist ↔ Technicians ↔ Artisans) or focusing on certain specialisation within a “family” (i.e. managers), the methodology used by Breier & Wildschut (2006) to study the profession and education of medical practitioners was adopted. Their research involved both quantitative and qualitative methods:

- Review of literature relating to (the) profession and professional education internationally and in South Africa including histories and current approaches to education;
- Analysis of statistics of current demand and supply, enrolments and graduates in terms of age, race and gender;
- Policy review including Acts of Parliament and regulations, reports and statements emanating from related government departments and documents relating to statutory bodies;
- Media/newspaper articles on issues such as the brain drain (e.g. in response to government regulations), skills shortages needed for economic development (ASGISA), etc.;
- A review of labour market studies in the selected professions; and
- Interviews with key informants, including academic personnel and administrators, students, professional bodies/associations and employers

Information sources used for the analysis of statistics of current demand and supply include the following:

- The statutory regulatory body, the South African Council for Educators (SACE)
- The Department of Education (DoE)’s Higher Education Management Information System (HEMIS)
- The Department of Education (DoE)’s *Education statistics in South Africa at a glance (1999 – 2005)* and *School realities (2006)*.
- Stats SA’s Labour Force Survey (LFS) (September, 2005)
- The South African Qualifications Authority (SAQA) analysis of the National Learners’ Records Database (Report 2, 2007)

EDUCATORS

This study dovetails with another HSRC project on Teacher Education. After the Council on Higher Education initiated a review of teacher education programmes in October 2004, a National Policy Framework for Teacher Education and Development was gazetted. This provided the basis for a new system of teacher education and development for a new generation of South African teachers. The Teacher Education Project (TEP) emerged within this context, and has as its overall goal “contribut[ion] to the knowledge and information base for policy formulation and implementation regarding the organisation and practice of teacher education, with a particular emphasis on initial teacher education (both pre-service and upgrading), as well as the professional development of school leaders and managers” (CEA, CEPD, EFT¹, HSRC and SAIDE, 2005).

¹ The latter organisation has subsequently been disbanded; uncompleted projects have been taken over by the consortium.

Within the framework of the TEP described above is a study titled, *Understanding Teacher Demand in South Africa* (Arends & Chisholm, in press). The main differences lie firstly, in the focus, secondly, on the data sources used, and thirdly, in the methodologies to calculate demand. Whereas the focus of the Arends & Chisholm study is on teacher demand, this (Erasmus & Mda) study examines supply and demand. And whereas the Arends & Chisholm study analyses EMIS, PERSAL and Labour Force databases, this (Erasmus & Mda) study analyses a different set of databases: SACE, HEMIS, LFS and the SAQA National Learners' Records Database. Statistics provided to the Dean's Forum by collection of statistics in selected qualifications from Faculties themselves is also examined.

Both studies conclude firstly that deficiencies, inconsistencies and contradictions in and between the databases preclude any definitive conclusions on the basis of these databases alone, but that it is clear firstly that the issue is distributional rather than the existence of any absolute shortages, secondly that the priority lies on the one hand in examining how and why shortages in specific subjects such as maths and science occur at school level and on the other in improving teacher quality. The two papers should be read side by side as they cast light on the same issue through slightly different lenses.

For the purposes of this study, the term "educators" will be limited to those who impart knowledge or educate, in the schooling system. The two terms, "educators" and "teachers," will therefore be used interchangeably.

The discourse on skills – identification, shortage, development – has, until recently, excluded educators and the education profession. In fact, it may still be argued, that educators and the education profession do not belong to this discourse. That argument is based on the view that educators are professionals, while "skill" is associated with mechanical tasks and occupations. This argument may in turn be dismissed as being a very narrow view of skills and professionals. The questioning of educating or teaching as a skill may further be accused of elitist leanings whereby profession implies formal education – associated with mental capabilities - while mechanical occupations are associated with handwork, and training, which may just require drilling in specific actions, and unthinking and reflex actions.

A dictionary definition of "professional" includes words such as "specialist", "expert" and "skilled." The implication therefore is that a professional is assumed to have the necessary skills of the profession, or, put the other way, that being skilled is embedded in expertise and professionalism. Skill is described as ability, expertise, proficiency, aptitude and competence, all words that are clearly applicable to educating or teaching. Some dictionary synonyms of skill, such as "dexterity" and "handiness", may be associated with mechanical occupations, and not really applicable to educating.

The objection to treating educating or teaching as a mechanical activity has, in the past few years, been voiced by the opponents of the Outcomes-based education (OBE) approach in the South African school system. Jacobs (2000), for instance, questions the appropriateness of the OBE approach in the education field because she says the approach is "suitable to use in training students to perform industrial-related tasks such as mechanics, word-processing and technical skills" (p.120),

whereas disciplines such as Art, Humanities, Literature, Mathematics and Science require “a much broader conceptual framework” (p.120). She further states that liberal, experiential and naturalistic curriculum theorists object to OBE’s treatment of knowledge as instrumental, whereby “knowledge is used merely as a means to learn job-related skills, lists of performances and observable behaviours” (p.120). Related criticism came from Harley & Wedekind (2004:200) who claim that in the new curriculum “ ‘content’ was replaced by ‘outcomes.’ ”

In this study, skill is defined as an ability, expertise, proficiency, aptitude and competence, in doing something well, usually gained through training or experience.

The question of scarce skills in the education profession is in the context of skills shortage in SA. The importance of production of sufficient, skilled students and workers, addresses the “growing demand for technically qualified personnel required to keep the economy on a strong growth trajectory” (Education Herald, *The Herald*, 08 February 2006, p. 6). This discourse on raising the level of, and increasing, skills in SA, features at the top of the priority lists of the Ministries of Labour, Science and Technology, Trade and Industry, Education, and the Deputy President’s Accelerated and Shared Growth Initiative for South Africa (ASGiSA) programme, and Joint Initiative on Priority Skills Acquisition (JIPSA), and has received attention from the Minister of Finance’s budget speeches, for example, the October 2007, and the February 2008 budget speeches.

The skills shortage in SA is directly related to the quality and quantity of education provided to the majority of South Africans, especially in the past. The shortage reflects the type of education that was made available to the majority; the exclusivity of quality education for a few; and the general lack of access to education for many.

The concepts of absolute and relative scarcity as defined in the definitions and classification of scarce and critical skills in the Department of Labour (DoL) document (DoL 2007:62) are relevant for our study. Scarcities in the education profession can be argued to include both absolute and relative scarcity. In some areas of the profession the scarcity can be seen as absolute in that the lack of skilled education professionals prevents implementation of planned growth strategies and results in quality problems. However, it can also be shown that most scarce and critical skills in the education profession fall under the concept of relative scarcity: scarcity pertains to geographical location, equity considerations, and replacement demand. While the scarcity of the skills might be relative, the skills may still be critical if they are “key, generic or fundamental ... such as cognitive skills..., language and literacy skills, mathematical skills, ICT skills ... ” (DoL 2007: 63) and these particular skills are fundamental in the education profession.

Who says there is a shortage of teachers in South Africa? How is this shortage quantified?

Who says?

Accounts of teacher shortages abound in government and national media statements. There are regular reports in the print and electronic media that rural schools and disadvantaged communities have great shortages of teachers, especially qualified (and quality) teachers. During teacher mass demonstrations, and

through statements by Teacher Union leaders, teachers complain of having overcrowded classrooms, which implies a shortage of teachers. The South African Democratic Teachers' Union (SADTU), the biggest union in the public service, and therefore, biggest teachers' union in SA consistently argues that there are shortages of teachers, based on members' experience of large classes (Bell 2007, *The Star*. November 9), whereas DoE and DoL, using data sets, consistently argue there are no teacher shortages, but nonetheless agree that there are skill issues that need to be addressed. What these skill issues are, is the issue. Later in this chapter the skill issues are discussed

At the launch of the Joint Initiative on Priority Skills Acquisition (JIPSA), in March 2006, the Deputy President of RSA also highlighted the question of teacher shortages:

“Nothing short of a skills revolution by a nation united will extricate us from the crisis we face.

Our support for skills development includes poorer schools and increased efforts to support maths, science *and English language skills* in schools (author's emphasis). JIPSA will be focusing specifically on teachers of these subjects. Teachers are being regarded as a scarce and a priority skill.

JIPSA will support the alignment of Further Education and Training (FET) Colleges and Higher Education institutions in their work of producing graduates that we can employ who meet the demand and needs of employers in the public and private sector.” (South African Government Information 2006)

Apart from the decreasing number of teachers overall, the skill that is seen as most scarce is that of teachers of specific subjects, especially Mathematics and Science. Below are some examples.

A number of agencies have identified where critical teacher shortages lie in identifying skills in short supply. Thus, for example, when the Education, Training and Development Practitioners (ETDP) SETA submitted its updated Sector Skills Plan (SSP) on November 30, 2006, it included in its list of scarce and critical skills: School teachers: Maths; Early Childhood (Preprimary school teachers); School teachers: Natural sciences; School teachers: Technology (includes ICT); School teachers: Languages; Special Needs teachers; and School teachers: Economic and Management Sciences (ETDP-SETA 2006). The National Research Foundation (NRF) has identified scarce skills at postgraduate level as: accounting, auditing, actuarial sciences bioinformatics, biotechnology, chemistry, computer science, demography, engineering, financial management, geology, information systems, mathematical sciences, microbiology, physics, statistics, tourism, and transportation studies (NRF 2002). Again, natural sciences feature a lot in this list. The 2006 National Scarce skills list identified the following as in short supply: Early Childhood workers; School teachers: Maths, Science; D&T specialisations; Higher education lecturers in Engineering, Astronomy, Marine biosciences, African origins and Physics (National Scarce Skills List (ASGISA aligned) 2006). The Ministry of Education is investing in

educating more Mathematics, Science and Technology (MST) teachers; equipping schools to offer these subjects and improve performance of learners in these subjects. This Ministry has also announced that it is introducing a programme that will see MST teachers being paid higher salaries than their counter-parts who are offering subjects not seen as critical, or (by implication) subjects where there is an over-supply of teachers.

While language skills, and especially English language skills are critical, their scarcity has not attracted the same attention that the scarcity of skills in Mathematics and Science has.

There is a significant and large body of articles, columns and commentaries in the media on skills shortages in education. While some of these can be classified as sensationalist writing, the regularity of these writings does reflect the passion and great concern of the public about the state of education in the country.

How is this shortage quantified?

It is difficult to get official figures as the SA Government, Education Management Information System (EMIS), and the Personnel and Salary Information System of (PERSAL) data, are variously viewed by researchers in the field as problematic and not reliable (Peltzer et al. 2005:32-3). The media and unionists, however, now and again report on classrooms where there are 50:1 and above teacher-learner ratios. In these statements, actual numbers of teachers needed are given (for example, statements in various media in January 2008). The figures may be according to provinces, grade levels, or urban versus rural. For instance, an HSRC study (Paterson and Arends 2007) was cited as reporting that South Africa needs 30 000 new teachers every year, but slightly more than 5000 only graduated in 2006 (Bell 2007, p 2).

Comparison is also done by juxtaposing the loss of educators (through HIV/AIDS, change in careers, and migration of teachers to other countries or continents), with the number of teachers who enter the profession every year. The verdict seems to be that the scales are heavier on the former.

Is there actually a shortage? What do the available data tell us?

Looking at whether there actually is a shortage means looking at perceptions versus reality. There is a need to interrogate the interpretation of “scarcity”/ “shortage.” As stated above already, “the SA Govt does not keep any data on how many teachers are lost through foreign recruitment” (Appleton et al, 2006: 774).

Evidence from research and various databases suggests that, in terms of numbers, there may be enough teachers in South Africa, but the problem is distribution according to: geographic areas, provinces, regions/districts, grade levels, subjects, qualifications, skills, quality, race, and language. The next section on supply and demand for educators illustrates what seems to be a fallacy of the shortage of teachers. The Arends study (2007; see also Arends & Chisholm, in press) also concludes that there is no absolute shortage of educators.

Educators: Supply and Demand

The demand

The number of educators needed in South Africa is informed by the need to maintain predetermined levels of educators relative to the learner population. The current target of the DoE is one educator for every 40 learners in ordinary primary schools and one educator per 35 learners in ordinary secondary schools (DoE, 2005:35). It is generally accepted that the lower the learner-to-educator ratio, the more contact an educator may have with a learner during the learning and teaching process.

In its report, *Teachers for the future: meeting teacher shortages to achieve education for all*, the Department of Education (DoE, 2005:9) acknowledged that “research on teacher demand and supply has indicated no quantitative shortages at the present time”. This assertion is supported by analyses of figures, from the various databases used here, for educators, in relation to learners which indicate that there is currently an oversupply of educators in South Africa.

If the national figures published in the centerfold of *Education statistics in South Africa at a glance in 2005* (DoE, 2006a:19) is taken and the targeted learner-to-educator is applied then there was a surplus of 49 707 educators in the ordinary public schooling system of South Africa in 2005 (Table 1). If educators and learners from ordinary private schools are added to the equation then there was a surplus of 60 487 educators in the country in 2005.

Table 1: A comparison between the number of educators needed according to the targeted learner-to-educator ratio and the number of educators reported in the 2005 SNAP Survey

Ordinary Public Schools	Learners	Educators needed	Targeted L-E-R	Reported educators	Reported L-E-R	Surplus
Primary	7588987	189725	40	224439	33.8	34714
Secondary	3769255	107693	35	120377	31.3	12684
Combined	385018	11001	35	12857	29.9	1856
Intermediate	159056	4544	35	4997	31.8	453
Total	11902316	312963	38	362670	32.8	49707
Ordinary Independent Schools	Learners	Educators needed	Targeted L-E-R	Reported educators	Reported L-E-R	Surplus
Primary	92337	2308	40	4518	20.4	2210
Secondary	59450	1699	35	3570	16.7	1871
Combined	163662	4676	35	11375	14.4	6699
Intermediate	0	0	0	0	0.0	0
Total	315449	8683	36	19463	16.2	10780
Ordinary Schools	Learners	Educators needed	Targeted L-E-R	Reported educators	Reported L-E-R	Surplus
Primary	7681324	192033	40	228957	33.5	36924
Secondary	3828705	109392	35	123947	30.9	14555
Combined	548680	15677	35	24232	22.6	8555
Intermediate	159056	4544	35	4997	31.8	453
Total	12217765	321646	38	382133	32.0	60487

L-E-R = learner-educator-ratio

Reported educators included all SGB-paid educators at public schools

Source: Education in South Africa: a global picture (DoE, 2006:19).

If the same calculations are applied to 2006 figures published in the DoE's 2006 *School realities* information sheet (DoE, 2006b:1), and an across-the-board learner-to-teacher ratio of 38:1 is used, then the surplus becomes 52 394 educators in public schools and increases to 62 852 if private schools are included.

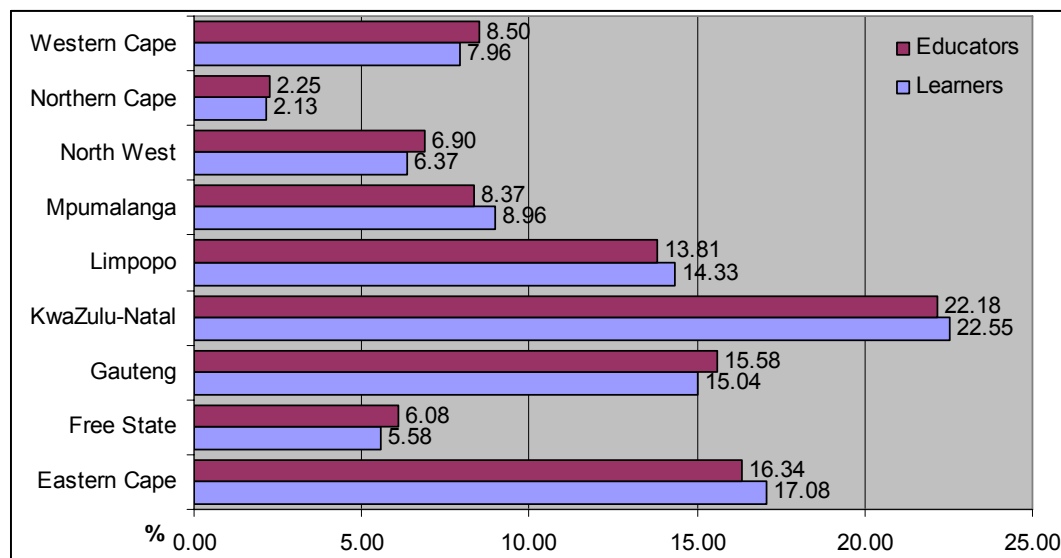
In 2005, using the centerfold figures (DoE, 2006b:18-19), the national average learner-to-educator ratio at ordinary public schools in the country was 32, 8, ranging, by province, from 29, 7 in the Free State to 34, 4 in KwaZulu-Natal. In between were Limpopo with 34,1 learners for every educator in the province; Mpumalanga with a ratio of 33,6:1; Eastern Cape 33,0:1; Northern Cape 31,9:1; Gauteng 31,6:1; Western Cape 31,5:1 and North West with 31,1 learners for every educator.

According to the DoE (2006b:15), the national learner-to-educator ratio (L-E-R) stayed fairly consistent between 2001 and 2004, but decreased between 2004 and 2005, due to the fact that all SGB-paid educators at public schools were included for the first time in 2005. Six provinces (the Eastern Cape, the Free State, Gauteng, KwaZulu-Natal, Mpumalanga and the Western Cape) showed a decrease in L-E-R from 2001 to 2005, while Limpopo, the Northern Cape and Mpumalanga indicated an increase.

From 2005 to 2006, the national average L-E-R at ordinary public schools in South Africa and in some of the provinces stayed relatively constant (net increase or decrease of one percentage point or less between 2005 and 2006). The highest net increase between 2005 and 2006, namely 6, 6 per cent, occurred in Gauteng. Other provinces that showed increases include Mpumalanga (2, 7 per cent) and the Eastern Cape (1, 0 per cent). Ordinary public schools in six of the provinces indicated a net decrease in their learner-to-educator ratios. The provinces' L-E-R decrease from the highest to the lowest percentage are: North West (-5,3 per cent); KwaZulu-Natal (-4,5 per cent); Limpopo (-2,2 per cent); Western Cape (-1,4 per cent); the Free State (-0,7 per cent) and the Northern Cape (-0,3 per cent).

Despite the DoE's (2005:35) "successes in reducing class sizes in historically disadvantaged schools," the DoE (2005:46) is distressed about the uneven distribution of educators across the provinces and specifically worried about rural areas that experience quantitative shortages. Figure 1 shows that there are proportionally more educators deployed in the Western Cape, the Northern Cape, North West, Gauteng and in the Free State if compared to the distribution of learners. It is indeed the more rural provinces such as Mpumalanga, Limpopo, KwaZulu-Natal and the Eastern Cape in which educators are underrepresented.

Figure 1: Provincial distribution of educators and learners, 2006



Source: Calculated from Table 2: DoE's 2006 School realities information sheet (DoE, 2006b:1)

The fact, however, that there are proportionally fewer educators in some provinces than in others does not necessarily mean that there is a shortage of educators in these provinces. If the targeted ratios of 40:1 for primary schools and 35:1 for secondary schools are applied to the number of learners and educators who were in the ordinary school sector, then all provinces had a surplus of educators in 2005 (Table 2).

