

THE CHALLENGES FACED BY EDUCATION IN SOLVING THE UNEMPLOYMENT PROBLEM IN SOUTH AFRICA

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Abstract

This study is based on a meta-interpretive research design aimed at finding possible answers to an enduring dilemma facing South Africa. South Africa has one of the highest unemployment rates in the world, higher even than those of most of the emerging economies. The structural analysis of unemployment in South Africa presented in this article suggests the existence of an extremely high incidence of youth unemployment, in an environment where certain high level skills are in short supply. The author first analyses the structural nature of the unemployment problem in South Africa and then posit the conundrum of unemployment amidst a serious skills shortage. The skill shortage is discussed in terms of some of the current and projected needs of the economy. The question arises as to why education cannot produce the type of skills needed in the quantity and quality expected to satisfy the needs of the economy and thereby aid economic growth and development. To answer this question, the author analyses the education system pointing out certain systemic problems that work against the production of the kind of skilled workers of the quality and quantity needed. He starts by showing the poor literacy and numeracy levels of primary school children compared to children in other countries. Secondly, the author shows how large numbers of learners drop out of the school system and how those who complete the twelve years of schooling end up with low achievement levels in the subject areas that could have offered them the skills and knowledge to capitalize on the skills shortage. Finally, he looks at the post-school system and its failure to produce the required high level skills. Based on the analysis presented, the author comes to the conclusion that education in its current shape and form will not solve the unemployment problem in South Africa.

Key words: education, human resource development, quality education, skills shortage, unemployment.

Introduction

Most people believe that education leads to development. Informing this belief is the assumption that quality education is crucial to the acquisition of cognitive and technical skills required for development. Those who subscribe to human capital theory, for example, argue that education increases the efficiency and productivity of workers and that this, in turn, leads to development (Yih-Jin Young, 2002, Hanushek and Woessmann, 2008). By implication investment in human capital is regarded as a key element in long-term sustainable economic growth (Benavot 1989, Yih-Jin Young, 2002, World Bank, 1989; UNESCO, 2005, Hanushek and Woessmann, 2008). Using these human capitalist tenets as basis for decision-making, many developing countries have allocated large portions of their national budgets to education. Not all of them have, however, benefited from the kind of development supposed to flow from such investment (World Bank, 2010). The absence of expected benefits, according to world system and dependency theories, could be ascribed either to the fact that these countries focused primarily on the export of raw materials and lightly processed goods, or to their absolute dependence on imported technologies and manufactured goods. This is the case in many sub-Saharan African countries and, according to Bornschier (1980, 1983) and others (Delacroix and Ragin 1978;

Wallerstein, 1995), it is factors like these that constrain long-term economic development and contribute to the underdevelopment of the countries concerned.

South Africa is a case in point. Basing her educational agenda, such as the Millennium Development Goals, on the tenets of human capital theory, South Africa has, like many developing countries, invested heavily in education over the last decade (between 5.3% and 5.5% of the GDP for the period 2009-2010) (World Bank, 2010). If, as human capital theorists argue, there is a direct relationship between education and development, this investment should not only have yielded real economic growth but unemployment rates should have dropped. This has not, however, happened: South Africa has one of the highest unemployment rates in the world, higher even than in most of the emerging economies. Notwithstanding her huge investment in education, the development she so strongly desires has, to a large extent, not taken place. The question is, “Why can South Africa not turn around the tide of unemployment despite having invested so much in education?” The main research question asked is: “Why does education fail in addressing the unemployment and skills shortage problem?” To answer this question the education system and the extent to which it has succeeded in producing human resources with relevant secondary and higher education qualifications will be analysed.

Research Methodology

The research is based on what Weed (2005) refers to as a meta-interpretive design. Meta-interpretive designs are by nature not only inductive and iterative but allow researchers to focus on a research area rather than on a research question. Having identified the area, researchers working with a meta-interpretive design would then, with the appropriate theoretical sensitivity, select a range of contrasting studies relevant to their identified research area (Glaser, 1978). Not only does the integration of findings from contrasting studies and/or diverse fields yield new understanding of a phenomenon (Weed, 2005) but it also results in a more comprehensive review of the area under investigation than would otherwise be possible. Should the number of studies be overwhelming though, researchers have access to a range of criteria that can be used to reduce the number of studies to be included as part of the analysis.

The area/field of research chosen could be broadly defined as ‘*the link between education and employment*’. A whole range of documents, all dealing with unemployment, skills needs and education performance in South Africa over the past decade, was considered for inclusion in this study. These included official reports, articles, papers and statements. The vast number of documents available necessitated a reduction in the number of texts to be selected for inclusion provided that exclusions did not in any way compromise the accommodation of as broad a spectrum of views on these issues as possible.

Texts selected for the first round of analysis enabled the researcher to identify past, current and emerging trends in the areas being researched. Excluded texts typically fell outside the margins of the current synthesis or were deemed to be informed by questionable research. A number of texts were, however, added to the initial list, primarily because they addressed issues emerging from the initial analysis. Typical of iterative research, such additions support Glass’s argument (in Bangert-Drowns, & Rudner, 1991: p1) that a “...*literature review should be as systematic as primary research and should interpret the results of individual studies in the context of distributions of findings, partially determined by study characteristics and partially random.*”

The first analysis typically focuses on “meaning in context”, and involves the concurrent thematic and contextual analysis of all the texts included in the study (Weed, 2005). In this study the complete data set (i.e. not only initial but also subsequent texts) served as basis for the subsequent meta-interpretation, which involved both contextual and thematic analyses. Data on unemployment and the skills shortage are presented first; data on the type of workforce

emerging from the education system second. A comparison of the two data sets is then used to highlight the apparent paradox emerging from the data. The possible reasons for the existence of the paradox are then explored, with specific reference to the analysis of education data. It is from this exploration that conclusions are drawn.

An Analysis of the Unemployment Problem in South Africa

It is often argued that the South African poverty and inequality problem is rooted in the *nature* of unemployment, which tends to be structural. Structural unemployment, according to Terreblanche (2002) refers to the inability of an economy to provide employment. In South Africa, for example, the average annual GDP growth rate has exceeded 4.5% since 2000, although it has recently slowed down due to the global recession. Growth in the economy (5% per annum during the period 2003-2008, the highest to date) has, however, not resulted in significant job creation (Department of Science and Technology, 2011). In fact, over the past decade job creation has averaged at 0.5% per year, with approximately 624 000 new jobs having been created (Stats SA, 2010; Holborn, 2012). In addition, in 2010, 833,000 South Africans lost their jobs, with the official unemployment figure being estimated at 25% (Stats SA, 2010). In recent times it has slightly dropped to about 23 % (Stats SA, 2012). What is a matter of concern, though, is that an analysis of the unemployment rate per age group indicates that it is highest amongst the youth (Figure 1) and also higher than many of the comparable developing economies (Figure 2).

The results of an analysis of youth unemployment by National Treasury (2011) indicate that:

- Approximately 42% of people under the age of 30 are unemployed compared to less than 17% of those over 30 (See Figure 1).
- Only 20% of the workforce younger than 25 are employed compared to 40 per cent in most emerging economies (see Figure 2).
- Employment of 18 to 24 year olds has fallen by more than 20% (320 000) since December 2008.
- Unemployed young people tend to be less skilled and inexperienced – almost 86% do not have formal further or tertiary education, while two-thirds have never worked.

Even though the picture presented by the data in Figure 1 may be somewhat skewed if one considers that a large proportion of those in the age group 15-24 may still be enrolled at schools or other training institutions, the rates remain extremely high, much higher than those in many emerging countries (see Figure 2).

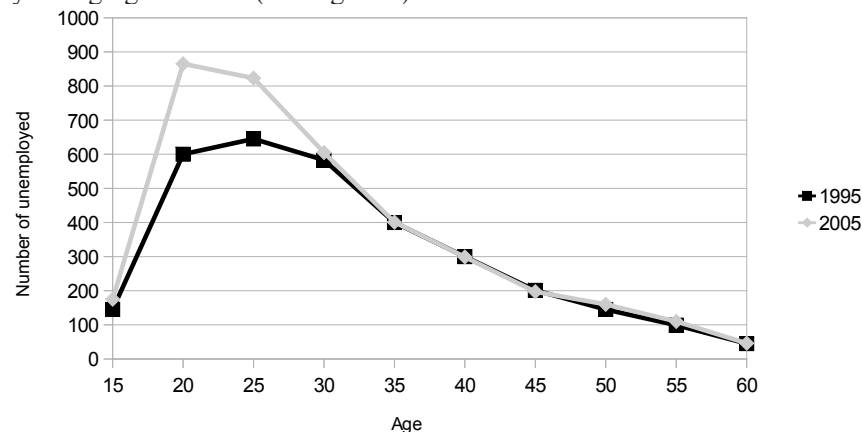


Figure 1: Unemployment in South Africa according to age distribution (1995 AND 2005).