Table 2: Number of educators needed at targeted learner: educator ratio compared with the number of educators in the ordinary school sector by province (2005)

Province	Learners			Educators				
	Primary	Secondary	Total	Primary*	Secondary**	Need	Have	Surplus
Eastern Cape	1550900	654004	2204904	38773	18686	57458	67230	9772
Free State	405442	263482	668924	10136	7528	17664	23400	5736
Gauteng	1064806	676617	1741423	26620	19332	45952	60121	14169
KwaZulu-Natal	1720347	994784	2715131	43009	28422	71431	80979	9548
Limpopo	1154178	751290	1905468	28854	21465	50320	56160	5840
Mpumalanga	571819	341825	913644	14295	9766	24062	27701	3639
North West	528097	317163	845260	13202	9062	22264	27454	5190
Northern Cape	134992	74741	209733	3375	2135	5510	6641	1131
Western Cape	622706	356802	979508	15568	10194	25762	32447	6685
National (Total)	7753287	4430708	12183995	193832	126592	320424	382133	61709

Source: Calculated from: DoE (2006a) *Education statistics in South Africa at a glance in 2005*.

Pretoria: Department of Education, Table 7, p.17, 20-21.

* L-E-R = 40:1

** L-E-R = 35:1

Based on the targeted L-E-R there were only three districts in the Eastern Cape, namely Libode (-76), Lusikisiki (-316) and Mbizana (-102), that showed educator shortages in 2005.

If the current ratios of 35:1 for primary schools and 30:1 for secondary schools are applied to the number of learners and educators who were in the ordinary school sector, then KwaZulu-Natal, Limpopo and Mpumalanga had a shortage of educators in 2005 (Table 3). Still, overall, there was a surplus of around 13 000 educators in the country.

Table 3: Number of educators needed at current learner: educator ratio compared with the number of educators in the ordinary school sector by province (2005)

Province	Learners			Educators				
	Primary	Secondary	Total	Primary*	Secondary**	Need	Have	Surplus
Eastern Cape	1550900	654004	2204904	44311	21800	66112	67230	1118
Free State	405442	263482	668924	11584	8783	20367	23400	3033
Gauteng	1064806	676617	1741423	30423	22554	52977	60121	7144
KwaZulu-Natal	1720347	994784	2715131	49153	33159	82312	80979	-1333
Limpopo	1154178	751290	1905468	32977	25043	58020	56160	-1860
Mpumalanga	571819	341825	913644	16338	11394	27732	27701	-31
North West	528097	317163	845260	15088	10572	25661	27454	1793
Northern Cape	134992	74741	209733	3857	2491	6348	6641	293
Western Cape	622706	356802	979508	17792	11893	29685	32447	2762
National (Total)	7753287	4430708	12183995	221522	147690	369213	382133	12920

Source: Calculated from: DoE (2006a) *Education statistics in South Africa at a glance in 2005*. Pretoria: Department of Education, Table 7, p.17, 20-21.

* L-E-R = 35:1
 ** L-E-R = 30:1

Although the Eastern Cape still showed a surplus of educators in 2005, if the current ratios of 35:1 for primary schools and 30:1 for secondary schools are applied to the number of learners and educators who were in the ordinary school sector, there were three additional districts with educator shortages in 2005. Table 4 below shows the districts in which shortages were calculated in ordinary schools in 2005. It is only in KwaZulu-Natal, Limpopo and Mpumalanga where shortages in districts resulted in an overall shortage in the province.

Table 4: Number of educators needed at current learner: educator ratio compared with the number of educators in the ordinary school sector by districts with shortages in 2005

Province	Learners			Educators				Surplus/ shortage
District	Primary	Secondary	Total	Primary*	Secondary**	Need	Have	
Eastern Cape	1550900	654004	2204904	44311	21800	66112	67230	***1118
Dutywa	86379	25810	112189	2468	860	3328	3170	-158
Libode	135294	40440	175734	3866	1348	5214	4462	-752
Lusikisiki	122844	36206	159050	3510	1207	4717	3790	-927
Mbizana	84159	24679	108838	2405	823	3227	2707	-520
Mthatha	113389	46179	159568	3240	1539	4779	4346	-433
Mzimkhulu	53534	18317	71851	1530	611	2140	1918	-222
Gauteng	1064806	676617	1741423	30423	22554	52977	60121	7144
Sedibeng West	65430	49972	115402	1869	1666	3535	3408	-127
KwaZulu-Natal	1720347	994784	2715131	49153	33159	82312	80979	-1333
Ilembe	110174	61499	171673	3148	2050	5198	5024	-174
Amajuba	77446	46778	124224	2213	1559	3772	3545	-227
Othukela	127384	72421	199805	3640	2414	6054	5731	-323
Umzinyathi	112455	51833	164288	3213	1728	4941	4759	-182
Kokstad	61800	32511	94311	1766	1084	2849	2754	-95
Port Shepstone	141148	80833	221981	4033	2694	6727	6707	-20
Empangeni	188304	103893	292197	5380	3463	8843	8390	-453
Obonjeni	152100	76098	228198	4346	2537	6882	6235	-647
Vryheid	189132	105966	295098	5404	3532	8936	8412	-524
Ukhahlamba	3473	3026	6499	99	101	200	187	-13
Limpopo	1154178	751290	1905468	32977	25043	58020	56160	-1860
Bohlabela	136912	89829	226741	3912	2994	6906	6534	-372
Capricorn	245394	163530	408924	7011	5451	12462	11964	-498
Greater Sekhukhune	182538	120622	303160	5215	4021	9236	9051	-185
Mopani	210971	131117	342088	6028	4371	10398	9795	-603
Vhembe	268153	179764	447917	7662	5992	13654	13337	-317
Mpumalanga	571819	341825	913644	16338	11394	27732	27701	-31

Province District	Learners			Educators				Surplus/ shortage
	Primary	Secondary	Total	Primary*	Secondary**	Need	Have	
Ehlanzeni	182882	109133	292015	5225	3638	8863	8607	-256
North West	528097	317163	845260	13202	9062	22264	27454	5190
Kagisano Molopo	18699	9706	28405	534	324	858	842	-16
Moshaweng	15458	5907	21365	442	197	639	593	-46
Greater Delareyville	18793	10247	29040	537	342	879	869	-10
Setlagnobi	21809	10742	32551	623	358	981	954	-27
Maquassi Hills	28599	15553	44152	817	518	1336	1320	-16

Source: Calculated from: DoE (2006a) *Education statistics in South Africa at a glance in 2005*.

Pretoria: Department of Education, Table 7, p.17, 20-21.

* L-E-R = 35:1

** L-E-R = 30:1

*** In spite of the fact that 6 districts in the Eastern Cape have collectively shown a shortage of 3 139 educators there were an overall surplus of 1 118 educators in 2005.

Notwithstanding the evidence above of sufficient educators numerically, the uneven distribution of educators across Provinces is cause for concern. This is a pattern in all professions across the Provinces. There is reluctance by all professionals, educators included, to go to the rural areas to work, and so professionals are concentrated in the urban areas. In education this imbalance is particularly felt in rural classrooms. The 2007 National Policy Framework for Teacher Education cites challenges in rural schools that were highlighted in *The Report of the Ministerial Committee on Rural Education of 2005* (RSA 2007:5):

[The Report] noted a shortage of qualified and competent teachers in these schools, problems of teaching in multi-grade and large classes, under-resourced school facilities, and limited access to professional development programmes for teachers.

Profiling practising educators

In determining the demand for teachers it is necessary to look at the profile of the practising teachers.

Gender

The 2005 gender distribution of educators showed that women dominated the profession with respect to numbers (Table 5). According to the DoE (2006a:21) there were 256 782 female educators in the ordinary school sector in 2005. Based on this figure, female educators constituted 67, 2 per cent of the 382 133 educators in the country. Gauteng recorded the lowest presence (27, 9 per cent) of male educators and Limpopo the highest at 44, 0 per cent. Although a trend world-wide, the growing dominance of female educators concerns the DoE (2005:42) because it is indicative of “an inadequate presence of male role models in the field of teaching”.

Table 5: Gender distribution in the ordinary school sector, by province in 2005

Province	Number of educators			Province	Distribution (%)		
	Female	Male	Total		Female	Male	Total
Eastern Cape	47621	19609	67230	Eastern Cape	70.8	29.2	100.0
Free State	14844	8556	23400	Free State	63.4	36.6	100.0
Gauteng	43354	16767	60121	Gauteng	72.1	27.9	100.0
KwaZulu-Natal	56645	24334	80979	KwaZulu-Natal	70.0	30.0	100.0
Limpopo	31471	24689	56160	Limpopo	56.0	44.0	100.0
Mpumalanga	18001	9700	27701	Mpumalanga	65.0	35.0	100.0
North West	18635	8819	27454	North West	67.9	32.1	100.0
Northern Cape	4317	2324	6641	Northern Cape	65.0	35.0	100.0
Western Cape	21894	10553	32447	Western Cape	67.5	32.5	100.0
National (Total)	256782	125351	382133	National (Total)	67.2	32.8	100.0

Source: Calculated from Table 7: DoE (2006a:20-21)

According to the DoE (2005:43), female educators accounted for “between 67 and 75 per cent” of educators at primary school level by province in 2004, but at secondary school level the gender distribution was almost equal. In spite of this, women are underrepresented in management positions especially in secondary schools. According to the DoE (2005:43), “pre-primary schools and primary schools are largely under the managerial responsibility of women.”

The DoE reports that attempts to attract male candidates into the teaching profession are failing (DoE 2005:43). If current supply trends persist, women will increasingly dominate the profession. According to SAQA (2007), half (51,3 per cent) of the education qualifications awarded in 1995 at NQF Level 6, 60,4 per cent of qualifications at NQF Level 7 and 48,3 per cent of qualifications at NQF Level 8 went to women. These rates increased substantially in 2004 (31,8 per cent at Level 6, 11,2 per cent at Level 7 and 11,3 per cent at Level 8). In 2004 83,1 per cent of the education qualifications awarded at NQF Level 6, 71,6 per cent of qualifications at NQF Level 7 and 59,6 per cent of qualifications at NQF Level 8 went to women.

Population groups

The representation of the population groups in the profession reflects the demographics of the country, whereby the Africans are in the majority..

Figure 2: Population group distribution in the ordinary school sector, in 2005

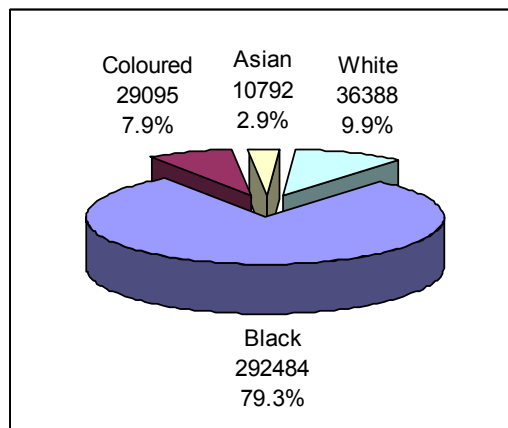


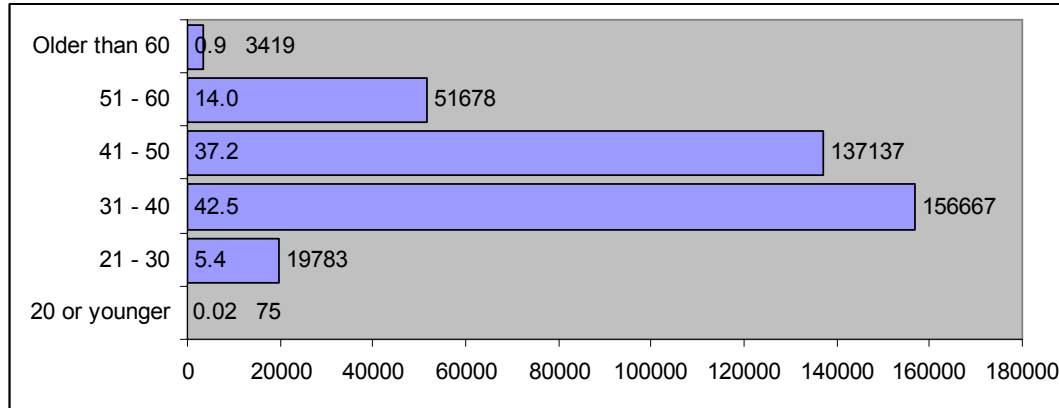
Figure 2 shows the number and proportion of educators within public ordinary schools by race. In terms of race, approximately 79, 3 per cent of all educators are black (=African), 7, 9 % per cent are coloured, 2, 9 per cent Indian and 9, 9 per cent white.

Source (Arends, 2007).

Age

According to the DoE (2005:45), only a fifth of 375 000 or “twenty-one per cent of all South African teachers were under the age of 40” in 2004. A recalculation of the number and distribution of educators by age group published in Figure 3 (DoE, 2005:45) shows that more than half (57,0 per cent) of the educators were 41 years or younger in 2004. According to Arends (2007) 47, 9 per cent of all educators were 40 years or younger in 2005 (Figure 3 below). A further 37, 2 per cent fell within the 41 to 50 year age group and 14, 0 per cent within the 51 to 60 year old age group.

Figure 3: Age distribution of educators in 2005



Source: Arends (DoE, 2007)

According to Stats SA, the mean age for all graduates in the field of Education and the mean age for practising educators was 41 in 2005 (Stats SA, 2006). This is not significantly older than the mean age of 38 for all employed people in 2005 who had obtained a certificate/diploma or higher qualification. The Stats SA figures also show that the mean age for unemployed graduates in the field of Education was 35 in 2005.

The mean age of teachers in South Africa is similar to the mean age of teachers elsewhere in the world: According to Bartlett (2006), the mean age for white teachers was 48 and for Latino teachers 41 in 2005–06 in the Tri-County Counties of Monterey, San Benito, and Santa Cruz. Williams (2002) reported that the average age among American teachers was 44 in 1995–96. According to the Committee for the Review of Teaching and Teacher Education the median age of the teaching population in Australia rose to 43 years in 2001 (44 per cent being older than 45 years) (Commonwealth of Australia, 2003).

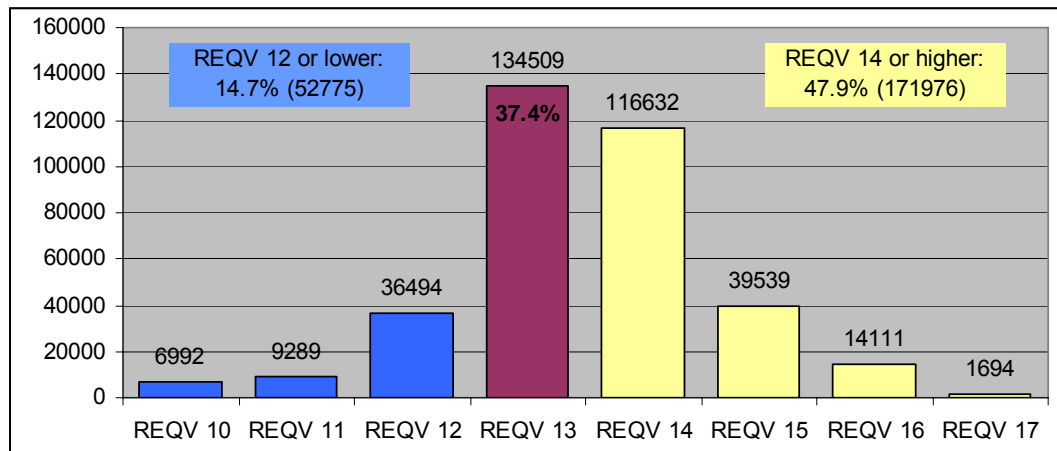
According to Crouch (cited by Arends, 2007), there are two reasons for the (very) small proportion of 21 to 30 year old practising educators: (1) more qualified and experienced educators tend to stay in the teaching profession and (2) the young, less qualified, leave the profession soon. A third reason may be that there is no “space” in the ordinary school system for new graduates forcing them to find employment elsewhere or to stay unemployed. The DoE (2005:13) confirms this possibility in saying that “newly trained educators have difficulty in finding posts (even in rural schools)”.

Qualification levels of practising educators

In terms of the *Norms and Standards for Educators*, published in 2000, educators who had obtained a three-year post-school qualification (REQV² 13 level) were regarded as adequately qualified (DoE, 2005:47). The 2007 National Policy Framework for Teacher Education, however, has set the minimum entry level for all new educators joining the teaching profession at REQV 14 level. The two recognised pathways are: 1) the four year professional Bachelor of Education degree and 2) a three year junior degree followed by a year-study of a post-graduate diploma (RSA 2007: 13-14). Less than half (47, 9 per cent or 171 976) of 359 260 educators had an REQV 14 qualification in 2004 (Figure 4, below). A further 37, 4 per cent (or 134 509 educators) had an REQV 13 level qualification. Only 14, 7 per cent (or 52 775 educators) could be regarded as under-qualified because they had an REQV 12 or lower qualification.

Although 14, 7% indicates a small percentage, it is still of concern that in 2004 more than 50,000 teachers were still under-qualified. It is not clear at this stage how much of a dent the National Professional Diploma in Education (for upgrading under-qualified teachers) has made, as the Programme is still continuing.

Figure 4: Distribution of educators by REQV level (October 2004)

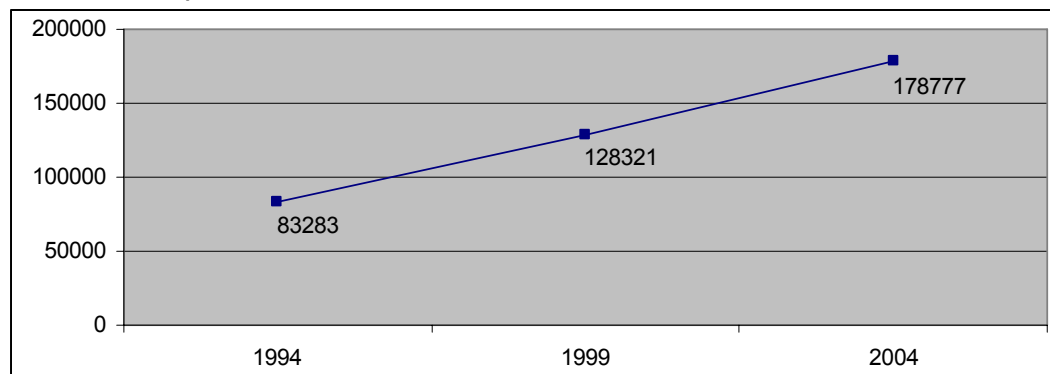


Source: Figure 3.7: Distribution of educators by REQV level (DoE, 2005:48)

Enrolments in the field of Education at universities suggest that South African educators are eager to better their qualifications. For example, of the 107 000 students enrolled in 2001, only 20 321 were enrolled as full-time students, the rest registered as part-time students (DoE, 2005: 14). Figure 5 below shows that the total number of graduates who achieved an REQV 14 or higher qualification in the field of Education more than doubled from 1994 to 2004 (SAQA, 2007). REQV 14 equivalent graduates increased from 83 283 in 1994 to 178 777 in 2004. This constitutes a total increase of 114, 7 per cent over a period of ten years.

² **Relative Education Qualification Value (REQV)** - The REQV is a relative value attached to an education qualification that is based primarily on the number of recognised prescribed full-time years of study. Matriculation value is REQV 10. All honours, masters and doctoral degrees have a REQV level of 15 and above. Higher diplomas and bachelors degrees have a REQV level of 14. All diplomas are at REQV level 13. Educators are considered to be unqualified or underqualified if they have a qualification resulting in level 10, 11 or 12, that is, less than three years after matric.