(Source: Adapted from Borhat (2005) *Unemployment in South Africa*)

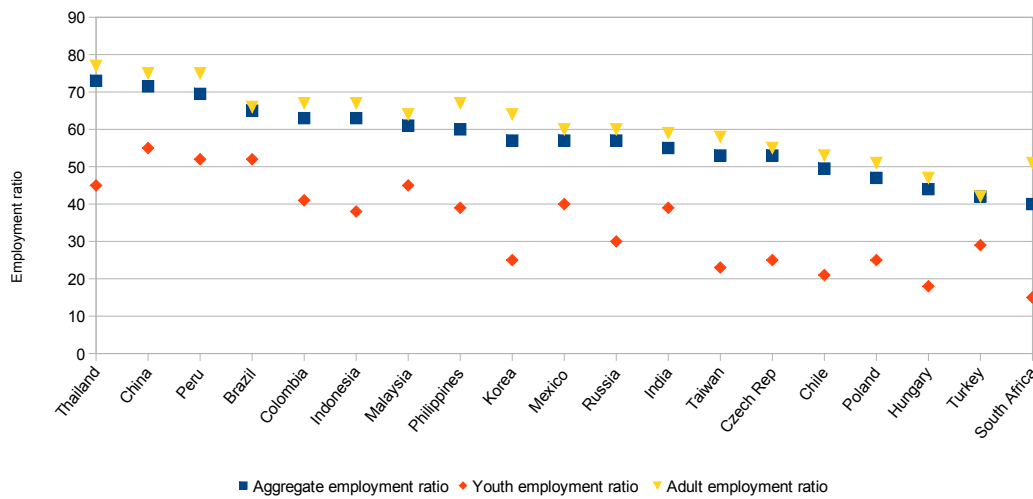


Figure 2: Comparative analysis of unemployment across a number of countries.

(Source: Adapted from ILO (*Key Indicators of the Labour Market*, 6th Ed.), and Statistics South Africa *Quarterly Labour Force Survey*, June 2010)

What is most perplexing is that South Africa, while experiencing such a high unemployment problem, is simultaneously experiencing a skills shortage (FW De Klerk Stigting, 2005; Hanrahan, 2006; SAICA, 2008; Faurie, 2010; Sharp, 2011). Many economists agree that this skills shortage imposes a significant constraint on the long term outlook for economic development (Sharp, 2011). Consequently, many high skill functions are often utilized inconsistently and inexpertly (SAICA, 2008). In 2006, for example, the South African Institution of Civil Engineering reported that 79 of South Africa’s 231 local municipalities did not have a single engineer, technologist or technician (Solidarity, 2009) at their disposal. Since then the situation has worsened, as is evidenced by on-going service delivery unrest in many municipalities (Brooks, 2009; Karamoko, 2011).

That South Africa is failing to address this challenge is clear if one considers the disjuncture between supply and demand in this regard: the country produces approximately 1 400 engineering graduates every year, while actual needs indicate at least 2 400 are needed each year (Hanrahan, 2006). Aggravating the skills shortage is the continued brain-drain, a phenomenon which started at the turn of the century and peaked around 2005, when a very small percentage (15 %) of South Africa’s mining engineering graduates entered into employment in South African mines; the majority found lucrative employment abroad (Hanrahan, 2006). The tide seems to have turned since 2009, however, with many graduates and professionals returning from overseas (Times, 2010). Even so, the loss of skilled workers and professionals remains unacceptably high (Faurie, 2010).

Based on information provided by various sectors in the economy, indications are that the skills shortage cuts across the whole spectrum of the economy. The firm Deloitte & Touché (2007), for instance, claim that 81% of companies struggle to find appropriate staff, with 76% of these highlighting the availability of employment equity candidates as a particular problem. The survey noted that there was a particular shortage of chartered accountants, IT specialists, sales and marketing personnel and scientists. Erasmus & Breier (2009), supporting these findings, indicated a shortage of between 350 000 and 500 000 people who had the requisite qualifications to fill managerial and technical positions. Similar findings also emerged from an analysis done by Iraj Abedian of Standard Bank, who indicated that there were at least