Figure 5: Growth in the number of REQV 14 equivalent Education graduates (1994, 1999, and 2004)



Source: SAQA, 2007

If we consider that the mean age for practising educators was 41 and that only 5, 4 per cent (or 19 783) of all practising educators were under the age of 30 in 2005 (Figure 3), it can be assumed that only the latter (5, 4% of educators) had been prepared in their teacher education, for Curriculum 2005 and its later revisions. The implication is that the majority of educators were not prepared for the new curriculum, and in many cases did not have the skills needed to interpret and implement a new curriculum.

Working conditions and salaries of teachers

Educators have remained among the lowest paid professionals. This was a major reason for the teachers' strike early in 2007 that almost crippled the schooling system, and in fact may have in some areas.

There is a very wide gap between salaries of educators and education managers even within schools, so that it pays to transfer to management from classroom teaching (hence large numbers of teachers enrolling for Education Management courses).

Private sector, industries and even political positions offer much much more attractive salaries and other benefits to MST, and Economics and other Commercial subjects' teachers.

Educators, in SA and elsewhere, do not have the status of professionals. "As professionals, teachers are expected to have the skills of a technician as well as (Mda 1993:37) 'possess the intellectual basis from which to bring interpretive, normative, and critical perspectives to bear on all educational phenomena'" (Wirsing in Mda 1993:37). Further:

'For the responsibility entrusted to them, professionals are usually rewarded with autonomy, money and recognition (Maeroff in Mda 1993:37). In reality, however, teachers occupy the role of "underlings" ... and "passive servants of society" ... and as a result "nobody reports

to the teacher, while the teacher reports to everyone else (Maeroff in Mda 1993:37).

While teachers may complain about not being recognised as professionals, teachers, at least in SA, are also accused of not being professional. In SA, the biggest grouping of teachers is more unionised than professional. This group is perceived to focus almost exclusively on what they call “bread and butter” issues, rather than the intellectual and critical engagement with education as a phenomenon, curriculum, and subject development.

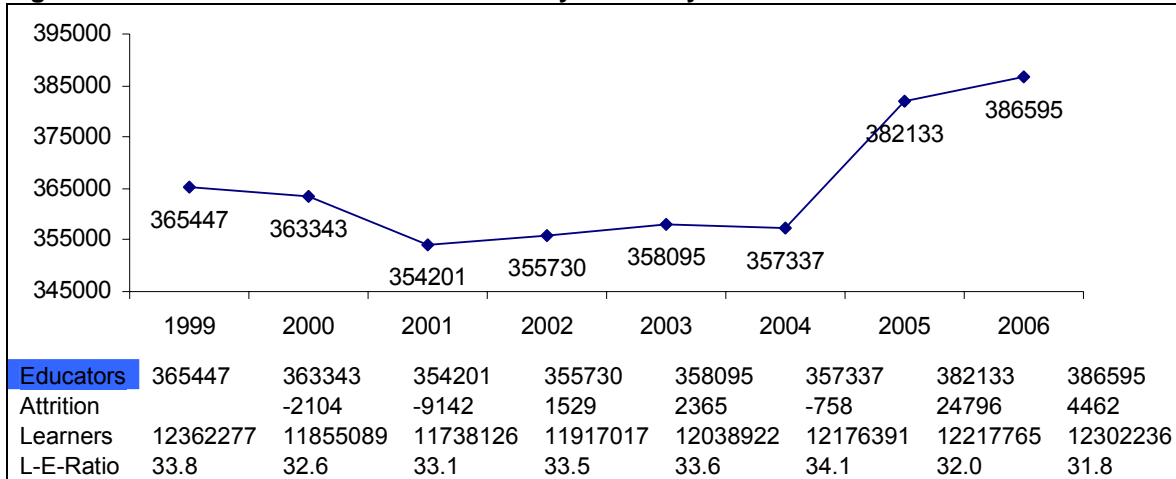
Another common working condition of many SA teachers is overcrowding of learners in classrooms. This is either a result of classroom shortage or shortage of teachers. Officially, an acceptable teacher-learner ratio in ordinary primary schools is 1:40, and 1:35 in ordinary secondary schools, but in reality some schools and districts have very high teacher to learner ratios. In Peltzer et al’s study (2005:20), educators reported class size averages of 45, 48 and 52 in their classrooms, for the years 2001, 2002 and 2003.

Losses (and gains): is there / will there be a shortage?

According to the DoE (2005:54), the teacher attrition rate is currently estimated at between 5 and 5.5 per cent nationally, which in absolute terms translates to between 17 000 and 20 000 teachers lost to the system each year. While it cannot be denied that many teachers will leave the profession if a better career opportunity comes along, it does seem as if there is currently a large enough pool of educators to fill in for those who leave. There was a decline in the number of educators in the ordinary school system between 1999 and 2001 (a total of 11 246). The number of educators increased by 3 894 over the next two years, with a slight dip (-758) between 2003 and 2004 (Figure 6). Over five years there was a total loss of 8 110 educators.

The upsurge between 2004 and 2005 can be ascribed to the fact that in the SNAP Survey reports in 2005, schools included all SGB-paid educators at public schools. It is unclear how many of the 24 796 additional educators in 2005 and of the added 4 462 in 2006 were SGB-paid educators.

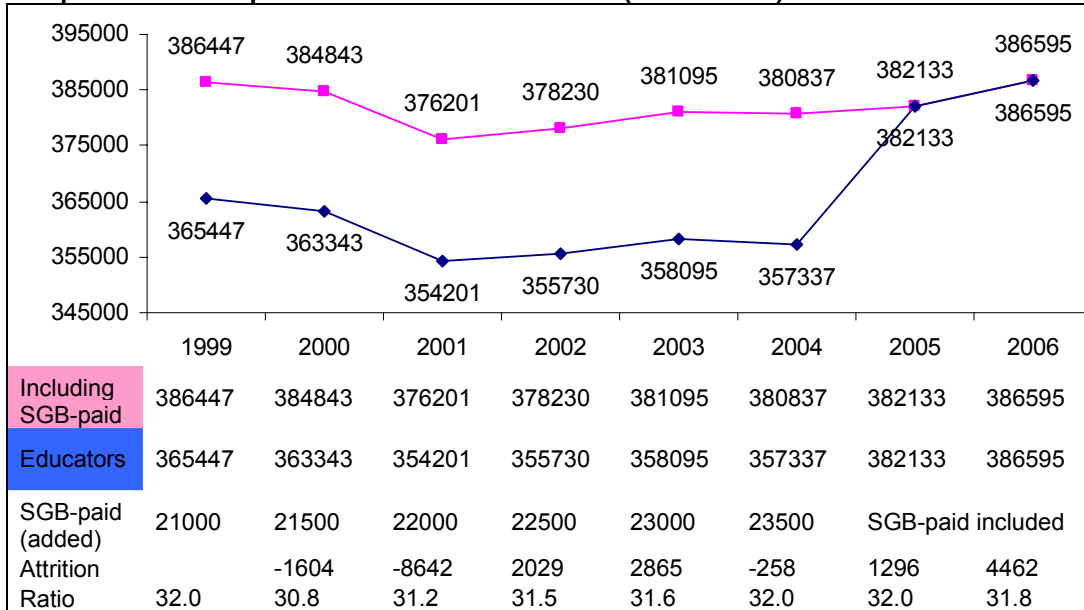
Figure 6: Number of educators in the ordinary school system from 1999 - 2006



Source: Figures for 1999 – 2005 were calculated from *Education in South Africa: A global picture* published annually as “centerfold” in DoE’s Education statistics in South Africa at a glance. 2006 figures were taken from *2006 School realities*.

Important to note is that the steep increase in the number of educators cannot be attributed to a large number of new educators who suddenly joined the profession in 2005. The point is, they were in the system as part of a relative stable pool of educators, but they were not reported in the previous years (Figure 7). If it is assumed that around 21 000 SGB-paid educators could have been added each year since 1999 then there was no significant difference between the number of practitioners in 1999 and the number of practitioners in 2006.

Figure 7: Number of educators in the ordinary school system from 1999 – 2006: a comparison if SGB-paid educators were included (1999 – 2004)



Source: Figures for 1999 – 2005 were calculated from *Education in South Africa: A global picture* published annually as “centerfold” in DoE’s Education statistics in South Africa at a glance. 2006 figures were taken from *2006 School realities*.

“SGB-paid (added)” figures are based purely on assumption.

The HSRC has been quoted by researchers and in the media as saying that there “will be a shortage of 34 000 teachers in 2008”. This figure was published in 2005 in a report entitled *Educator supply and demand in South African public schools* (Peltzer, Shisana, Udjo, Wilson, Rehle, Connoly, Zuma, Letlape, Louw, Simbayi, Zungu-Dirwayi, Ramlagan, Magome, Hall, & Phurutse, 2005) and needs to be contextualised. Calculations were made from data for state-paid educators up to 2003, which excluded SGB-paid and private school educators. Provision had to be made for year-on-year declines in the number of educators in the late 1990s till 2001. There were around 8 000 fewer educators in 2003 than in 1999 (although increments occurred in 2002 and in 2003). Therefore Peltzer, et al. (2005) had to base their projections on a low-growth scenario.

In the section above, based mainly on DoE supplied figures, it was reported that there were more than 280 000 practising educators and a possible 12 000 surplus educators in the ordinary school system in 2006. According to Stats SA (2006) figures, there were an estimated 524 159 employed graduates in the field of Education, and a further 23 021 unemployed graduates in the field of Education in 2005 in the country. Furthermore, by the end of March 2006, a total of 482 665 educators were registered on the South African Council for Educators’ (SACE) database (SACE, 2007:5). While we concede that the database of educators includes those who are not currently teaching, still, if it is considered that there were 386 595 educators in the ordinary school system in 2006, then (in terms of supply) there were an additional 96 070 eligible educators to practise their skills available to the country. Based on the figures supplied by these studies and databases it is doubtful that there will be a shortage (in numbers) of educators in 2008 or in the near future. This assumption corroborates the DoE’s (2005:35) statement that “it would be reasonable to assert that there will be no shortage of teachers in South Africa, either in the short term or at any stage of target period for the achievement of EFA (education for all), that is, until 2015”.

While data point to the fact that there is no shortage of teachers, there are however challenges in terms of the supply of teachers available. The challenges include a reported mismatch between demand and supply of teachers. These are some of the challenges:

- There are few qualified teachers in MST subjects.
- There are more Humanities and Social Science teachers than MST teachers, which results in a great demand for the latter teachers, while there is an over-supply of the former.
- More teachers prefer urban areas to rural areas.
- Most teachers in the classrooms were trained for the previous dispensation classrooms (apartheid education, the discredited and discarded curricula, and homogeneous classrooms). It will take time before the new cadres of teachers, who are supposedly well-trained, and prepared for today’s classrooms, make an impact in the classrooms, and to positively change the education system.
- The teaching profession is an ageing profession.
- The number of teachers who leave the profession is not matched by the number of incoming teachers (just qualified and immigrants) – the scale heavier on the side of the former.

- Urban schools do not experience shortage of qualified and skilled teachers as rural areas do.
- Former white schools do not experience a shortage of qualified and skilled teachers as black schools do.
- Fewer black students register at university to do teacher education than white students. This leads to the black race, and therefore, black schools and black areas having a shortage of qualified and specialised teachers.
- The bursary scheme, “Fundza Lushaka” introduced at the end of 2006 for 2007, offering bursaries to students who want to register for teacher education at university, did not attract as many students as needed.
- The biggest chunk of the SA Government budget goes towards education, especially salaries of educators, with very little returns.

Migration

The approximate number of qualified teachers, within the working age range, who are not working as educators, is 41, 4% (Table 6). In reviewed literature it is argued that the pattern of younger teachers leaving teaching after a few years is a common practice, as the young teachers tend to test their own interest-levels, while older teachers would have been in the system for a long time. According to Crouch & Perry (2003:489) “the peaks for leaving [the teaching profession] are 59 and 23.” The first age group (59) leaves to retire, while the second age group (23) may have joined the profession “while awaiting better prospects” (Crouch & Perry 2003:489).

While there are no reliable figures from the DoE, the greatest employer of teachers, on how many teachers have left or have been leaving the SA education system for foreign countries, the reports from research (Appleton et al. 2006; de Villiers 2007; de Villiers & Degazon-Johnson 2007; Manik 2007; Morgan 2006), from teachers who have remained behind, education managers, School Governing Bodies (SGBs), and their communities, suggest that qualified educators have been steadily migrating to other countries, with, sometimes, devastating effects on the classrooms they leave behind.

Apparently there is aggressive recruitment of SA teachers and other Commonwealth countries by foreign governments, especially the UK, which has resulted in emigration of qualified SA teachers, reported in studies such as de Villiers 2007; de Villiers & Degazon-Johnson 2007; Manik 2007; and Morgan 2006). These teachers are usually first language English speakers, a majority of whom are white, and therefore teachers who would be able to fit in in English schools. According to Manik (2007:63), the two categories of migrant teachers, are “experienced” teachers and “novice” teachers. In Manik’s study, most experienced migrant teachers were married, female, Indian teachers, and the majority of the novice teachers were unmarried, white, female teachers. Both groups were either English first language speakers, or spoke English very well. The majority of African teachers would not meet that basic criterion. The result of this emigration, therefore, is that the highly competent teachers, who have left, have come mainly from the pool of white teachers, and from the Indian group, often in well-equipped and well-staffed public schools. Emigration of teachers to other countries has not been a factor in the Africans’ schools. One has to look at other areas for the cause of teacher attrition in these schools. Evidently, in SA, even mobility, a common labour market factor anywhere in the world, is racially-linked.

More research into the area of migration of South African teachers is needed.

Supply of skills to the teaching profession

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 (Government of New Brunswick (GNB) 1998; Learning and Skills Council (LSC) 2005). Future skills supply can be determined through an investigation into the current participation in education and training, especially amongst the young (LSC, 2005).

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 field. The total number of people who have obtained a qualification in a particular field or profession can be derived from data collected by Statistics South Africa through its Labour Force Survey conducted during the first and the second half of each year since 2000. Labour Force Survey (LFS) data can be analysed in terms of race, gender, age, level of qualification, field of study, geographical distribution and economic status (not economically active, employed or unemployed). If a person is employed, the current occupation and sector of employment can be identified. Unemployed people with qualifications relevant to the profession under review may point to an over supply of skills or to a mismatch in the provision of skills.

Another source of information on availability of people with qualifications is the South African Qualifications Authority (SAQA)'s National Learners' Records Database (NLRD), which contains historical information on the achievement of learners at universities. Sometimes membership in a professional body is required for one to be legally able to practise the profession. Registration at the South African Council for Educators (SACE) is mandatory for people who want to practise Education in South Africa. Data contained in SACE's register can be analysed to profile the pool of people who are legally permitted to practise the profession in terms of race, gender, age, qualification and other variables. However, not all graduates register at an inimitable professional body as they are entitled to, especially if they do not practise the profession for which they have to register.

A further important indicator of current skills supply is the extent to which employers engage in training (LSC) 2005). If the training is designed to be applicable and provided effectively, then it can be expected to increase the level of productivity of trained workers. However, in-service training cannot in all cases compensate for the deficiencies in the attainment levels of those leaving full-time education.

Data on the future supply of qualified workers can be derived from current trends in the growth or decline of the number of students that enroll or graduate in a particular field of study. In South Africa, information on graduates is available from the DoE and from the South African Qualifications Authority (SAQA). Each higher education institution in South Africa reports to the DoE about student enrolments and qualifications as the basis to make allocations for financial support. The data are captured in the Higher Education Management and Information System (HEMIS) which allows for the calculation of the total number of students who have enrolled in a particular year and the number who graduate in the same year. The South African

Qualifications Authority (SAQA) developed the National Learners' Records Database. The database is used to capture and store information on unit standards and qualifications registered on the National Qualifications Framework (NQF), as well as the educational achievements of learners in terms of these unit standards and qualifications. In March 2007, SAQA published its second report on the analysis of the national learners' records database entitled: *Trends in Public Higher Education in South Africa 1995 to 2004*. Both publications focus on the achievements of learners in the Public Higher Education System (SAQA, 2007: Introduction).

The following sections provide an analysis of the current supply of skills in the field of Education, the availability of graduates in the field of Education, in-service teacher training and graduation and enrollment trends of students in the field of Education.

Current supply of skills

According to the authors of the Skills in England 2004 Volume 2 research report, "the most direct evidence on the supply of skills can be obtained from examining the supply of skills in the workforce (those currently in employment or seeking employment), and how these differ by employment status, age, gender, population group, and occupation" (LSC, 2005:116). The United States (US) Department of Labour goes a step further and includes people who are not economically active (those who are neither working nor actively looking for work) in the "pool of available workers" (USDOL, 2000:1).

One source of data on the supply of skills is the Labour Force Survey (LFS), a biannual household survey conducted by Stat SA. The LFS is designed to measure various aspects of the labour market. In the following section a statistical overview is provided of data collected during the September 2005 LFS. Stats SA inter alia collects information on the highest level of education that members of households have completed and the field of study in which the highest certificate, diploma or degree was obtained. The field of study was used as the unit of analyses for the supply of skills. The data were analysed using the statistical package for the social sciences (SPSS). The study population was confined to include all people of working age (15 – 65 years old). Notably, people who have obtained a certificate, diploma or degree are older than 18 years.

Table 6 shows that there were nearly 30 million people of working age in SA, in 2005. The pool of available workers with a certificate, diploma or degree in SA stood at 2, 6 million people, constituting 8, 7 per cent of the potential labour force in the country. (Hereafter the term "graduates" will be used to refer to all people who have obtained a certificate, diploma or degree.) Nearly a quarter of all graduates have obtained their highest qualification in the field of Education. This means that there was a pool of 610 260 people, between 18 – 65 years old, in SA, with a certificate, diploma or degree in the field of Education.

Table 6: The potential labour force, all graduates and graduates in the field of Education (2005)

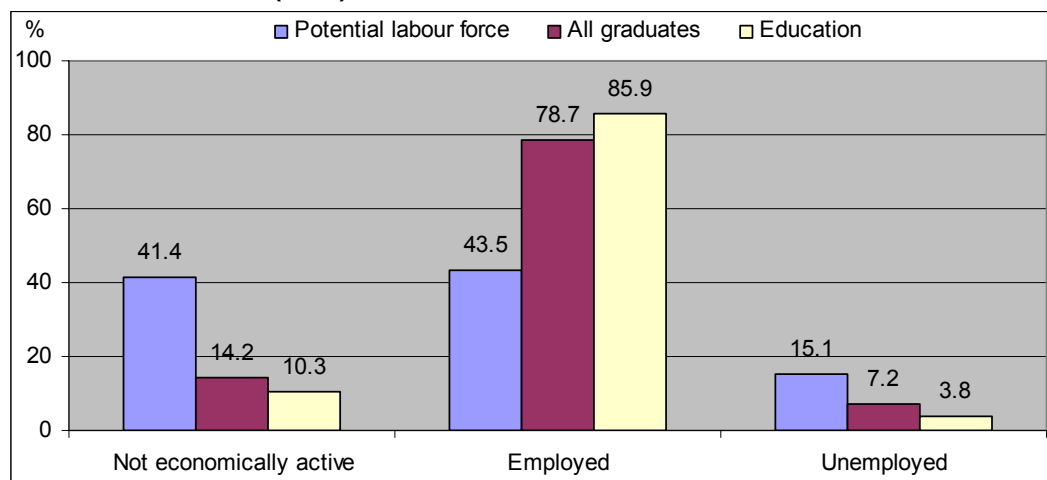
	Total	Employed	Unemployed	Not economically active
Potential labour force	29697000	12301000	4487000	12909000
All graduates	2569332	2020897	183871	364564
Education	610262	524159	23021	63082

Source: Total work force: Table B (Stats SA, 2006: ii), All graduates and Education: Calculated from LFS 2005 SPSS database.

Figure 8 shows the economic status of the potential labour force, all graduates and graduates in the field of Education respectively for 2005. Nearly half (41, 4 per cent) of the potential labour force was not economically active in 2005, a further 43, 5 per cent was employed and 15, 1 per cent was actively looking for a job. The economic status of graduates clearly indicates the need for qualified workers in the economy: only 4, 2 per cent of all graduates were not economically active (as opposed to 41, 4 per cent of the potential labour force). More than three-quarters (78, 7 per cent) of all graduates were employed. A total of 183 871 (7, 2 per cent) of all graduates were work seekers in 2005. Although one may not expect unemployment among graduates at a time of skills shortages, an unemployment rate of 8, 3 per cent among graduates is considerably lower if compared with an average unemployment rate of 26, 7 per cent in the country.

If graduate workers are in high demand then graduates in the field of Education either are in greater demand or they are scarce. By far the majority (85, 9 per cent) of all Education graduates were employed in 2005. Only a tenth (10, 3 per cent) were not economically active and a mere 3, 8 per cent were actively looking for a job. The unemployment rate for graduates in the field of Education was at 4, 2 per cent, which was half the unemployment rate of 8, 3 per cent of all graduates.

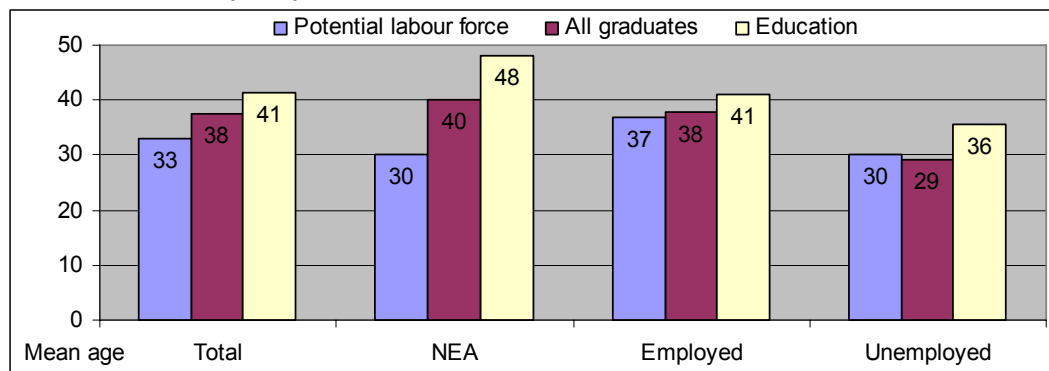
Figure 8: Economic status of the potential labour force, all graduates and graduates in the field of Education (2005)



Source: Total work force: Table B (Stats SA, 2006: ii), All graduates and Education: Calculated from LFS 2005 SPSS database.

If it is considered that 524 159 of the 610 262 Education graduates were employed, then there were 86 103 people left in the “pool of available Education graduates” that could have been recruited for employment if there was a crisis in 2005. The mean age for the 63 082 not economically active Education graduates was at 48 - higher (older) than the mean age (40) of all not economically active graduates and significantly higher than the mean age (30) of the potential labour force (Figure 9). It is therefore doubtful if the older Education graduates will be interested in employment, especially if it means they have to be re-skilled (i.e. in new curricula and new classroom realities).

Figure 9: Mean age for the potential labour force, all graduates and graduates in the field of Education (2005)



Source: Calculated from LFS 2005 SPSS database.

The figures above imply that the country had a total of 23 021 graduates in the field of Education who were actively looking for a job and who could have been employed if there was a dismal shortage of educators in 2005. The mean age for unemployed Education graduates was at 36, significantly higher than the mean age (29) of all graduates, and the mean age (30) of all unemployed people. Notably the mean age for Education graduates was at 41 somewhat higher than the mean age for 38 of all graduates. What the databases don't reveal about the unemployed Education graduates is what subjects they were offering, for which school level they were qualified to teach, and the geographical areas in which they were seeking employment.

If we regard only those graduates that are economically active or participating in the labour force (i.e. all those who are either working or looking for work) as the supply of labour, then there were 547 180 graduates in the field of Education of whom 524 158 were employed and 23 021 were unemployed. The gender distribution among Education graduates clearly illustrates the dominance of women in the field. More than half of all employed people and of all graduates were men, while only 37,9 per cent of all Education graduates were male and 62,0 per cent were female in 2005 (Table 7). The population group distribution of employed Education graduates reflected the population group distribution of all people who were employed in 2005. The gender and race distribution of the unemployed in 2005 confirmed the vulnerability of female and African workers. Note that around a tenth of all graduates were white, as apposed to only 2, 4 per cent of all unemployed people.

Table 7: Race and gender distribution of all economically active people, all economically active graduates and economically active graduates in the field of Education (2005)

	Total	Employed		Total	Unemployed	
		All graduates	Education graduates		All graduates	Education graduates
Total	12301000	2020897	524159	4487000	183871	23021
Gender						
Male	57.3	52.1	37.9	45.8	39.0	31.1
Female	42.6	47.9	62.0	54.1	60.8	68.9
Unspecified	0.0	0.0	0.1	0.1	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Race						
African	69.1	48.6	70.2	87.1	84.3	86.0
Coloured	10.8	6.4	6.8	8.6	1.9	0.3
Indian	3.6	4.5	2.2	1.8	2.9	1.9
White	16.2	40.1	20.7	2.4	10.0	11.8
Unspecified	0.3	0.4	0.0	0.1	0.9	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source:

Total economically active people: Table B (Stats SA, 2006: ii)

All graduates and Education graduates: Calculated from LFS 2005 SPSS database.

Graduates in education

The section above gave a comparative overview of the supply of skills in terms of all economically active people, all economically active graduates and all graduates in the field of Education. We now focus on the supply of skills in the field of Education. This section will outline the employment status, mean age, gender, population group, and occupation of all graduates in the field of Education, using the highest level of education as the unit of analysis.

Statistics South Africa classify the highest level of education for which data on the field of study are collected in the following categories: (1) Diploma/certificate with less than Grade 12/Std 10; (2) Diploma with less than Grade 12/Std 10; (3) Certificate with Grade 12/Std 10; (4) Diploma with Grade 12/Std 10; (5) Bachelors Degree; (6) Bachelors Degree and Diploma, (7) Honours Degree; and (8) Higher Degrees (Master's, Doctorate). For the purposes of this study, the eight categories were clustered to form the following four categories: (1) Certificate/diploma with less than Grade 12/Std 10; (2) Certificate/Diploma with Grade 12/Std 10; (3) Bachelor's Degree, or a Bachelor's Degree and Diploma or an Honours Degree; and (4) Higher Degrees (Masters, Doctorate).

Table 23 in Appendix A provides the employment status, mean age, gender, population group, and occupation of all graduates in the field of Education across the four reclassified categories for the highest level of education awarded. There were 610 261 graduates that obtained their highest qualification in the field of Education in 2005. Row 1 in Table 23 shows that only a third of all graduates were awarded a degree or higher qualification in the field of Education. Six per cent had a Certificate/diploma with less than Grade 12/Std 10, more than half (59, 2 per cent) obtained a Certificate/Diploma with Grade 12/Std 10, nearly a third (32, 1 per cent) had a Bachelors Degree, or a Bachelors Degree and Diploma or an Honours Degree in the field of Education and 2, 0 per cent achieved a Higher Degree (Masters, Doctorate).

An analysis of Education graduates in the respective qualification categories in terms of their employment status, mean age, gender, population group, and occupation shows the following important points:

- The labour force participation rate increases in relation to the level of the qualification awarded (Row 5 in Table 23). Eighty-four per cent of those with a Certificate/diploma with less than Grade 12/Std 10 in the field of Education were economically active in 2005, while almost all (98, 1 percent) of Higher Degree (Masters, Doctorate) graduates were economically active.
- The mean age increases in relation to the level of the qualification awarded (Row 7 in Table 23). The mean age for graduates with a Higher Degree (Masters, Doctorate) in the field of Education was 48 in 2005.
- Females dominate in all qualification levels, but especially among Education graduates with a Certificate/Diploma with Grade 12/Std 10 and Education graduates with a Bachelors Degree, or a Bachelors Degree and Diploma or an Honours Degree (Row 10 in Table 23).
- The dominance of African graduates and the share of coloured and Indian graduates decline as the level of qualification increases (Rows 12-15 in Table 23). Inversely the share of white graduates increases as the level of qualification increases (Row 16).
- Similar trends (to the above mentioned) can be observed for economically active (Rows 28-38) and employed graduates (Rows 39-49) due to the fact that they represent the majority of all graduates who have obtained their highest qualification in the field of Education.
- The mean age for Education graduates who are not economically active is higher than the mean age for all graduates who obtained their highest qualification in the field of Education (Row 18).
- The mean age for unemployed Education graduates is lower than the mean age for employed graduates (Row 51).
- The unemployment rate for lower qualified Education graduates is higher than the unemployment rate for graduates with higher qualifications in the field of Education (Row 61).
- Female, African and Indian graduates who have obtained a Certificate/diploma with less than Grade 12/Std 10 in Education are adversely affected by unemployment (Rows 62-67).
- There is no significant difference between the unemployment rate for male and for female graduates who have obtained a Certificate/Diploma with Grade 12/Std 10 or who had a Bachelors Degree, or a Bachelors Degree and Diploma or an Honours Degree in the field of Education.
- Africans have the highest unemployment rate among graduates with a Certificate/Diploma with Grade 12/Std 10 in the field of Education.
- African and white Education graduates with a Bachelors Degree, or a Bachelors Degree and Diploma or an Honours Degree are more likely to be affected by unemployment.
- A disparity in the trend of exceptionally low unemployment rates among Education graduates is observed in the unemployment rates for graduates with a Higher Degree (Masters, Doctorate) in the field of Education: seemingly only white females in this category are experiencing difficulty to find a job (Row 92).

According to an analysis of the Stats SA's September 2005 LFS data, there were 524 159 employed people who had obtained their highest qualification in the field of Education. An analysis of employed Education graduates in the respective qualification categories in terms of their occupation, mean age, gender and population group, shows the following important trends:

- There is a close correlation between the occupational distribution of employed graduates and the level of the qualification obtained in the field of Education (Rows 68-77 in Table X in Appendix A). Graduates with a Degree or higher qualification are more likely to be employed in highly skilled occupations such as Legislators and Professionals. Graduates with lower qualification levels are more likely to be employed as Technical and associate professionals and as Clerks and Service workers and shop and market sales workers.
- Only a quarter of all Education graduates are not employed in an education related occupation (Row 78).
- Three-quarters of all Education graduates are employed in an education related occupation. Only 3, 1 per cent is employed in education related occupations (other than school educators) (Row 80), while 72, 8 percent of all Education graduates are working as education professionals or as associate education professionals in schools (Row 82).
- The mean age for all educators is somewhat lower than the mean age for other education related occupations and the mean age for those Education graduates that are not employed in an Education related occupation (Row 79, Row 81 and Row 83).
- The type of occupation and mean age figure differ across the respective qualification categories:
 - A larger share (40, 0 per cent) of Education graduates with a Certificate/diploma with less than Grade 12/Std 10 is working outside the field of Education. The mean age for this group of Education graduates is lower than the mean age for school educators. They either were not appointed as teachers at the time of graduation, due to saturation in the labour market for teachers, or they were not regarded as adequately qualified in terms of the *Norms and Standards for Educators*, published in 2000.
 - A larger share (39, 5 per cent) of Education graduates with a Higher Degree (Masters, Doctorate) is working outside the field of Education. A further 18, 6 per cent of Education graduates with a Higher Degree (Masters, Doctorate) are employed in Education related occupations (i.e. Post-secondary education professionals, Inspectors, Education advisors). The mean age for this group is higher than the mean age for school educators.
 - Two-thirds (66,9 per cent) of all employed graduates with a Bachelor's Degree, or a Bachelor's Degree and Diploma or an Honours Degree are employed as school educators (as opposed to 79,0 per cent of employed graduates who have obtained a Certificate/Diploma with Grade 12/Std 10).

An analysis of the gender and population group distribution of school educators according to data captured in the September 2005 LFS confirms the trends reported in the section on the current demand for educators in the ordinary school system (based on SNAP Survey data collected by the DoE in 2005 and the analysis of 2005 PERSAL data by Arends (2007) and Arends & Chisholm (in press)). In summary:

- Two-thirds of all school educators are female. The only deviation from this trend is among Education graduates with a Higher Degree (Masters, Doctorate) where females accounted for 54, 2 per cent of school educators and males for 45, 8 per cent (Rows 96-97 in Table 23 of Appendix A).
- Africans accounted for 74, 1 per cent of all school educators, coloureds for 8, 0 per cent, Indians constituted 2, 3 per cent and whites for 15, 5 per cent (Rows 102-105). The population group distribution differs significantly across the four broad qualification categories:
- Africans accounted for 82,9 per cent of all school educators with a Certificate/diploma with less than Grade 12/Std 10 qualification, followed by Indians (8,1 per cent), whites (5,4 per cent) and coloureds (3,7 per cent).
- Three-quarters of all school educators with a Certificate/Diploma with Grade 12/Std 10 qualification were African, a tenth each were coloured and white respectively and 2,7 per cent were Indian.
- Africans accounted for 67,2 per cent of all school educators with a Bachelor's Degree, or a Bachelors Degree and Diploma or an Honours Degree, followed by whites (28,3 per cent), coloureds (3,8 per cent) and Indians (0,8 per cent).
- By far the majority (92, 9 per cent) of school educators with a Higher Degree (Masters, Doctorate) was African, 6, 0 per cent was coloured and 1, 1 per cent white.

The dominance of Africans at almost every qualification level (highest and lowest) can be attributed to SA demographics whereby Africans form 79, 6% of SA's total population.

Availability of skills

The National Learners' Records Database (NLRD) was established in 1997 and information on unit standards and qualifications has been captured since 2000 (SAQA, 2007). It has to be noted that the NLRD database contains historical information on the achievement of learners at universities, which had previously been stored by the Human Sciences Research Council (HSRC) in the Register of Graduates. The HSRC maintained the Register of Graduates from 1965 to 2001 when it was handed over to SAQA for incorporation into the NLRD.

SAQA (2007) describes *availability* as the "number of individuals with qualifications in a particular field". A person with a first degree, an honours degree, a master's degree and a doctorate in the same field of study was counted only once in that field of study. A person who had attained qualifications in more than one field of study was counted in all the fields, for example a person with a first degree in civil engineering and a master's degree in business administration would be counted in the fields civil engineering and commerce, business management and business administration. The person would furthermore be counted against his/her highest qualification in that particular field of study.

The number of Education graduates has more than doubled over ten years (Table 8). In 1994 there were 85 220 graduates in the field of Education. By 2004 there was a total of 184 827 graduates captured on the NLRD who had achieved an NQF Level 6–8 qualification in the field of Education.

Table 8: Availability of graduates in the Field of Education (1994, 1999, 2004)

NQF	1994	1999	2004	NQF	1994	1999	2004
Level 6	1937	4839	6051	Level 6	2.3	3.6	3.3
Level 7	78525	121018	169138	Level 7	92.1	90.9	91.5
Level 8	4758	7302	9638	Level 8	5.6	5.5	5.2
Total	85220	133159	184827	Total	100.0	100.0	100.0

Level 6 consists of national diplomas and three-year first degrees.

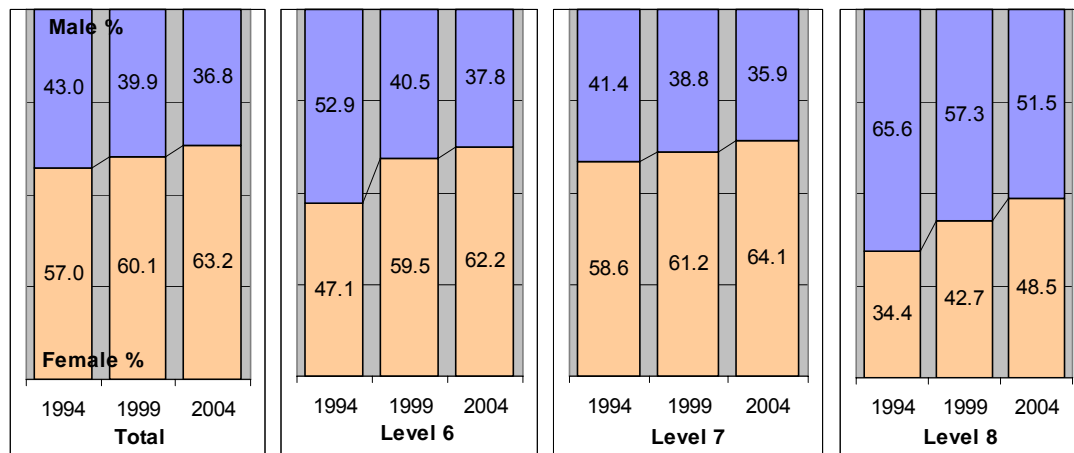
Level 7 contains all higher diplomas, post-graduate diplomas, four-year degrees (including B Tech degrees) and honours degrees.

Level 8 includes master's degrees and diplomas, laureates diplomas and doctoral degrees.

Source: SAQA (2007)

Female educators have increased their dominance in the profession. In 1994, more than half (57, 0 per cent) of all the graduates who had obtained a university qualification in Education were women, and by 2004 women formed nearly two-thirds (63, 2 per cent) of all the university graduates in education (Figure 10). The increase took place in each of the NQF Levels (Level 6: 62, 2 per cent - up from 47, 1 per cent; Level 7: 64, 1 per cent - up from 58, 6 per cent and Level 8: 48, 5 per cent - up from 34, 4 per cent).

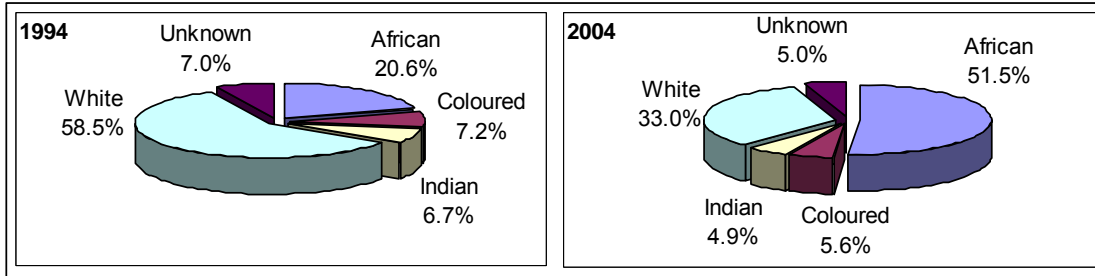
Figure 10: Gender distribution of Education graduates at NQF Levels 6–8 (1994, 1999 and 2004)



Source: Calculated from SAQA (2007).

Africans accounted for more than half (51, 5 per cent) of all Education graduates in 2004 (up from 20, 6 per cent in 1994), coloureds constituted 5, 6 per cent and Indians represented 4, 9 per cent of all Education graduates in 2004 (Figure 11). The share of White graduates in the field of Education declined from 58, 5 per cent in 1994 to 33, and 0 per cent 2005.