300 000 vacancies for skilled workers in the private and public sector (FW De Klerk Stigting, 2005), as well as by the Department of Health and Netcare, which estimated the existence of between 28 000 and 30 000 vacancies for nurses in the public and 5 000 in the private sector. The trade union, Solidarity, arguing that South Africa currently has 10% of the artisans it had 20 years ago, claims that the country now has a 40% shortage of artisans. In 2006, according to Solidarity (2008), there were 3 400 apprentices in training in the metals industry, compared to nearly 13 000 in 1982. Recently various companies, like Eskom and Sasol, had to import welders from Thailand, Malaysia, Ireland and India to perform construction and maintenance work (Webb, 2006; Mokopane, 2010). Finally, according to the Adcorp Employment Index (Sharp, 2011) there were 829,800 unfilled positions for high-skilled workers across a wide range of occupations - senior management, the professions (medicine, engineering, accounting and the law), technical occupations (specialized technicians and artisans), and agriculture in South Africa in 2011.

The skills shortage could also be considered in terms of a country's ability to produce new technologies and/or innovations that could stimulate development and job creation. International experience has, for example, demonstrated how crucial it is to establish links between investments in research and development (R&D), innovation, economic growth and development. Advanced economies typically rely on sustained investment in these areas to maintain their long-term growth and development, and many have recently prioritised R&D and innovation as part of their recovery plans from the 2008-2009 global economic crisis (Department of Science and Technology, 2011: p5). Emerging economies such as China, India and Brazil are reaping the benefits of their innovation-driven policies and investments of the past decade (Ibid.2011). Contrary to this, in South Africa, where there has been steady growth in R&D expenditure over the past decade, the overall intensity of R&D intensity has remained relatively low (Ibid, p5). Not only have R&D investments in South Africa grown at a slower rate than its GDP growth but their intensity is also lower than the average R & D intensity of the OECD and European Union (EU) (Ibid, 2011).

One of the outflows expected of R&D investment is the creation of new technologies. Although patent activity has increased marginally, the number of South African patents accepted by the United States Patent Office (USPTO) has declined from 111 between 2001 and 2004 to about 92 between 2005 and 2008 (Ibid, p21). It would therefore be fair to say that South Africa seems to be saddled with a lack of research capacity. In order to ensure that the country stays competitive in the global knowledge economy, according to Van Jaarsveld (2007), South Africa has to produce approximately 6 000 Science and Technology PhD graduates per year. The country currently produces approximately one-fifth of that number.

To summarise: Why does structural unemployment in South Africa persist at such high levels? Some of the reasons typically proffered are:

- The worldwide economic recession and the debt burden of European countries that affected South Africa's export market stunted local economic growth (Arieff, Weiss and Jones, 2010). Moreover, the volatile international trade environment has also led to companies avoiding new capital projects and ventures that could have facilitated growth in the employment sector.
- The growth in non-traditional sectors of the economy, like manufacturing and tourism, at the expense of primary sectors (particularly agriculture and mining) occurred at a rate that outstripped the country's capacity to retrain the workforce so that they are able to deal with new demands (Department of Trade and Industry, 2011).
- The imposition of minimum wages agreed on by the government and organized labour, which inhibits employers from hiring employees at rates acceptable to both parties (National Treasury, 2011, Bhorat, 2007).

- Labour Laws that overprotect employees, making the hiring of new staff a less attractive option (Bhorat & Cheadle, 2007: 11).
- Unskilled, inexperienced jobseekers whose employment is, according to the National Treasury (2011), considered to be a risky investment: employers look for workers with skills and experience.

Against the background of these facts it would be unreasonable to lay the blame for the continuing unemployment problem in South Africa at the door of education alone. That it contributes to the problem is, however, not denied as is pointed out in the discussion that follows.

The Failures of Education

In South Africa, education is compulsory from kindergarten (called Grade R) to Grade 9. Data released by the Department of Basic Education indicate that South Africa has already achieved the Millennium Development Goals in terms of universal basic education, both in terms of total learner enrolments and in terms of gender equality (DoE, 2009b). This figure, however, could be regarded as misleading, though, since the numbers are inflated by over and under-aged enrolments in schools.