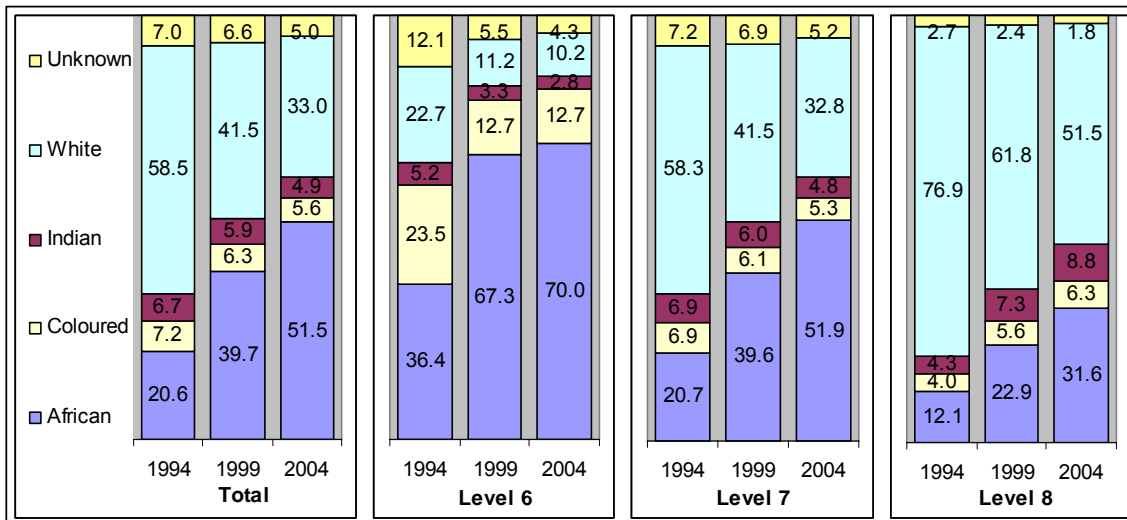
Figure 11: Population group distribution of Education graduates at NQF Levels 6–8 (1994 vs 2004)



Source: Calculated from SAQA (2007).

In 2004, black (African/coloured/Indian) graduates had the largest share of the qualifications awarded in the field of Education: 89,4 per cent of all graduates at NQF Level 6, 65,4 per cent of all graduates at NQF Level 7 and 47,5 per cent of all graduates at NQF Level 8 (SAQA, 2007) (Figure 12). The total number of black graduates who achieved their highest qualification (Level 6–8) in the field of Education quadrupled since 1994 (up from 29 353 to 114 579 in 2004). The growth among black graduates can be subscribed to substantial growth in the number of African graduates. It was mentioned earlier that some growth occurred among coloured graduates (at a compound annual growth rate of 3, 4 per cent), while there was a decline in the number of Indian graduates (at a compound annual decline of - 1, 5 per cent).

Figure 12: Population group distribution of Education graduates at NQF Levels 6–8 (1994, 1999 and 2004)



Source: Calculated from SAQA (2007)

It was shown in **Error! Reference source not found.s** 11 and 12 that African female graduates recently have expanded their share (51, 7 per cent) of qualifications conferred between 1995 and 2004. In terms of availability, African females accounted for nearly a third (32, 4 per cent) of all graduates in the field of Education (Table 9). Over the ten years till 2004, African males represented around a quarter of all graduates, but in terms of availability African males accounted for a fifth of the

available Education graduates in 2004. White females and white males, on the other hand, accounted for 13, 8 per cent and 3, 0 per cent respectively of graduates who obtained their qualifications in 2004. In terms of availability, white female graduates accounted for 23, 8 per cent and white males for 8, 9 per cent of all graduates in the field of Education in 2004. This anomaly corroborates the fact that African people had limited access to higher education in the past.

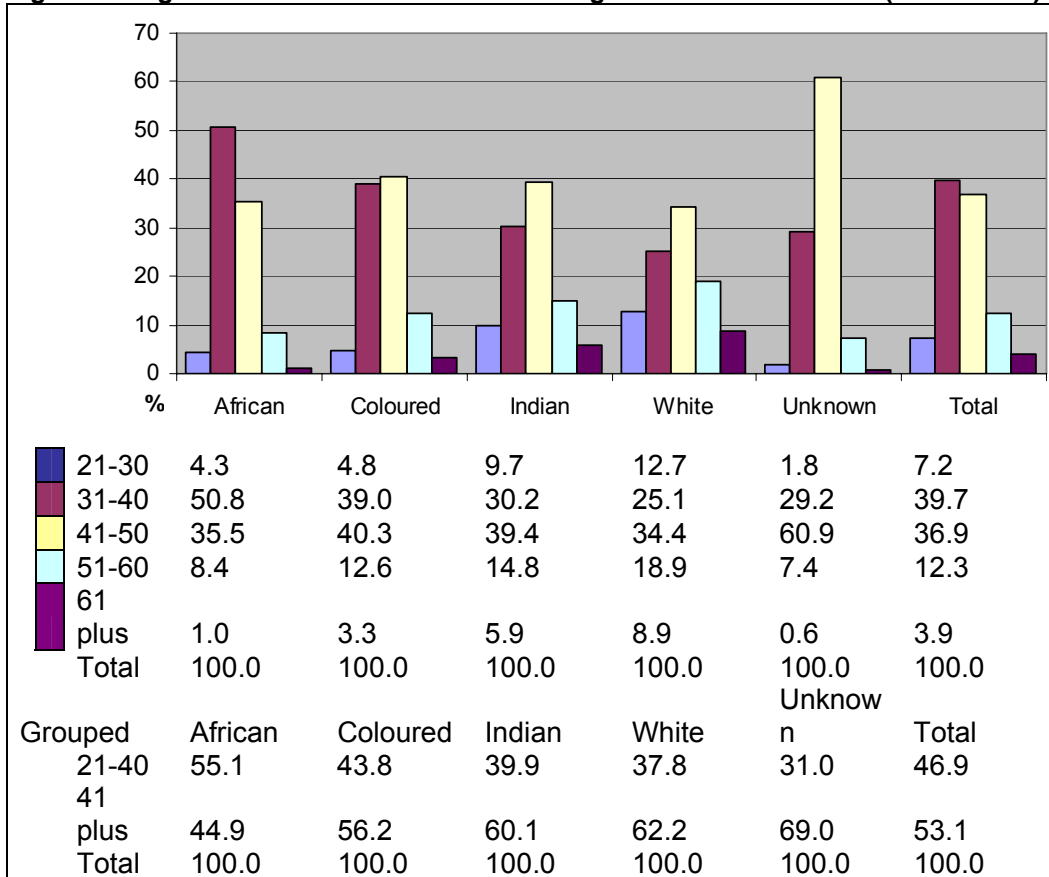
Table 9: Availability of NQF Level 7 Education graduates by population group and gender (2004)

Population group	Number	Distribution	Gender	Number	Distribution
African	86748	52.2	African Female	53908	32.4
			African Male	32840	19.8
Coloured	8412	5.1	Coloured Female	4070	2.4
			Coloured Male	4342	2.6
Indian	7838	4.7	Indian Female	4833	2.9
			Indian Male	3005	1.8
White	54418	32.7	White Female	39625	23.8
			White Male	14793	8.9
Unknown	8780	5.3	Unknown Female	4900	2.9
			Unknown Male	3880	2.3
Total	166196	100.0	Total	166196	100.0

Source: Calculated from SAQA (2007)

Figure 13 shows the age distribution among available graduates with an NQF Level 7 qualification in the field of Education on SAQA's NLRD. More than half (53, 1 per cent) of the 166 196 graduates were older than 40 years. Those who were 30 years and younger accounted for only 7, 2 per cent of all available graduates in 2004. Although African graduates showed a younger age profile and white graduates an older age profile, the bulk (70 – 80 per cent) of Education graduates across all race groups was between 31 and 50 years old.

Figure 13: Age distribution of available Level 7 graduates in Education (SAQA 2004)



Source: Calculated from SAQA (2007)

Registered educators

Another source from which the availability of educators to the country can be derived is the South African Council for Educators' (SACE) database. The SACE Act no.31 of 2000 mandates SACE to provide for the registration of all educators. The Act explains the importance of registration for those in the teaching profession, as it categorically states that no person is permitted to practise as an educator unless he/she is registered with the Council. By the end of March 2006, SACE had registered a total of 482 665 educators (SACE, 2007:5).

Not all people, however, registered on SACE's database are education practitioners at public schools or recognised independent schools. Education practitioners at further education and training institutions (FETs), adult learning centres, early childhood development centres (ECD – practitioners with NQF level 4 and above) and office-based educators also have to register. According to the DoE's education statistics (DoE 2006a:19) there were around 40 000 ABET, Special Needs Educators, Public FET and ECD practitioners in 2005. In turn, not all people registered at SACE are currently practising. However, the SACE register does indicate a pool of nearly half a million education practitioners available to the ordinary school system in the country.

An analysis of data contained in the SACE register as at January 2008 indicates an availability of 514 502 educators in South Africa. A total of 380 886 of those registered are school based educators.

Table 10: Captured post-levels of SACE registered educators

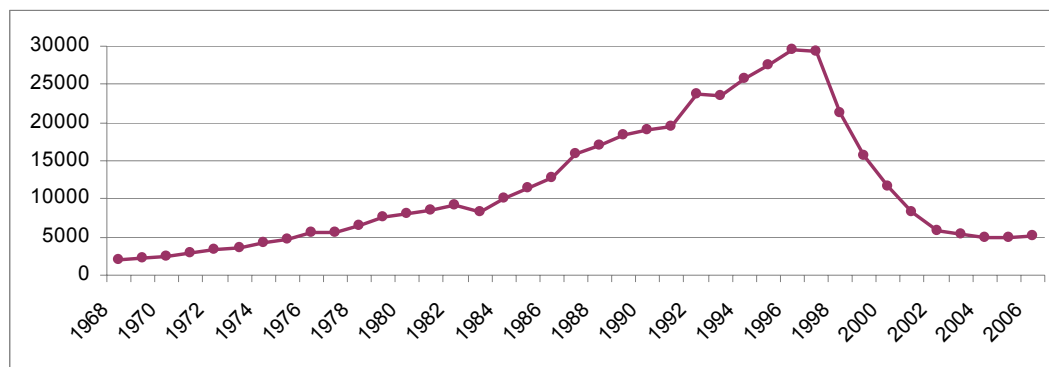
Post-level	Number	Per cent
Class Teacher	309510	60.16
Head of Department	33450	6.50
Principal	37926	7.37
School based	380886	74.03
Office based	2428	0.47
Other	131188	25.50
Total	514502	100.00

Source: Calculated from SACE database of registered educators.

One of the variables contained in the database is the year in which educators have obtained their first qualification in the field of education. If it is assumed that most educators begin teaching around the age of 25, there are an estimated 451 280 educators between the age of 27 and 65 years (i.e. those who graduated between 2006 and 1968).

It has to be noted that the SACE register includes educators who have qualified at Colleges of Education (i.e. as opposed to HEMIS and NLRD data that covers HETs only). The impact of the closure of education colleges is clearly visible from the figure below. Educator output grew steadily over the 30 years since 1968, peaked at around 30 000 in 1997 and dropped sharply over the next 5 years to stabilise at around 5 000 in 2002.

Figure 14: Educators registered with SACE, by year of first qualification obtained

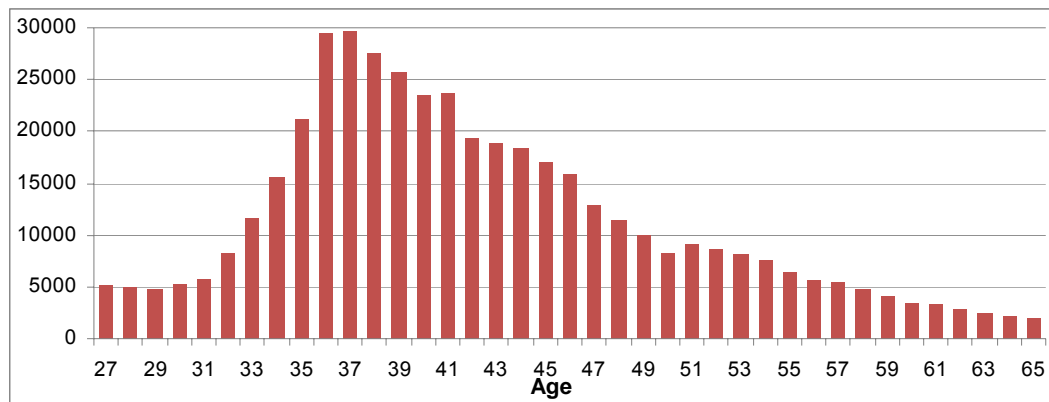


Source: SACE database of registered educators.

Due to inconsistent data capturing, the date of birth variable on the SACE database could not be used to compile an age profile of registered educators. If the assumption that most educators begin their teaching profession around the age of 25 is applied to develop an age distribution, then 48,46 per cent of all SACE registered educators who graduated between 1968 and 2006 are 40 years or younger. It was reported earlier that Arends (2007) estimated that 47,9 per cent of all educators were 40 years or younger in 2005. If the SACE age distribution is depicted in a graph an inverted

reflection of the graduation trends showed in the previous graph can be seen in Figure 15, below). It is clear that the closing down of Colleges of Education is an important contributing factor to the ageing of educators in South Africa.

Figure 15: Derived age distribution of SACE registered educators who have graduated between 1968 – 2006



Source: Own calculations from SACE database of registered educators

SAQA graduation trends

SAQA defines graduation trends as follows:

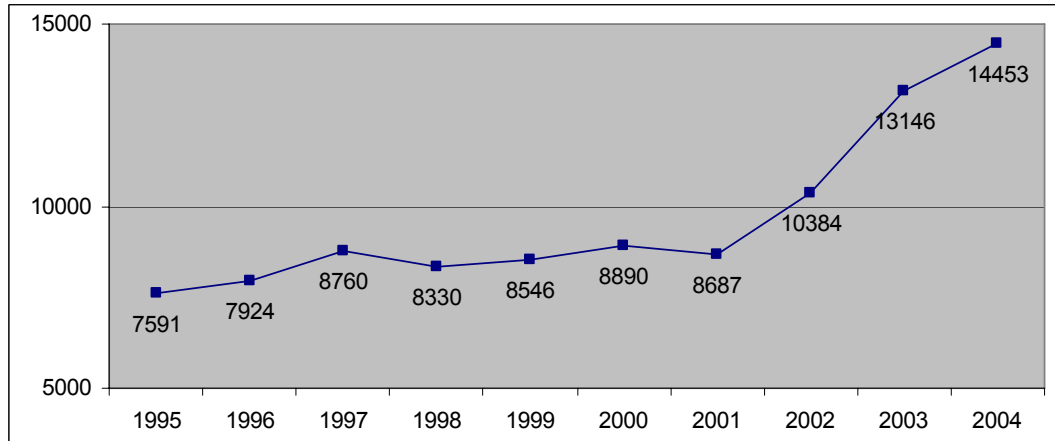
The concept "**graduation trends**" refers to the number of qualifications conferred within a specific academic year, irrespective of the previous qualifications attained by the learners. Learners who had achieved more than one qualification in the period reflected in the statistics were counted each time they achieved a new qualification.

In the analyses of individual fields of study, SAQA grouped qualifications into three NQF levels – Level 6, Level 7 and Level 8 and above:

- **Level 6** consists of national diplomas and three-year first degrees.
- **Level 7** contains all higher diplomas, post-graduate diplomas, four-year degrees (including B Tech degrees) and honours degrees.
- **Level 8** and above includes master's degrees and diplomas, laureates diplomas and doctoral degrees.

According to SAQA (2007) a total of 15 660 students graduated at NQF Level 6 or above in the field of Education in 2004. By far the majority (92,3 per cent or 14 453) of these graduates have obtained an NQF Level 7 qualification. Only 3,3 per cent (or 522 graduates) obtained an NQF Level 6 and a further 4,4 per cent (or 685 graduates) an NQF Level 8 qualification. It is clear that most (92,3 per cent or 14 453) of the students were qualifying at NQF Level 7 or equivalent to an REQV 14 qualification, the minimum entry level for acceptance as a qualified teacher. The number of NQF Level 7 graduates fluctuated around 8 000 between 1995 and 2001, but broke through the 10 000 mark in 2002 and ended close to 15 000 in 2004 (Figure 16).

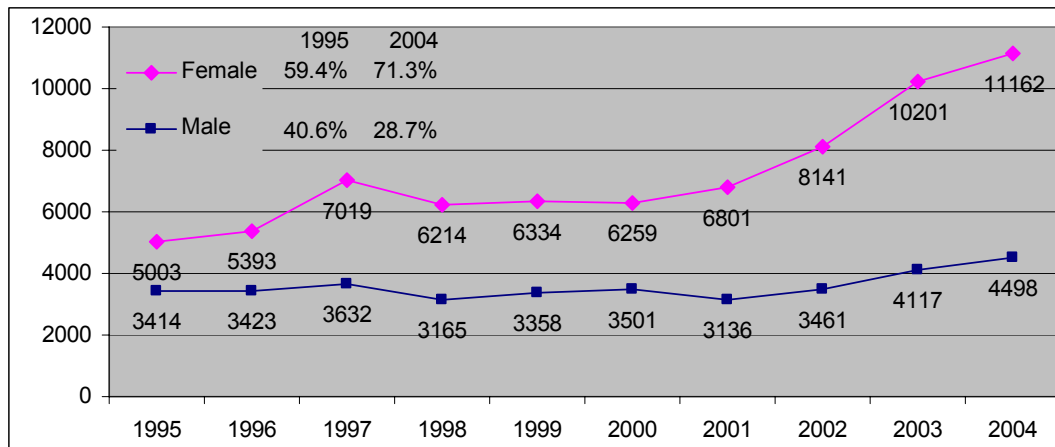
Figure 16: NQF Level 7 Graduation trends (1995 – 2004)



Source: SAQA (2007).

The increasing feminisation of the teaching profession is depicted in Figure 17, below. In 1995 there were 8 417 graduates of whom 5 003 (59, 4 per cent) were female and 3 414 (40, 6 per cent) were male. By 1999 nearly two-thirds (65, 4 per cent) of the graduates were female and by 2004 close to three-quarters (71, 3 per cent) of all graduates in the field of Education were female. It has to be noted that while the number of male graduates has increased over the ten year period, it did not keep track with growth among female graduates. The compound annual growth rate for male graduates was 3, 1 per cent compared to 9, and 3 per cent for female graduates.

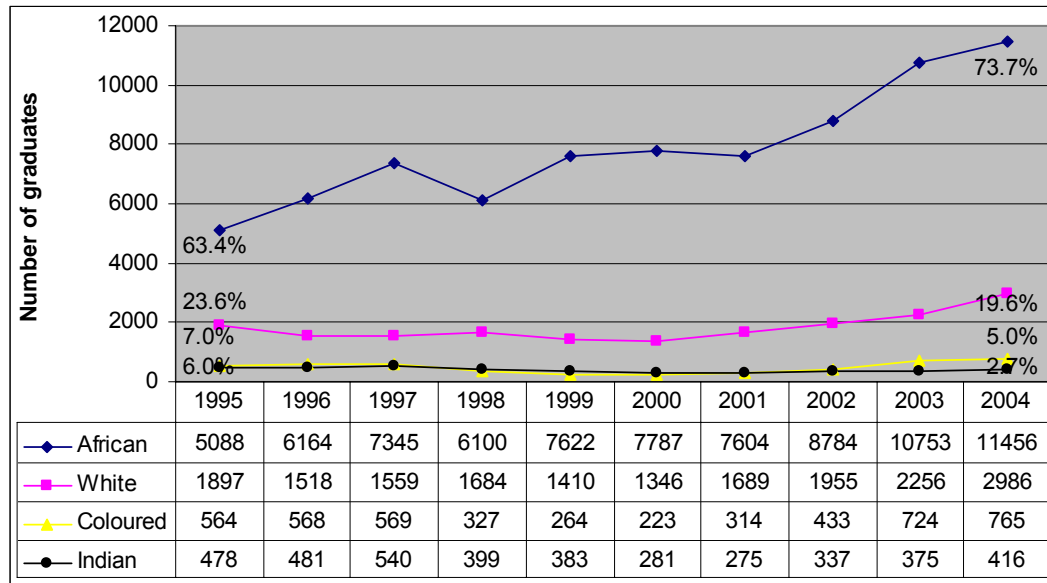
Figure 17: Graduation trends by gender (all Education graduates of 2004)



Source SAQA (2007)

In 1995, African graduates had the largest share of the qualifications awarded in the field of Education: 63, 4 per cent of all graduates (Figure 18 below). The total number of African graduates who achieved their highest qualification (Level 6 – 8) in the field of Education have more than doubled since 1995: up from 5 088 to 11 456 in 2004 when African graduates accounted for 73,7 per cent of all Education graduates. Concurrently, the share of each of the other three population groups contracted.

Figure 18: Population group distribution of Education graduates per year (1995 – 2004)

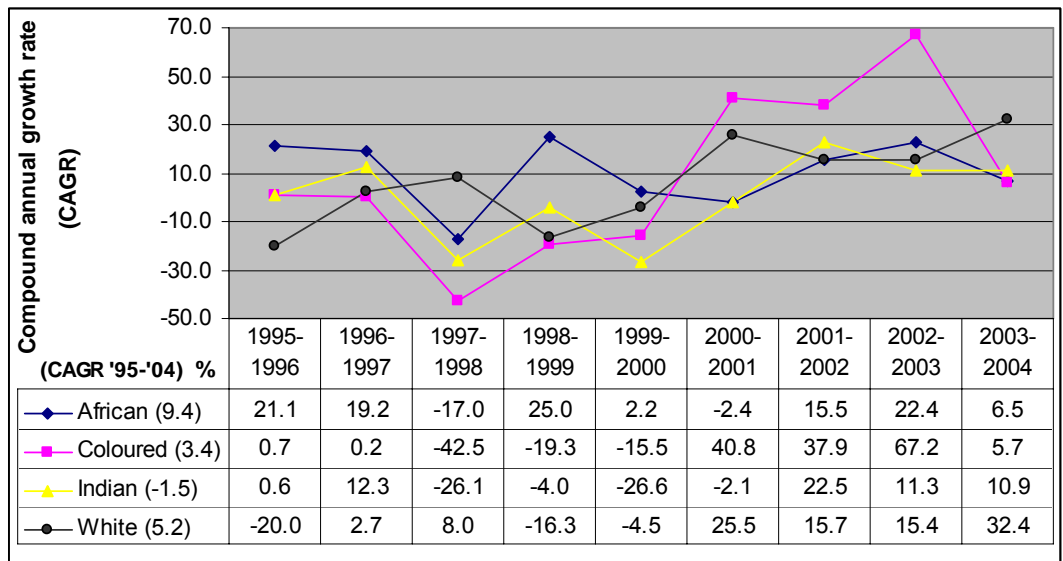


Source SAQA (2007).

Although the share of white, coloured and Indian Education graduates has declined over the ten years, there was overall growth in the number of coloured and white graduates (Figure 19). Coloured graduates in the field of Education had a compound annual growth rate of 3, 4 per cent between 1995 and 2004 and white graduates increased by 5, 2 per cent. It has to be noted that the number of Indian graduates showed a compound annual decline of -1, 5 per cent.

Figure 19 shows extreme fluctuations in the compound annual growth rate of graduates across the population groups from 1995 – 2004. Negative growth rates were recorded among all population groups up to 2002 after which strong but irregular growth took place. Of concern is the fact that although African graduates have showed a compound annual growth rate of 9, 4 per cent over the nine years, growth slacked to 6, 5 per cent in 2004 (down from 22, 4 per cent in 2003). Growth for coloured graduates plummeted from 67, 2 per cent in 2003 to 5, and 7 per cent in 2004. It is only percentages of white graduates that have shown constant growth since 2001. White graduates recorded the highest growth rate (32, 4 per cent) in 2004.

Figure 19: Compound annual growth among graduates, by population group (1995 – 2004)

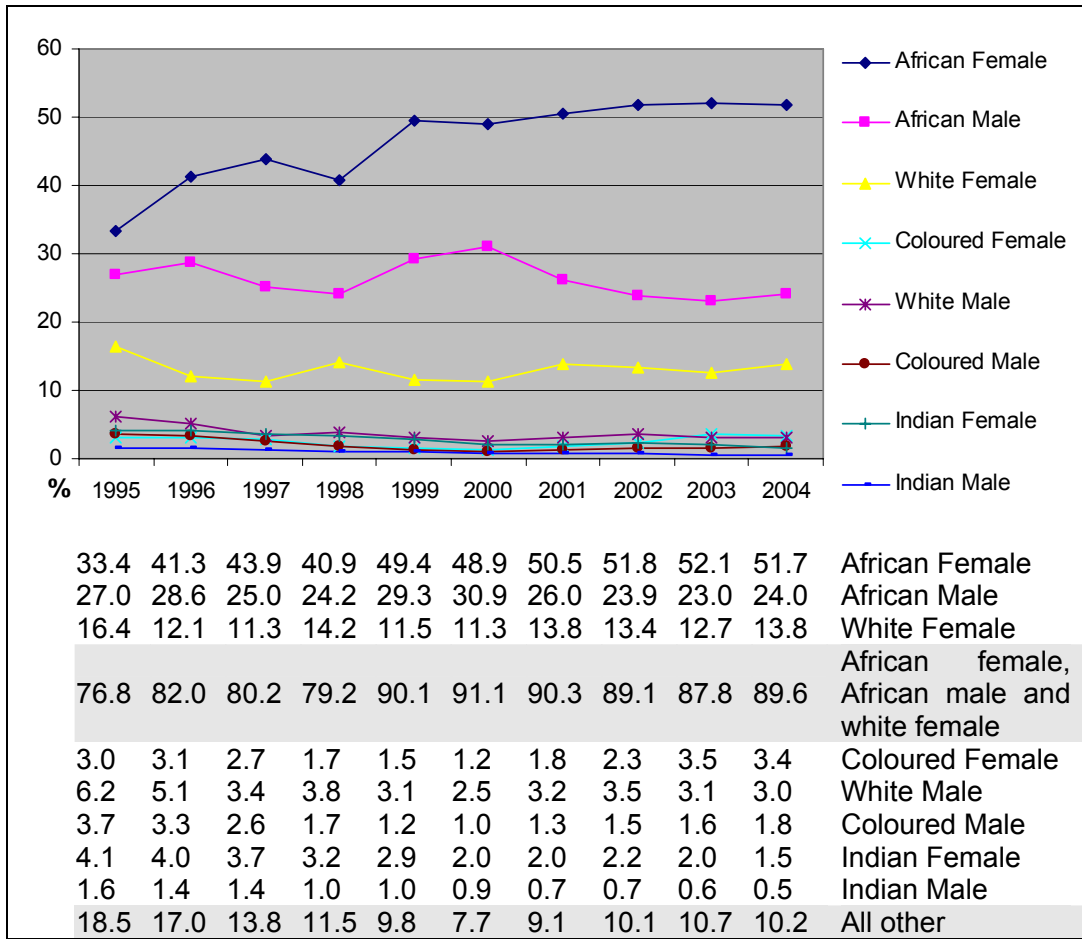


Source SAQA (2007).

African females, African males and white females dominate graduation in the field of education. Collectively these three groups represented 76, 8 per cent of all graduates across the eight race and gender categories in 1995 (Figure 20). The rest (coloured female, white male, coloured male, Indian female and Indian male graduates) collectively accounted for 18, 5 per cent in 1995. The share of white and coloured male and Indian female and male graduates has declined over the ten years, while the share of coloured female graduates has increased marginally.

By 2004 the collective share of coloured female and male, white male, Indian female and male graduates dropped to 10,2 per cent of all graduates in the field of Education (data table, **Error! Reference source not found.** 20). This decline can be attributed to growth in the share of African female graduates: the only group that showed gradual increases over the years, while the share of all the other race/gender groups showed stagnation or decline. In 1995 African female graduates accounted for a third (33, 4 per cent) of all graduates in the field of education. By 2004 this group represented half (51, 7 per cent) of all graduates. It has to be noted that the share of African male graduates showed a decline from 1995 (27, 0 per cent) to 2004 (24, 0 per cent).

Figure 20: Graduation trends by population group and gender (1995 – 2004)



Source SAQA (2007).

Enrolment

The number of students enrolled in initial teacher education programmes sustains the flow of new entrants into the profession (DoE, 2005:68). An analysis of HEMIS data shows that on average a total of 14 386 students started their studies for the first time in the field of Education every year at higher education institutions over the period 1996 to 2005 (**Error! Reference source not found.** 11). More than 140 000 students enrolled in Education over the ten years. First time enrolments in the field of education averaged at 12 213 students in the first five years of the ten year period, 1996-2000, but increased to an average of 17 048 over the last five years (2001 – 2005).

Table 11: First time entering in the field of Education students at all HET institutions:

	UG Cert./ Dipl. or NHDP	B degree (1st Bach)	Prof. B degr. or B Tech	PG Cert./ Dip.	PG Bach degree	Honours	Masters/ Magisters	Doctor/ Laureatus	Total
1996	2212	420	2042	3891	2220	2	82	0	10868
1997	3166	215	1634	3074	1713	2	97	0	9902
1998	6934	226	668	2605	2880	8	186	0	13507
1999	3529	377	5246	1337	3012	13	279	34	13826
2000	1467	99	3711	1457	4732	907	557	29	12960
2001	4177	185	3264	1029	2141	702	406	39	11943
2002	7098	2254	4103	1649	1058	3071	634	50	19916
2003	5160	615	4591	1162	721	3589	491	48	16376
2004	6366	133	4948	2969	750	3631	349	60	19205
2005	5799	134	5138	1121	318	2629	190	26	15356
Total	45906	4658	35345	20294	19544	14555	3271	286	143859
Average	4591	466	3535	2029	1954	1456	327	29	14386

Source HEMIS

Total excludes occasional enrollments

First time enrolments in the field of Education showed a compound annual growth rate of 3,9 per cent over the ten year period (**Error! Reference source not found.** 12). This figure differs considerably across the respective levels of qualifications. Around a 10 per cent compound annual growth rate was registered for Undergraduate certificates/diplomas or National Higher diplomas, for Professional B degrees (including B Tech degrees) and for Masters/Magisters. There was a compound decline of -11,9 per cent in enrollments in B degrees. This decline specifically occurred after the minimum entry level for all new educators joining the teaching profession was set at a four-year professional degree by the *Norms and Standards for Educators*, published in 2000.

Table 12: Compound annual growth rate for first time enrollments in the field of Education (1996 – 2005)

	UG Cert./ Dipl. or NHDP	B degree (1st Bach)	Prof. B degr. or B Tech	PG Cert./ Dip.	PG Bach degree	Honours	Masters/ Magisters	Doctor/ Laureatus	Total
96-97	43.1	-48.9	-19.9	-21.0	-22.8	7.0	19.2	0.0	-8.9
97-98	119.0	5.2	-59.1	-15.3	68.1	280.5	90.9	0.0	36.4
98-99	-49.1	66.7	685.3	-48.7	4.6	59.6	50.3	3300.0	2.4
99-00	-58.4	-73.7	-29.3	9.0	57.1	6790.5	99.5	-13.7	-6.3
00-01	184.7	86.6	-12.0	-29.4	-54.8	-22.6	-27.0	33.0	-7.8
01-02	69.9	1118.2	25.7	60.3	-50.6	337.5	55.9	28.2	66.8
02-03	-27.3	-72.7	11.9	-29.5	-31.8	16.9	-22.5	-5.0	-17.8
03-04	23.4	-78.4	7.8	155.5	4.0	1.2	-28.8	26.3	17.3
04-05	-8.9	0.8	3.9	-62.2	-57.6	-27.6	-45.5	-56.7	-20.0
99-05	11.3	-11.9	10.8	-12.9	-19.4	121.8	9.9	-2.9	3.9

Source: Calculated from HEMIS

There was exceptional growth in the number of enrolments in Professional B degrees (including B Tech degrees) in 1999 but two years of negative growth in enrollments followed. The year 2002 showed a compound annual growth rate of 25,7 per cent. This also coincided with the incorporation of colleges into universities, which started in 2001. Although growth was registered for the following three years, the growth was slowing down considerably ending at a compound annual growth rate of only 3,9 per cent in 2005.

An explanation for the growth in numbers of students registering in higher education institutions in 2002 seems to be the incorporation of colleges. When the Teacher Colleges were incorporated, college students were therefore transferred (as pipeline college students) to the receiving universities such as the University of South Africa (incorporated South African College for Open Learning (SACOL) and South African College for Teacher Education (SACTE)); University of Pretoria (incorporated Onderwyskollege Pretoria (NKP)), and University of Zululand (incorporated the Esikhawini College of Education and Eshowe College of Education) (RSA 2000). Once former Colleges of Education were closed or incorporated into universities in 2001, the numbers of black students trained as teachers significantly went down. Some of the possible reasons for this decline are:

- The (black) colleges of education offered automatic bursaries to students who studied as teachers. The closure of the colleges must have precluded a significant group that could not pay for higher education.
- Most black colleges admitted even students with low and very poor Matric passes to train as teachers. It could be, therefore, that the majority of black students who went to the colleges were students who did not have university entry in their matric pass and had gone to the colleges because that is where they were admitted, in which case they now do not qualify for admission since all teacher education is now offered at university.

The issue of the decreasing number of black students registering for teacher education needs some research.

A comparative analysis (1996 vs 2005) of the race and gender distribution of all students entering for the first time in the field of Education shows relative stability in enrolment across the four population groups (**Error! Reference source not found. 13**). The minor shifts that did occur can be attributed to increases in the share of African, coloured and white female enrollments.

Table 13: Race and gender distribution of first time enrollments at all levels of qualification in the field of Education (1996 vs 2005)

Race	1996	2005	1996	2005	Gender	1996	2005	1996	2005
African	8836	11577	78.1	74.8	Female	5417	7831	47.9	50.6
					Male	3420	3747	30.2	24.2
Coloured	469	811	4.1	5.2	Female	242	582	2.1	3.8
					Male	227	229	2.0	1.5
Indian	471	577	4.2	3.7	Female	342	468	3.0	3.0
					Male	128	109	1.1	0.7
White	1534	2505	13.6	16.2	Female	1180	2003	10.4	13.0
					Male	353	502	3.1	3.2
Total	11310	15470	100.0	100.0	Total	11310	15470	100.0	100.0

Source: HEMIS

Total includes occasional enrollments

A different picture emerges if the race and gender distribution of only those students that entered a Professional B degree/B Tech degree and Post graduate certificate/diploma for the first time in the field of Education are considered. The share of African first time enrolments declined considerably, while the share of white first time enrolments almost doubled in 2005 compared to 1996 (**Error! Reference source not found.14**). The share of coloured and Indian first time enrolments also showed increases. Increases occurred particularly among white female enrolments, but also among coloured and Indian female first time enrolments. Note that there was a decline of 12,2 per cent among African female first time enrolments.

Table 14: Race and gender distribution of Professional B degree/B Tech & PG Cert./Dep in the field of Education (1996 vs 2005)

Race	1996	2005	1996	2005	Gender	1996	2005	1996	2005
African	4377	3498	73.8	55.9	Female	2740	2130	46.2	34.0
					Male	1636	1368	27.6	21.9
Coloured	132	321	2.2	5.1	Female	74	242	1.2	3.9
					Male	58	78	1.0	1.3
Indian	342	488	5.8	7.8	Female	260	404	4.4	6.5
					Male	83	84	1.4	1.3
White	1082	1952	18.2	31.2	Female	889	1592	15.0	25.4
					Male	193	360	3.3	5.8
Total	5933	6258	100.0	100.0	Total	5933	6258	100.0	100.0

Source: HEMIS

Only Prof. B degree & PG Cert./Dep

Implications of race distribution

There are more black schools than white schools because of demographics of the country. It follows, therefore, that if there is a need for teachers, the need will be felt more in black schools than in white schools. Further, as illustrated by the figures

above, most under-qualified and unqualified teachers are in the African group. Yet, the studies report a drop in the number of Africans enrolling for initial teacher education.

Also, the highly qualified teachers, who may also be white, in most cases, live in the cities and city suburbs, and are unlikely to leave the schools and cities with better facilities, access to opportunities for professional development and career ladders, for the impoverished rural and township areas.

SA apartheid history has contributed to the critical skill shortage of qualified teachers being racial-based. Apartheid created inequalities amongst races; offered unequal education to races, and, therefore, the quality of teachers has always been very uneven amongst races. Because of that legacy, on the whole, white schools are still better equipped than black schools and therefore attracting better quality teachers than black schools. White schools' Governing Bodies are also able to employ and pay more educators.

Part of the Teacher Education Project (TEP) referred to earlier, and currently underway, looks at the teacher labour market. The TEP researchers acknowledge the effect the legacy of apartheid may have had on teacher education. That study, therefore, seeks to investigate, among others, the role and legacy of apartheid on teacher education, and the resulting challenges and issues.

For those who might question, (and some critics do) that more than 10 years after the official end of apartheid, we are still tracing the causes of low-quality of the majority of black teachers, and shortage of qualified and competent black teachers, to apartheid, there is a need for studies which will focus on the links between the discriminatory apartheid system and the current education inequalities. Lamberti, cited by Kane-Berman (2007:1), states: "Apartheid's most devastating and enduring legacy was that it destroyed the human capital of our nation. Kane-Berman (2007:1) further claims, "Although South Africa has some excellent private and government schools, it will take a generation to fix the rest."

Increasing the supply of qualified teachers

This section looks at the factors influencing the supply of skills to the teaching profession.

A total of 218 737 education qualifications were obtained over the ten-year period, of which 44 per cent were certificates/diplomas and nearly a third (31 per cent) post-graduate qualifications (mostly honours degrees and post-graduate certificates/diplomas) (see **Error! Reference source not found.** 15). There was a steady increase in education qualifications from 19 061 in 1996 to 29 348 in 2005, with the highest increase in B Tech degrees (326 per cent) and honours degrees (144 per cent). By 2005, 'other' qualifications were the most common type of qualification (29 per cent of the total), followed by certificates/diplomas which accounted for 24 per cent of the total, and honours a close third at 19 per cent.

Table 15: Total qualifications in education, 1996 – 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	%	% Incr.	
Cert./Dipl.	8450	7034	7620	10374	8964	11123	11654	11619	12910	7129	96878	44	-16	
N Dip	178	255	296	246	166	384	409	791	820	349	3894	2	96	
B Tech	400	367	523	2015	2884	1799	2016	2043	2970	1702	16717	8	326	
B degree	2270	2038	1951	1442	178	473	521	413	182	333	9801	4	-85	
Prof. B degr.	1735	1700	1623	997	866	891	1189	1356	2182	2375	14913	7	37	
PG Cert. /Dip.	3279	3121	2482	1683	1664	2095	3031	3876	4619	2713	28563	13	-17	
Honours	2241	2106	2024	1769	2786	3523	3954	4437	4985	5467	33292	15	144	
Masters	413	476	432	432	523	597	507	524	565	563	5032	2	36	
Doct./Laur.	95	77	77	97	142	94	100	117	128	114	1042	1	20	
Other						1	2				8603	8606	4	-
Total	19061	17174	17028	19055	18173	20980	23383	25176	29361	29348	218737	100	54	

Source: DoE (2006).

African graduates were the majority over the whole ten-year period, accounting for between 79 per cent and 87 per cent of graduates each year (**Error! Reference source not found.16**). The only decrease in numbers was among Indian graduates, whose share of the total number of graduates dropped from 4 per cent to 2 per cent between 1996 and 2005. There was little change in the share of total qualifications obtained by coloured and white graduates, with the former accounting for just under 5 per cent and the latter for just over 12 per cent in both 1996 and 2005.