In 2003, there were 26 845 ordinary schools (inclusive of public and private schools) with a total enrolment of 12 038 922 learners, and 362 598 practicing teachers (DoE 2005). In 2009 number of ordinary schools decreased to 25 876 even though the number of enrolled learners (12 214 845) and ordinary school teachers (411 164) increased. Implied in these figures are the closure of smaller schools and changes to learner/educator ratios of 32.6 in 2009. Of these learners 9.6 million were enrolled in the compulsory (general education) band (Grade R - Grade 9) and 2.4 million in the optional, further education and training, band (Grade 10-12).

One way of analysing the performance of an education system is to analyse learner progress through the schooling system. An analysis of the through-flow rate in the South African education system yields disturbing data. In 1995, when the 2007 Grade 12 group entered Grade 1, the total enrolment was 1.53 million. Of these, only 599 000 (39% of the Grade 1 total) reached Grade 12 twelve years later. In 1996, 1.54 million children entered Grade 1. In 2008, when they should have been in Grade 12, this number had dropped to 592 000 (36% of the original group).

Another way of analysing systemic performance is to compare Grade 1 and Grade 12 enrolments. Data collected by the Department of Education (2009a) (see Figure3) indicate that while 9.0% of the total number of learners enrolled in Grade 1, only 4.9% were enrolled in Grade 12, with Grade 11 emerging as one of the main exit points from the schooling system. One of the possible explanations for this is the value that schools attach to Grade 12 pass rates, i.e. a maximum pass rate in the Grade 12 national (Senior Certificate) examinations. Because of this, so it seems, learners who are at risk of not passing Grade 12 are 'weeded' out of the system at the end of Grade 11. These learners will therefore not be able to continue with post-school education and will probably join the ranks of the unemployed and/or get involved in gangs and criminal activities (Panday, 2008). According to the Centre for Development and Enterprise (2008), 65% (i.e. 2,6million of the 4 million) youngsters between the ages of 15 and 24 who could have been employed were, in fact, unemployed. The majority of these were also school drop-outs.

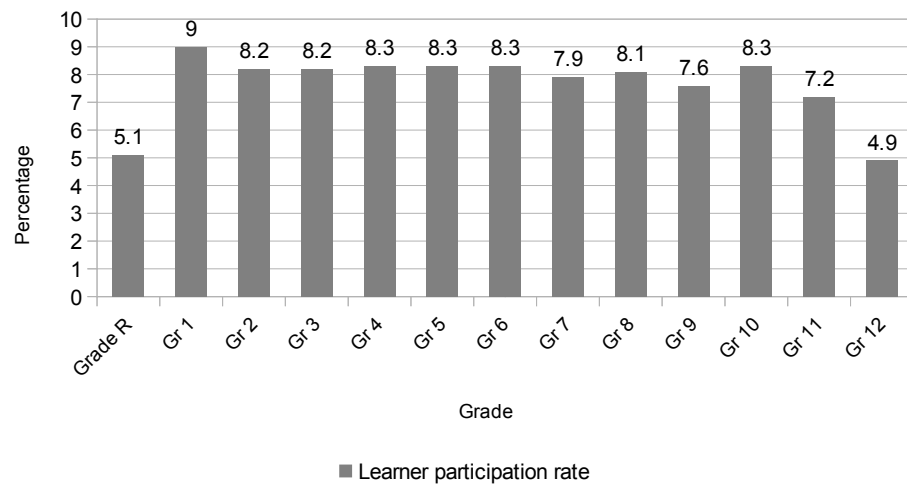


Figure 3: Learner participation in the education system (2008).

(Source: Department of Education, 2009a).

Learner throughput and output is but one indicator of systemic effectiveness. A second, very important indicator is the quality of education being provided. In this regard two aspects (literacy and numeracy and learner performance in the system) will be looked at.

A person who is functionally literate has by definition mastered the basic writing, reading and numeracy skills that enable him/her to perform those functions necessary for entry into low level employment (Zimmerman, 2010). In a developing country functional literacy is assumed if a person has completed at least Grade 7 or 8. Given that, according to the statistics cited earlier, the majority of school drop-outs in South Africa leave the system during, or at the end of their Grade 11 year, one would assume that all of them would be functionally literate and, by implication, suitable for employment, albeit in relatively low level jobs. This does not seem to be the case, though.