Table 16: Total qualifications in education by population group, 1996 - 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	15055	13908	14031	12618	15577	17507	19571	20136	23908	23803
Coloured	878	599	466	377	347	593	688	1451	1271	1320
Indian	762	641	482	414	350	407	467	480	575	613
White	2366	2024	2048	1639	1572	2223	2526	2848	3405	3584
Total	19061	17172	17026	15048	17846	20730	23252	24915	29159	29320
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
African	79.0%	81.0%	82.4%	83.9%	87.3%	84.5%	84.2%	80.8%	82.0%	81.2%
Coloured	4.6%	3.5%	2.7%	2.5%	1.9%	2.9%	3.0%	5.8%	4.4%	4.5%
Indian	4.0%	3.7%	2.8%	2.8%	2.0%	2.0%	2.0%	1.9%	2.0%	2.1%
White	12.4%	11.8%	12.0%	10.9%	8.8%	10.7%	10.9%	11.4%	11.7%	12.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: DoE (2006a).

As can be seen from (**Error! Reference source not found. 17**), African graduates obtained most of the 'other' qualifications (91 per cent of the total), national diplomas (88 per cent), certificates/diplomas (87 per cent), bachelor's degrees (87 per cent) and honours degrees (82 per cent). Relatively few obtained master's degrees (47 per cent of the total) or doctorates (29 per cent). White graduates obtained 11 per cent of all qualifications, and obtained a relatively higher share of doctorates/laureates (53 per cent of the total), master's degrees (34 per cent), professional bachelor's degrees (93,2 per cent) and post graduate certificates/diplomas (24 per cent).

Only 4 per cent of education graduates were coloured, and they had a higher share of master's degrees (9 per cent). The same applies to Indian graduates, who constituted only 2 per cent of all graduates but obtained 9 per cent of master's degrees and 11 per cent of doctorates.

Table 17: Share of education qualifications by type and by population group, 1996 – 2005 (%)

	African	Coloured	Indian	White	Other
Cert./Dip.	87	3	1	4	5
N Dip	88	7	0	4	0
B Tech	85	5	1	9	0
B degree	87	2	3	8	0
Prof. B degr.	62	2	4	32	0
PG Cert./Dip.	65	5	5	24	1
Honours	82	5	3	10	1
Masters	47	9	9	34	0
Doct./Laur.	29	7	11	53	0
Other	91	5	1	3	0
Total	81	4	2	11	2

Source: DoE (2006).

Women comprised the majority of graduates in education, and their number increased more rapidly over the ten-year period than that of men (**Error! Reference source not found.18**). Female graduates increased their share of qualifications from nearly two-thirds of the total in 1996 to almost three-quarters in 2005.

Table 18: Share in total qualifications in education by gender, 1996 - 2005

Year	Number of graduates			Distribution (percentage)			
	Male	Female	Total	Year	Male	Female	Total
1996	6540	12520	19060	1996	34.3%	65.70%	100.0%
1997	5450	11723	17173	1997	31.7%	68.30%	100.0%
1998	4840	12188	17028	1998	28.4%	71.60%	100.0%
1999	4950	11172	16122	1999	30.7%	69.30%	100.0%
2000	5524	12650	18174	2000	30.4%	69.60%	100.0%
2001	5770	15207	20977	2001	27.5%	72.50%	100.0%
2002	6113	17271	23384	2002	26.1%	73.90%	100.0%
2003	6880	18295	25175	2003	27.3%	72.70%	100.0%
2004	8144	21217	29361	2004	27.7%	82.30%	100.0%
2005	7770	21578	29348	2005	26.5%	73.50%	100.0%
Total	61985	153820	215805	Total	28.7%	71.30%	100.0%

Source: ...

Comment [E1]: Source:

How many new teachers?

The Education Deans' Forum estimated that education institutions produced around 9 000 graduates in 2004 for teacher supply of whom at least 3 000 may already have been practising educators (Morrow 2007). This means that only 6 000, or 20,6 per cent of a total of 29 361 students that graduated in the field of Education in 2004 could be considered as new supply to the profession (**Error! Reference source not found. 19**).

Table 19: Total qualifications in education, 1996 – 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Cert./Dipl.	8450	7034	7620	10374	8964	11123	11654	11619	12910	7129	96878
N Dip	178	255	296	246	166	384	409	791	820	349	3894
B Tech	400	367	523	2015	2884	1799	2016	2043	2970	1702	16717
B degree	2270	2038	1951	1442	178	473	521	413	182	333	9801
Prof. B degr.	1735	1700	1623	997	866	891	1189	1356	2182	2375	14913
PG Cert./Dip.	3279	3121	2482	1683	1664	2095	3031	3876	4619	2713	28563
Honours	2241	2106	2024	1769	2786	3523	3954	4437	4985	5467	33292
Masters	413	476	432	432	523	597	507	524	565	563	5032
Doct./Laur.	95	77	77	97	142	94	100	117	128	114	1042
Other						1	2			8603	8606
Total	19061	17174	17028	19055	18173	20980	23383	25176	29361	29348	218737
Teachers	5909	5324	5279	5907	5634	6504	7249	7805	9102	9098	67808
New supply	3935	3546	3516	3934	3752	4332	4828	5198	6062	6059	45160
% of all quals	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6

Source: HEMIS data – (DoE, 2006a)

According to Morrow, who is a representative of the DoE's Committee on Teacher Education, the total (1st, 2nd, 3rd and 4th year) Initial Professional Education for Teachers (IPET) enrolments in the field of Education increased from 22 119 students in 2005 to 32 981 students in 2007 (**Error! Reference source not found.**20) (Morrow 2007). The number of students who were expected to complete their IPET studies was expected to increase from 5 322 in 2005 to 7 392 in 2007 (Morrow, 2007). Note that around a fifth of all registrations are considered as possible new teacher supply.

Table 20: Teacher supply – registrations and expected completions (2005, 2006 and 2007)

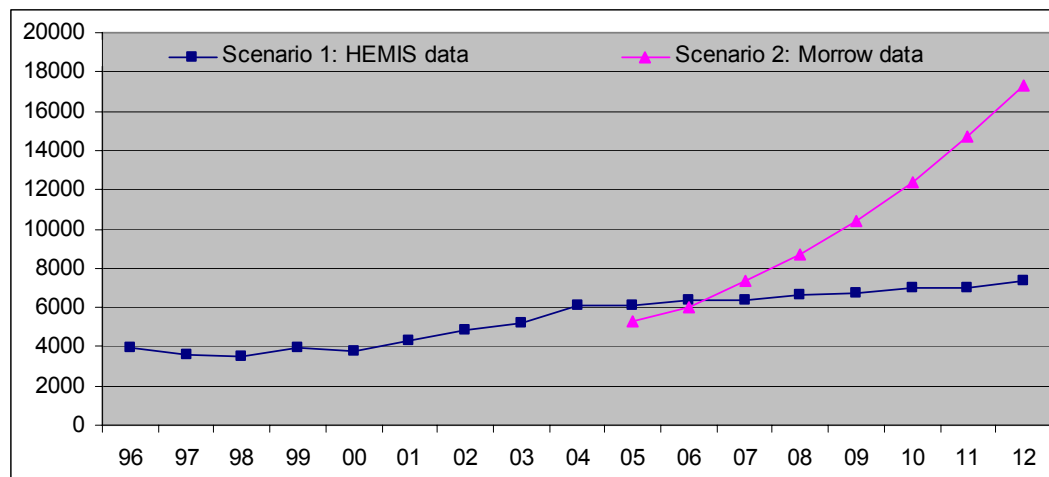
	IPET registrations				Expected IPET completions		
	2005	2006	2007		2005	2006	2007
Diplomas	1124	214	270	Diplomas	603	167	182
Degrees	17451	22958	27956	Degrees	2505	3786	4716
PGCE	3544	4221	4755	PGCE	2214	2076	2494
Total	22119	27393	32981	Total	5322	6029	7392
% of all registrations					24.1	22.0	22.4

Source: Morrow (2007)

Two scenarios for the future supply of teaching skills can be calculated from trends observed in HEMIS data and from the data provided by Morrow. In the first scenario, the status quo is maintained and no provision made for interventions to increase the number of enrolments. If the compound annual growth rate of 3,9 per cent (**Error! Reference source not found.** 20 above and Figure 21 below) for enrollments in the Professional B degree/B Tech degree in the field of education is used to project the number of new teachers over the next five years (2008 – 2012), then an estimated 34 744 can be produced. In the second scenario, if the compound annual growth rate of 17,9 per cent registered over the three years reported by Morrow (2005 – 2007) is

applied to calculate projections of future IPET completions, then an estimated 63 430 new teachers could be produced over the next five years (**Error! Reference source not found.** above and Figure 21 below).

Figure 21: Possible supply of new teachers over the next five years (2008 – 2012)



Source: Calculated from HEMIS data (DoE, 2006) and data provided by Morrow (2007)

Table 21: Registrations per gender and race (2006 & 2007)

	2006	2007
Male	28.5	30.5
Female	71.5	69.5
Total	100.0	100.0
African	43.2	49.7
Coloured	7.2	7.5
Indian	6.5	5.7
White	42.6	37.1
Total	100.0	100.0

Source: Calculated from data supplied by Morrow (2007)

Morrow also provides Teacher supply data (2007) from SA universities' registrations per phase: Foundation phase, Intermediate phase, Primary phase, Secondary phase and Further education and training. Determine if this could be used.

Table 22: University Education registrations per phase

	FP	IP	SP	FET
2006	6215	3648	5259	12281
	22.7	13.3	19.2	44.8
2007	7002	3523	7446	14102
	21.8	11.0	23.2	44.0

Source: Calculated from data supplied by Morrow (2007)

According to the registration figures in Table 22, and Arends (2007) and Arends & Chisholm (in press), the supply of skills to the education profession is increasing.

More educators are qualified, and to higher levels, and a large number of the educator workforce participates in some form of formal training every year. Further expansion in the stock of skills is probable given the targets currently in place for increased participation in higher education (HE).

Developments in teacher supply and recruitment

Since 1994, the SA DoE has introduced a number of programmes to upgrade non- and under-qualified teachers. For instance, the Advanced Certificate in Education (ACE) was introduced for qualified teachers who need to upgrade or to retrain in a new teaching subject area. These ACEs cover a variety of subjects, for example, ACE: Mathematics Education; ACE: Special Needs Education; ACE: Multicultural/Diversity Education.

In 2001, the National Professional Diploma in Education (NPDE) was introduced for under-qualified teachers, to replace the plethora of teacher qualifications below REQV 13, the minimum of M+3, that is, a three year qualification after matric. NPDE was supposed to run for five years only, after which all teachers would have the basic qualification, but the need has been greater than anticipated, and the term of the programme has been extended.

There is also the system of Recognised Prior Learning (RPL), in recognition of those who had accumulated experience and expertise in various fields. Through the RPL, candidates are assessed for knowledge, skills and other competencies acquired outside the formal schooling system. In the education profession these people would have been teaching, and would produce evidence of competencies obtained and some achievements in the education profession. The practice, however, has not been properly implemented, and very few, if any, teachers qualified through this process.

Also, a Teacher Development section and an Educator Human Resource Planning Chief Directorate have been established in the DoE to address the crucial field of teacher and professional development. The focus has been on two areas: ongoing programme delivery, and longer-term planning and policy development.

At the end of 2006, the DoE advertised Fundza Lushaka (Teach the nation) bursaries, and invited teacher education students to apply. It was hoped that black students who may have been precluded from studying at university because of unaffordability of fees, would apply, to address the question of decreasing numbers of black students entering the teaching profession. The condition for awarding of these bursaries was that recently qualified teachers, who had received bursaries towards teacher education, would be deployed in needy schools (especially in rural areas), for the number of years they had received bursaries.

Also introduced was *The National Policy Framework for Teacher Education and Development in South Africa*, April 2007. The slogan of the document is "More teachers, better teachers." The Framework is designed to "bring clarity and coherence to the complex matrix of teacher education activities, from initial

recruitment and preparation to self-motivated professional development” (RSA 2007:1). The aims of the Framework include ensuring:

- Appropriately qualified teachers fill all vacancies in all schools, and that there is a dynamic balance between demand and supply of teachers;
- There is a community of competent teachers dedicated to providing education of high quality, with high levels of performance as well as ethical and professional standards of conduct
(RSA 2007:1)

Bursaries from the DoE, the private sector, and other interested parties, are being offered to MST teacher education students. Some universities, for example, Wits University has been offering bursaries for the last five to six years to students who had outstanding results at Matric, in the Science subjects. The students are offered bursaries to cover their first year tuition at Wits, if they register in the Faculty of Engineering and Built Sciences, or the Faculty of Science. The University of the Western Cape (UWC), on the other hand, has the "Science made accessible" programme, offering Foundation classes to students who had weak passes in the Sciences in their Matric results.

The Departments of Education (DoE), Science and Technology (DST), and Labour (DoL), all have an interest in this issue. The DoE's interest is in having qualified and competent teachers equitably distributed among all public schools, and learners who take the needed subjects like Mathematics and Science. The DST is interested in, and promotes, teaching and learning of the natural science subjects. The DoL is interested in getting a skilled force that will effectively contribute to the economy of the country.

A number of projects are being undertaken also by non-governmental organisations with regard to Mathematics and Science. The projects include:

- PROTEC, which has a number of existing teacher training projects for FET Mathematics, Science and English teachers in Limpopo, Northern Cape, Gauteng and the Free State. PROTEC currently trains intermediate phase Science and technology teachers.
- The Sediba project, which allows teachers to upgrade their qualifications in Mathematics, Science and Technology by doing an NPDE, HED or a B Ed with an accredited institution. It focuses on subject development of teachers at FET and first year university level.
- The Quality Learning Programme, which deals with Mathematics at GET and FET level but also does Science and school management.
- The Dinaledi project, which is a national project involving 102 schools across the country. It is an improvement program that includes Mathematics and Science teacher training and resourcing of schools.
- The Thinthana project, a national project which focuses on upgrading Mathematics and Science provisioning at FET level. It was led in the North-West Province by Wits University-based Research and Development in Mathematics, Science and Technology Education (RADMASTE) programme and engages Mathematics and Science teachers in about six days of training on selected topics

per year. It supplies schools with VCRs and TVs, Maths and Science videos, Science kits and access to IT facilities set up in hub schools.

On the cards

The Minister of Education has proposed paying higher salaries to MST teachers, to attract these teachers to teaching. The rationale for this proposal is that these teachers are offering scarce and critical subjects. The Ministry has also proposed paying more to teachers willing to be deployed in the rural areas. These proposals have, so far, been opposed by the teachers' unions.

To address the changed profile of the learner population in SA schools, and therefore the need for teachers to be competent in multicultural, multilingual and generally diverse classrooms, teacher education institutions are all offering preparation for diverse-learner classrooms.

The Department of Education has also promised supplying schools with assistant teachers, in an effort to address the problem of overcrowded classes, and to reduce the workload of teachers which is claimed to have increased tremendously, during the last decade, in terms of administrative work.

Likely effects of these measures?

It is not clear when the impact of all these developments will be felt, whereby, a difference would be made in the SA school system. Still, the measures are all definitely steps in the right direction.

All the above projects are critical to the process of upgrading the skills of teacher candidates and teachers in the force, so that the quality of the teaching staff will not become a major stumbling block to the attainment of the EFA 2015 goals. More training for teachers in specialist learning areas is imperative. Furthermore, quality education means much more than improved training qualifications. Qualifications are only one aspect of quality learning - teacher experience, classroom curriculum; teaching and learning conditions including adequate financing of education, school management and school leadership are some of the other factors affecting the provision of quality education.

What still needs to be done?

Some of the actions that still need to be taken or efforts to be increased are:

- upgrading teachers in language skills, literacy, numeracy and computing skills. The pronouncement on the poor performing SA learners in literacy and numeracy, placing them at the bottom internationally (Howie et al. 2007), is a reflection of the quality of their school, teachers, and learning environments.
- retraining/re-educating teachers currently in the system to enable them to cope with demands of new curricula; and new classroom realities – diverse classrooms, inclusive classrooms, social ills such as drugs, child-headed households, and the increasing numbers of orphans and vulnerable children;
- educators to replace educators dying from HIV/AIDS, those who have emigrated from the country and from the profession;
- improvement of working conditions of teachers, including their salaries;
- enough teachers in all classrooms for healthy teacher-learner ratios;

- expertise and continuous lifelong learning should be infused in teacher development programmes;
- there must be strong investment in upgrading poor schools and their infrastructures, so that all schools have basic necessities, to reduce the need to migrate to former white and city schools;
- schools and teachers to produce students who are ready for higher education and to contribute to the economic development of the country; and
- All parties, including the DoE, the private sector, and community organisations, must invest in safety and security in schools.

What will be the national social/economic impact if issue of critical skills is not addressed in the medium/long-term?

- In terms of the MST area, if very few learners learn and pass these subjects at high school, study MST at Higher Education institutions, and pursue careers in these fields, then we will not be able to meet targets of required skills and contributions to the economy through natural scientists.
- If the quality of teachers in black schools remains poor/below required/acceptable standard, racial inequalities of apartheid in education will still be perpetuated.
- Learners from poor, township, and rural schools will continue to migrate to urban, suburb, and better-equipped schools. The latter schools therefore get overcrowded and the quality of learning in these classrooms may be negatively affected.

Contradictions in available data on teacher supply and demand

In the section on demand for educators, we reported sources and groups that claim there is a shortage of teachers. Some of the sources do not differentiate between quantity and quality, often implying that there is a shortage of thousands of teachers. According to data displayed and analysed in this study, the shortage of educators is not in terms of numbers. There is a shortage of critical skills among educators, and that is discussed in the next section.

While our analysis of the teacher supply and demand landscape and conclusions rely heavily on DoE figures, these figures may not be accurate. The process, and procedures of collecting data from schools on profiles of schools and educators are suspect in many cases. The system of reporting is not uniform and not properly maintained in most cases. Under such circumstances, reports may be manipulated by over- under- or non-reporting items and aspects that may have negative effects. With no proper monitoring therefore, schools may inflate figures to suit specific purposes. DoE officials may, and do, sometimes gloss over gaps and weaknesses if the true picture may expose negligence or incompetence.

The actual educators' critical skills

An assessment of the situation is that the scarce or critical skills shortage in teachers is qualitative not quantitative/numerical. In other words, SA has shortages of specific skills and teacher qualities from the current body of teachers, rather than a shortage in the number of teachers available. The skills scarcity varies according to geographical areas, school grades, subjects, race, and age groups. It is possible,

therefore, that a shortage in the number of teachers may be reported, because qualified/skilled teachers may be concentrated in some areas.

A lot has been written on the shortage of Maths, Science, and Technology (MST) teachers. This is easier to assess and make pronouncements on, as this can be measured, by checking how many teachers have qualified in this subject, how many teachers are teaching this subject. It is the belief of this researcher, however, that the greatest problem is that of quality of teachers. This is difficult to measure and therefore difficult to assess the extent of this problem.

There is a need to identify what the necessary and desirable teacher skills are, and then measure in the best way possible, the nature and extent of the scarcity. The ideal is to have adequate teachers numerically, who are also good at what they do, otherwise the goals and ambitions of the society for a high level of education for all will not be realized. "The delivery of quality learning in any education system, depends on sustaining the supply of teachers of quality and in sufficient numbers, to meet demand" (Paterson & Arends 2007:10).