Numerous studies have revealed that South African learners perform worse in international literacy and numeracy tests than their counterparts in Africa and the rest of the world. Tests conducted by the Southern Africa Consortium for the Monitoring of Quality Education (SACMEQ) in 2000 in 11 African countries indicated that the reading comprehension and mathematical performance of Grade 6 learners in South Africa was the third lowest (Moloi & Strauss, 2005). Moreover, the 2004 Institute for Justice and Reconciliation Transformation Audit found that the performance of South African learners compared poorly with even poorer countries, i.e. with countries where the expenditure on education was much less per learner than in South Africa. The 2005 SACMEQ study yielded much the same results, with South African learners' performance in Mathematics being worse than that of learners in countries like Mozambique, Kenya, Tanzania, Botswana and Swaziland (see Table 1).

A comparison between South Africa and countries outside of Africa paints an even more perturbing picture. In 2006, the performance of Grade 4 and 5 learners from South Africa who participated in the *International Progress in International Reading and Literacy Study* (PIRLS) placed them at the bottom of 45 countries (DBSA, 2010, p17). Indications are that 80% of the learners tested did not achieve the international reading literacy benchmark. This was confirmed in a report released by the Department of Education (2008). Focusing on the performance of Grade 3 and 6 learners in a national examination, this report revealed that eight out of ten learners had mastered less than 50% of the mathematics and language skills expected of learners in their respective age groups. The 2003 Third International Mathematics Science Study (TIMSS) results were much the same: the national average score for Mathematics was

264 compared to the international average of 467 while the Science score was 244 compared to the international average of 474 (Reddy, 2006).

Table 1. SACMEQ II: Average Performance in Mathematics Tests (2006) (Quintile and Country)

Quintile	1	2	3	4	5	Average	Position
Botswana	491	499	510	508	557	513	5
Kenya	540	545	555	565	611	563	2
Lesotho	443	448	448	445	452	447	
Malawi	422	427	435	433	447	433	
Mauritius	519	564	587	620	640	584	1
Mozambique	526	525	531	530	538	530	3
Namibia	403	402	411	425	513	431	
Seychelles	520	541	555	576	579	544	
South Africa	442	445	454	491	597	486	8
Swaziland	506	511	511	513	541	517	5
Tanzania	484	511	529	528	560	522	4
Uganda	484	497	498	509	543	506	7
Zambia	414	425	436	434	466	435	
Zanzibar	478	472	478	479	484	478	
Mean	468	480	485	492	560	468	

(Source: SACMEQ II Study, 2005).

Commenting on these trends, Graeme Bloch (2010: p5) mooted that, “*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. For a majority, lack of quality education dooms them to marginalisation and exclusion from the schools, universities and colleges that should give them access to a better life.*”

Given the poor literacy and, in particular, poor mathematics performance of South African primary school learners, performance at secondary school level may also be inadequate. Also, since many secondary school learners' aspirations include their gaining access to university studies, this is a matter of concern since mathematical proficiency is one of the university entrance determinants. Consider the following analysis of Senior Certificate (Grade 12) results, for example. Of the total number of 495 408 learners who wrote the Senior Certificate exam (SCE) in 1994 only 88 497 (18%) qualified for university entry. In 1999, the number of candidates passing with a university entrance endorsement dropped to 12% and by 2007 the number grew to 15.1% which was still below the 18% achieved in 1994 (Nieuwenhuis, 2010). Inequalities between the various race groups are also stark. Although 71% of all the Grade 12 learners who sat for the Senior Certificate examinations in 2003 were black, only 5.2% of them (i.e. of the 71%) passed with university exemption while 35.9% of their white counterparts obtained university exemption passes (Van den Berg, 2004). The requirements for university entrance, however, needs to be narrowed down to key subjects to gain a better understanding of the how the education system is short-changing the country.

It might be argued that the relatively low percentage of university exemptions is the result of systemic changes, more specifically the elimination of the distinction between higher

and standard grade subjects. To clarify, prior to 1994 and up to 2007, secondary school subjects (Grade 10-12) in South Africa were offered at both a higher and standard grade level, with learners intent on gaining university entrance having to offer a minimum of four subjects at the higher grade). Over a period of 16 years, until the discontinuation of this system in 2008 (Ndlovu, Sishi & Deliwe, 2008), less than 7% of the candidates who sat for the Senior Certificate examinations passed the higher grade mathematics paper (Centre for Development Enterprises Survey, 2008) and between 1999 and 2004 an average of 4.4% of all Grade 12 learners passed mathematics at a level that satisfied university entrance requirements in the fields of engineering and the physical sciences (Van den Berg, 2004). The total percentage of learners that passed Mathematics on either the higher or standard grade was 27% in 2002 and the corresponding percentage for Science was 22%.

In 2009, the first year after the higher/standard grade division was removed, 21.2% of the Senior Certificate candidates who wrote Mathematics scored above 50%, while only 14.9% scored above 50% for the Physical Sciences examination (Department of Basic Education, 2010). In 2010, the Mathematics pass rate was 47.4% and the Science pass rate 47.8% (Department of Education, 2009b). The results for the 2011 examinations were very similar. The Mathematics average achieved by the 224 874 learners who wrote the Senior Certificate Examination was 29, 1% and that for Physical Science (written by 180 746 candidates) 32, 48% (Rademan, 2012). On the surface this looks like an improvement but, although the picture appears favourable, a finer analysis points to the contrary. According to Mukadam (2009), “... *the final examination in Mathematics was watered down and has therefore widened the gap between school and university for the top learner. The type of questioning was unchallenging for talented and competent learners and if this standard is going to be used as a benchmark for future examinations, it will not adequately prepare young learners to study Mathematics related courses at university level.*” Even so, 59, 22% of the SCE candidates failed Mathematics, and 53, 41% failed Physical Science, indicating persistent low levels of performance in both these areas.

Nieuwenhuis (2009), who did a cohort analysis of learners who started their school careers in 1996 found that of the 1.54 million learners enrolled in Grade 1 in 1996 only 592 000 (36%) reached Grade 12 in the minimum 12 years required to do so, i.e. in 2008. Of those who reached Grade 12, only 334 000 (21.6%) of the original Grade 1 enrolments *passed* Grade 12. Of those who passed in 2008, only 63 000 passed Mathematics, with only 25,500 of these having written Paper 3 (the Geometry examinations paper) and a mere 50% of these who wrote this paper passed it. However, their real assessment will be in the optional Paper 3 which is not compulsory for learners. Learners with higher mathematical ability would write Papers 1 and 2 (Algebra) & Paper 3 (Geometry). Without Geometry a student cannot gain entry into the physical sciences, engineering, or medical science programmes at universities. It is interesting to note that 93% of the 25 500 learners came from 21% of the secondary education schools. Put differently, 21% of the secondary schools are supplying universities with the pool of graduates from which the engineers, medical professionals, architects, chartered accountants and physical scientists will be drawn. Because this base is so small universities are forced to design remedial strategies to broaden the base from which they can draw prospective students. This trend appears to be persistent and is also reflected in the results of other years. Even if the total number of learners who sat for their Grade 12 examinations (irrespective of subject choice) were considered for university entrance, 85 percent of senior certificate holders would not satisfy the minimum criteria for enrolment into undergraduate programmes (DST, 2011, p18).

Enrolments at university level continue to increase on a year to year basis. In part this is the result of a system where students can either enrol for university diploma courses that require less stringent admission requirements or get provisional admission on condition that they

pass certain modules during the first year. The growth in university enrolments is particularly evident amongst black students. In 1993, 191 000 black students enrolled in universities and technikons. By 1999 the number had grown to 343 000 and in 2003 to 449 000 (Jansen 2004; DoE 2005). This upward trend has not changed, and in 2011 black enrolments stood at 899 000. Similarly, the number of black university graduates has increased from 37% of the total number of graduates in 1992 to 53% of the total number of graduates by 2001. This growth in student enrolments and graduates is, however, not always in the fields where there is a demand for high level manpower. In fact, in 2001, only 26% of students were enrolled for studies in engineering, physical sciences and technology (Viljoen, 2006).

It could be argued that university education should never be the main or only avenue open for students exiting the school system. Modern economies need a vibrant and effective post-school education system separate from the university sector, a post-school system that can produce vocationally-oriented education and training programmes. In a Green Paper released by the Department of Higher Education at the start of 2012, it is confirmed that two of the main problems of the post-school sector in South Africa are its lack of diversity and the weaknesses of many of its institutions (DHET, 2012: p8). The result is that very few educational opportunities are available to adults and young people who leave school early, who fail to obtain a National Senior Certificate, or who do not satisfy the admission and/or selection criteria of higher education institutions. The report further states that there are approximately three times as many students entering university each year than there are students entering colleges. This “inverted pyramid” is a major problem for the education system as has been pointed out on numerous occasions in the past.