This study believes that the challenge of teacher supply has its origins in pre-1994 SA, and is not about the number of teachers in the SA classrooms, but the quality of the teachers who are teaching. We therefore, unequivocally state that instead of expanding the pool of teachers, focus should be on improving teacher quality.

Based on available data, we conclude that there is a great need for quality teachers, to offer quality education. According to Bloch (2007), SA has not succeeded in providing quality education and ensuring equality in education. He states, "If there is one phrase that summarizes the failings of the education system, it is poor quality. In failing to achieve quality delivery, the education system is working only for a proportion of the learners who are able to access the relevant institutions" (Bloch 2007:6). Bloch ascribes this failure to the quality of teaching and teacher support. The areas where teachers are particularly weak are: "teacher subject knowledge", "time on task", and "discipline" (p.6).

Metcalfe (2008:10) concurs. She identifies teacher quality as the "most significant factor affecting learner performance", and then citing findings from research, states:

... the conceptual knowledge of our teachers is low; teachers have a poor grasp of the subjects they teach; there is a high level of teacher error in the content and concepts presented in lessons; and teachers have low expectations of learners, who then achieve to these low expectations.

The SA national Department of Education accepts these shortcomings, and so the National Policy Framework for Teacher Education of 2007 (RSA 2007) seeks to address this problem as it acknowledges the findings of the 1999 President's Education Initiative Research Project. This President's Project "concluded that the most critical challenge for teacher education in South Africa was the limited conceptual knowledge of many teachers. This includes poor grasp of their subjects as evidenced by a range of factual errors made in content and concepts during lessons" (RSA 2007:4-5).

According to Bloch (2007:4), the result of poor quality in education is that, “[SA] is not able to meet national goals, either around provision of adequate skills for growth, nor in terms of providing access to quality education that would enable equitable sharing of opportunities.” He argues how this affects the country’s economy negatively, as the quality of education influences individuals towards improving their personal efficacy, productivity and incomes. “Accordingly, the quality of education makes a significant difference to the prospects of achieving a wide range of individual and development goals” (UNESCO – Education For All Bloch 2007 citing cited in Bloch 2007:3).

In the report, *Teachers for the future* (DoE 2005:46), the impact of quality teachers and quality education on the economy is also established. The report states:

Qualified teachers are amongst a nation’s most valuable resources as they contribute towards ensuring quality education, and a continued flow of skilled young people into the economy. Qualified teachers have a noticeable impact on the quality of education.

In the same document, DoE (2005:46) noted that “qualified teachers have a noticeable impact on the quality of education” but that “academic skills are not enough to have a positive influence on learners’ results, and a broader teaching competence is also necessary”.

Also critically lacking among SA educators are linguistic skills, an area that seems not thoroughly explored. Experiences as an educator at university, teaching Education students, and supervising dissertations and theses of Education students who are mainly practising teachers registered for higher degrees such as BEd Honours and Masters in Education, have shown the lack of language skills teachers have. These are mainly African-language-speaking South African teachers. (It is important to make this distinction because African-language-speaking teachers from other African countries, who were therefore not educated in SA, do not seem to have this problem.)

A significant majority of the already-mentioned (SA) African teachers cannot express themselves in the language of learning, which is usually English, even though their schooling and tertiary education may have been through English. The language weakness is not at the level of sophisticated linguistic styles, or use of colloquial language in formal writing, but the lack of basic English language skills as in correct usage of tense, agreement between the noun and the verb, and construction of a proper sentence. The poor language skills extend to lack of reading skills, which make studying for a senior degree very difficult as this usually entails a lot of reading. It can be assumed, therefore, that the same teachers do not read in their fields, or enrich their teaching by reading extra texts.

It is therefore not surprising that the recent University of Pretoria, Progress in International Reading Literacy Study (PIRLS), whose results were released on 29 November 2007, found that SA grade 5 learners have not mastered basic reading skills and achieved the lowest scores in a literacy study of Grade 4 and 5 pupils in 39 countries (Howie et al. 2007:60). There clearly is a link between the performance standard of the SA learners and the SA schools and teachers who produce these

learners. The study also found that “in most schools insufficient time is spent on reading activities or formal reading instruction” and the study confirmed that “South African teachers read less often in their spare time compared to those in the highest achieving countries in PIRLS 2006” (Howie et al. 2007: 61).

The age of the teachers seems to be a variable in the problem of lack of linguistic skills. For example, teachers in their fifties and sixties, in age, are more likely to have a better command of the language than their younger colleagues. It seems that the weak teachers are also predominantly teachers who were trained in colleges. This may need to be investigated.

Another critical skill that seems to be lacking among the teachers, is that defined as a requirement by the national department, namely that teachers should also be “mediators of curriculum.” The launch in South Africa of Curriculum 2005, using the Outcomes-based education approach, in 1997, brought the spotlight on teacher training and readiness of schools to implement the new curriculum. Of course, much criticism has been directed at the Government and the Ministry of Education of that time. The introduction of this curriculum was strongly criticised for being an improper transplant of an approach that is not suitable for the country, inadequate preparation of teachers, and rushed implementation of the curriculum.

While the criticisms above would apply to the whole country, it has been argued by analysts of the curriculum and the SA education system, that the introduction of this curriculum emphasised the inequalities among schools and teachers. Schools that had better facilities, and “better” teachers, were not derailed by the new curriculum. Some analysts argue that excellent and properly qualified teachers were comfortable with the approach that required them to be creative, and allowed them some choice with regard to teaching material (Harley & Wedekind 2004; Jacobs 2000, Jansen 1999). Some teachers, mainly in the previously white schools, reported that the approach advocated in the new curriculum was in line with the approach they had been using in their teaching anyway.

The picture in the rural, township, and under-resourced schools in general is a disturbing one. The inadequate training of teachers in Curriculum 2005 and Outcomes-based-education (OBE) had disastrous results in these schools. The teachers were mainly lost and could not apply the approach. On the other hand, the message teachers seemed to have received was that they could not continue to teach using the methods they had been using. So, even though they did not actually understand how they were supposed to teach using OBE, many abandoned the methods they understood and tentatively and half-heartedly started applying the new approach (Jansen 1999). There was a lot of confusion in schools. Most importantly, the confidence of the teachers in their teaching ability was destroyed.

Listening to teachers describe the difficulties they have with the OBE approach and Curriculum 2005, it is evident that this is less about how they were prepared for the new curriculum, than about the shortcomings of their pre-service training. The fact that inadequate preparation of all teachers in the new curriculum affects sections of the teacher/educator population differently, points to deficiencies and inequalities in the teaching profession that existed before the new curriculum was introduced.

The deficient teacher skills discussed above translate into weaknesses in learners who leave school after completing both the GED and the FET phases. For those who leave for higher education and for the work world, the complaints are that they (learners) are not well-prepared for the next phases – higher education or workplace. Questions are then raised about the schools and teachers who produced these learners. The ill-preparedness of school-leaving students is then linked to the economy of the country. For instance, on the shortage of properly qualified MST teachers and few students leaving school with good passes in these subjects, it is alleged that the economy of the country will be negatively affected:

One of the greatest challenges currently facing this country is to produce sufficient skilled students in the field of mathematics and science to meet the growing demand for technically qualified personnel required to keep the economy on a strong growth trajectory. (Merit in incentives for teachers. Education Herald, *The Herald*, 08 February 2006, p.6)

Linked to the needs already identified above, there are certain qualities that society values that every teacher should possess. Ideally, only prospective teachers who displayed these qualities would be admitted to the profession. However, not only is it difficult to assess whether teacher education applicants possess these qualities or dispositions, but the need for qualified teachers leads to admission of every teacher education applicant who meets the minimum academic requirements for admission into the teacher programme.

The problem of non- and under-qualification among white teachers, and to an extent, the Indian and coloured teachers, seems very minimal. The majority of teachers in these schools seem to be competent teachers in their subjects/areas and the language of teaching which may be their first language (English or Afrikaans) or second language (English or Afrikaans). For these teachers, the skill that is most needed in post 1994 SA, is the skill of teaching diverse learners, usually referred to as Skills, Knowledge, Attitudes and Values (SKAVs) in diverse classroom teaching. This seems to be a skill that has become very important for these teachers, as the learners of different races, ethnicity, and language groups are migrating to these schools. Research shows that the learner population has changed significantly to very diverse learner population while the teachers have remained largely monoracial and monolingual. Media reports and experiences of South Africans, especially black people, are that these schools are finding it difficult to either shake off their racial policies, or to effectively integrate the different racial groups. What happens usually is assimilation of the incoming groups (Mda 2000; Soudien; Moletsane, Muthukrishna & Hemson 2004).

CONCLUSION AND RECOMMENDATIONS

In this study the issue of skills shortages among educators has been discussed at length. The results suggest a raise of questions for further research:

- How can educators be re-skilled in the required skills/competencies?
- Are long-practising educators re-educable?

- How do we improve the quality of education with the current cadre of teachers?
- Is the focus and emphasis on MST to the exclusion of other subjects or specialisation areas justified? Aren't literacy and numeracy the basic skills teachers should be quite competent in, schools effectively teaching, and thus the focus of our attention?
- What is the link between the actual critical teacher/educator skills needed and the economy of the country?
- What skills do educators think and say they need as compared to what, researchers think they need?

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Appendix A
Table 23

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	Certificate/ diploma with less than Grade 12/ Std 10	Certificate/ Diploma with Grade 12/ Std 10	Bachelors Degree, BA and Diploma or Honours Degree	Higher Degree (Masters, Doctorate)	Total	Certificate / diploma with less than Grade 12/ Std 10	Certificate / Diploma with Grade 12 Std 10	Bachelors Degree, BA and Diploma or Honours Degree	Higher Degree (Masters, Doctorate)	Total
1 Total	40233	361574	196138	12316	610261	6.6	59.2	32.1	2.0	100
2 Not economically active (NEA)	6331	37596	18925	229	63082	15.7	10.4	9.6	1.9	10.3
3 Employed	30575	310538	171987	11060	524159	76.0	85.9	87.7	89.8	85.9
4 Unemployed	3328	13440	5226	1027	23021	8.3	3.7	2.7	8.3	3.8
5 Economically active	33902	323978	177213	12087	547179	84.3	89.6	90.4	98.1	89.7
6 Total	40233	361574	196138	12316	610261	100.0	100.0	100.0	100.0	100.0
7 Mean age	39.9	40.7	42.7	48.3	41.5	.	.	.	.	.
8 Gender (Total)	40233	361574	196138	12316	610261	100.0	100.0	100.0	100.0	100.0
9 Male	18706	125118	71404	5236	220464	46.5	34.6	36.4	42.5	36.1
10 Female	21349	236456	124464	7080	389349	53.1	65.4	63.5	57.5	63.8
11 Unspecified	178	0	269	0	447	0.4	0.0	0.1	0.0	0.1
12 Race (Total)	40233	361574	196138	12316	610261	100.0	100.0	100.0	100.0	100.0
13 African	30181	266225	114060	7046	417512	75.0	73.6	58.2	57.2	68.4
14 Coloured	2139	31004	6694	507	40344	5.3	8.6	3.4	4.1	6.6
15 Indian	2892	7622	3315	0	13829	7.2	2.1	1.7	0.0	2.3
16 White	5021	56724	72068	4763	138576	12.5	15.7	36.7	38.7	22.7
17 NEA	6331	37596	18925	229	63082	10.0	59.6	30.0	0.4	100.0
18 Mean age	49.2	45.3	53.7	50.0	48.3	.	.	.	.	.
19 Gender (Total)	6331	37596	18925	229	63082	100.0	100.0	100.0	100.0	100.0
20 Male	4567	6328	3627	0	14522	72.1	16.8	19.2	0.0	23.0
21 Female	1765	31268	15297	229	48559	27.9	83.2	80.8	100.0	77.0
22 Unspecified	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
23 Race (Total)	6331	37596	18925	229	63082	100.0	100.0	100.0	100.0	100.0
24 African	4070	21637	3814	229	29750	64.3	57.6	20.2	100.0	47.2
25 Coloured	345	3255	955	0	4555	5.4	8.7	5.0	0.0	7.2
26 Indian	346	118	1267	0	1731	5.5	0.3	6.7	0.0	2.7
27 White	1570	12587	12889	0	27046	24.8	33.5	68.1	0.0	42.9

28	Economically active	33902	323978	177213	12087	547179	6.2	59.2	32.4	2.2	100.0
29	Mean age	38.2	40.2	41.5	48.3	40.7	.	.	.	.	.
30	Gender (Total)	33902	323978	177213	12087	547179	100.0	100.0	100.0	100.0	100.0
31	Male	14140	118790	67777	5236	205942	41.7	36.7	38.2	43.3	37.6
32	Female	19584	205188	109166	6851	340790	57.8	63.3	61.6	56.7	62.3
33	Unspecified	178	0	269	0	447	0.5	0.0	0.2	0.0	0.1
34	Race (Total)	33902	323978	177213	12087	547179	100.0	100.0	100.0	100.0	100.0
35	African	26111	244588	110246	7046	387991	77.0	75.5	62.2	58.3	70.9
36	Coloured	1794	27749	5740	507	35790	5.3	8.6	3.2	4.2	6.5
37	Indian	2546	7503	2048	0	12097	7.5	2.3	1.2	0.0	2.2
38	White	3451	44137	59180	4533	111301	10.2	13.6	33.4	37.5	20.3
39	Employed	30575	310538	171987	11060	524159	5.8	59.2	32.8	2.1	100.0
40	Mean age	38.3	40.4	41.7	48.7	40.9	.	.	.	.	.
41	Gender (Total)	30575	310538	171987	11060	524159	100.0	100.0	100.0	100.0	100.0
42	Male	13340	114404	65802	5236	198782	43.6	36.8	38.3	47.3	37.9
43	Female	17056	196134	105915	5824	324929	55.8	63.2	61.6	52.7	62.0
44	Unspecified	178	0	269	0	447	0.6	0.0	0.2	0.0	0.1
45	Race (Total)	30575	310538	171987	11060	524159	100.0	100.0	100.0	100.0	100.0
46	African	23210	231222	106708	7046	368186	75.9	74.5	62.0	63.7	70.2
47	Coloured	1794	27676	5740	507	35717	5.9	8.9	3.3	4.6	6.8
48	Indian	2120	7503	2048	0	11671	6.9	2.4	1.2	0.0	2.2
49	White	3451	44137	57492	3506	108586	11.3	14.2	33.4	31.7	20.7
50	Unemployed	3328	13440	5226	1027	23021	14.5	58.4	22.7	4.5	100.0
51	Mean age	37.3	34.6	34.8	44.0	35.4	.	.	.	.	.
52	Gender (Total)	3328	13440	5226	1027	23021	100.0	100.0	100.0	100.0	100.0
53	Male	799	4385	1974	0	7159	24.0	32.6	37.8	0.0	31.1
54	Female	2528	9054	3252	1027	15861	76.0	67.4	62.2	100.0	68.9
55	Unspecified	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
56	Race (Total)	3328	13440	5226	1027	23021	100.0	100.0	100.0	100.0	100.0
57	African	2901	13366	3538	0	19805	87.2	99.4	67.7	0.0	86.0
58	Coloured	0	74	0	0	74	0.0	0.6	0.0	0.0	0.3
59	Indian	427	0	0	0	427	12.8	0.0	0.0	0.0	1.9
60	White	0	0	1688	1027	2715	0.0	0.0	32.3	100.0	11.8
61	Unemployment rate						9.8	4.1	2.9	8.5	4.2

62	Male						5.7	3.7	2.9	0.0	3.5
63	Female						12.9	4.4	3.0	100.0	4.7
64	African						11.1	5.5	3.2	0.0	5.1
65	Coloured						0.0	0.3	0.0	0.0	0.2
66	Indian						16.8	0.0	0.0	0.0	3.5
67	White						0.0	0.0	2.9	22.7	2.4
68	Occupation (employed total)	30575	310538	171987	11060	524159	100.0	100.0	100.0	100.0	100.0
69	Legislators, senior officials and managers	316	9405	23063	4089	36873	1.0	3.0	13.4	37.0	7.0
70	Professionals	3814	37178	107590	6185	154767	12.5	12.0	62.6	55.9	29.5
71	Technical and associate professionals	20058	225975	25621	785	272438	65.6	72.8	14.9	7.1	52.0
72	Clerks	1224	18887	10231	0	30342	4.0	6.1	5.9	0.0	5.8
73	Service workers and shop and market sales workers	3192	7436	1854	0	12482	10.4	2.4	1.1	0.0	2.4
74	Skilled agricultural and fishery workers	283	1598	861	0	2742	0.9	0.5	0.5	0.0	0.5
75	Craft and related trades workers	1600	1990	1053	0	4643	5.2	0.6	0.6	0.0	0.9
76	Plant and machine operators and assemblers	0	578	1019	0	1598	0.0	0.2	0.6	0.0	0.3
77	Elementary Occupation	88	7491	694	0	8273	0.3	2.4	0.4	0.0	1.6
78	Not education related	12231	63534	46627	4365	126756	40.0	20.5	27.1	39.5	24.2
79	Mean age	34.5	41.1	42.5	51.1	41.3	.	.	.	.	.
80	Education related	1898	1725	10376	2058	16056	6.2	0.6	6.0	18.6	3.1
81	Mean age	33.9	41.6	43.1	51.1	42.9	.	.	.	.	.
82	Educators	16447	245280	114984	4636	381346	53.8	79.0	66.9	41.9	72.8
83	Mean age	41.6	40.3	41.2	45.3	40.7	.	.	.	.	.

84	Professionals	1254	31381	93209	4637	130481	7.6	12.8	81.1	100.0	34.2
85	Mean age	49.8	40.3	41.3	45.3	41.3					
86	Associate professionals	15192	213899	21773	0	250865	92.4	87.2	18.9	0.0	65.8
87	Mean age	41.0	40.2	40.7	.	40.33					
88	Professionals	1254	31381	93209	4637	130481	100.0	100.0	100.0	100.0	100.0
89	Secondary education, professional	0	10229	53026	3958	67213	0.0	32.6	56.9	85.4	51.5
90	Primary education, professional	779	20679	39226	679	61363	62.1	65.9	42.1	14.6	47.0
91	Pre-primary education, professional	475	473	957	0	1905	37.9	1.5	1.0	0.0	1.5
92	Associate professionals	15192	213899	21773	0	250865	100.0	100.0	100.0	0.0	100.0
93	Primary education, associate professional	10700	125487	7977	0	144164	70.4	58.7	36.6	0.0	57.5
94	Pre-primary education, associate professional	501	5129	164	0	5794	3.3	2.4	0.8	0.0	2.3
95	Teaching associate professionals nec	3991	83283	13632	0	100907	26.3	38.9	62.6	0.0	40.2
96	Educators	.	.	.	.	.	.	.	.	.	.
97	Gender (Total)	16447	245280	114984	4636	381346	100.0	100.0	100.0	100.0	100.0
98	Male	5450	90160	38540	2122	136272	33.1	36.8	33.5	45.8	35.7
99	Female	10996	155120	76175	2514	244805	66.9	63.2	66.2	54.2	64.2
100	Unspecified	0	0	269	0	269	0.0	0.0	0.2	0.0	0.1
101	Race (Total)	16447	245280	114984	4636	381346	100.0	100.0	100.0	100.0	100.0
102	African	13634	187552	77219	4307	282711	82.9	76.5	67.2	92.9	74.1
103	Coloured	601	25271	4315	280	30468	3.7	10.3	3.8	6.0	8.0
104	Indian	1324	6684	928	0	8936	8.1	2.7	0.8	0.0	2.3
105	White	887	25772	32522	49	59231	5.4	10.5	28.3	1.1	15.5

Figure 15

Graphs for possible use:

Highest qualification awarded in the field of Education [n=610261]