In 2010, the total headcount enrolment in the National Certificate (Vocational) (NCV) and non-Department of Higher Education and Training programmes (i.e. Sector Education and Training Authorities accredited programmes) was 326 970 students (Ibid, 2012: p 8), compared to almost 900 000 in universities. Artisan training has declined since the late 20th century and was at an all time low in the early part of the 21st century. The Green Paper referred to in the previous paragraph claims that this kind of training is only now beginning to grow again. Colleges are playing their traditional role in offering the theoretical component of apprenticeship programmes, but the curricula of these programmes have not yet been sufficiently updated and improved. As indicated in the Joint Initiative on Priority Skills Acquisition (JIPSA) (2010: p15), which gives an indication of the number of artisans being trained and the proposed number that needs to be trained to meet the needs of the economy, the disjuncture between supply and demand is still present. The Green Paper argues that part of the problem is the lack of capacity at vocational education colleges and part of it is due to a lack of available funding for students to access these opportunities (DHET, 2012: p9).

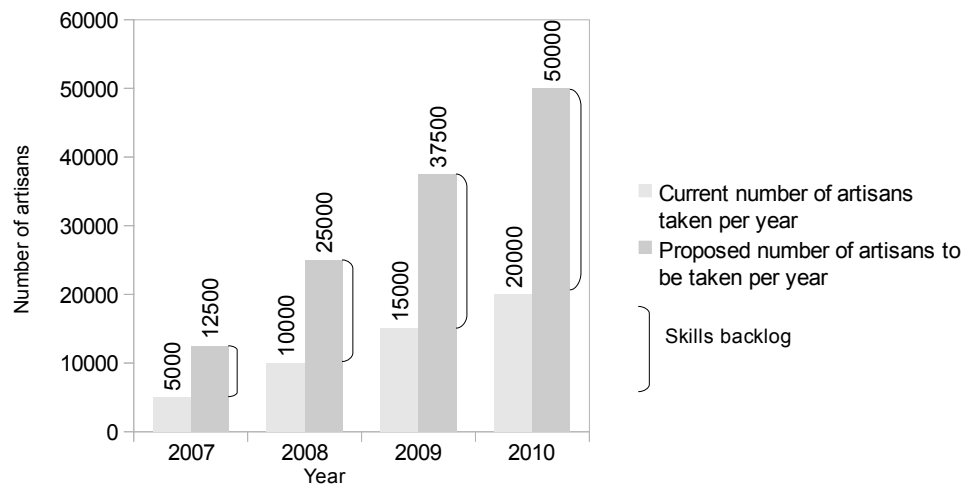


Figure 4: Proposed increase in the number of artisans (2007-2010)

(Source: JIPSA, 2010).

In recent times there has been a growing acknowledgement by government of the systemic challenges it is facing as is evident from the plethora of strategic plans and policies that have been developed in this regard since 2010. These include the:

- Human Resource Development Strategy 2010-2030 (Centre for Higher Education Transformation, 2009) focusing on the development of the human resources of the country.
- Strategic Plan: 2010-2013 launched by the Department of Basic Education (2010) that focuses primarily on schools in order to achieve the goal of a quality basic education system.
- 10-point Plan for Higher Education (DBSA, 2010) aimed at strengthening higher education.
- National Development Plan of the National Planning Commission (2011), which sets out the goal of creating a country where the capabilities of citizens are developed to grasp the opportunities that exist.
- National Treasury 2011 Budget Review (2011), which focuses on the allocation of more funds for job creation.
- Ministry of Finance Statement on the Job Fund Launch (2011), aimed at supporting other national initiatives for job creation such as enterprise development, infrastructure investment, and institutional capacity building.
- The Green Paper on Post-School Education and Training (DHET, 2012), which focuses, amongst others, on strengthening the post-school education sector lying outside the higher education sector.

These are all expansive documents laying out the government's intentions to solve the education and unemployment crisis, but turning plans into reality will always remain an enormous challenge. In this regard Van Den Berg (2003, 2006) moots that, even if we were to effectively address the systemic problem immediately, the backlog in well-trained quality human resources will remain with us for a long time. Any benefits derived from a change in the

education system, whether it focuses on improving literacy levels or the quality of Mathematics and Physical Science, will take at least another decade before the results will be visible in the economy and the labour market. It is thus clear that education in its present shape and form cannot solve the unemployment problem of South Africa.

Conclusion

From the analysis presented it is evident that South Africa needs to urgently adopt an approach that will turn the tide on unemployment and the lack of high level skills. Four strategies could possibly be adopted. In the first place, citizens need to realise that the challenge is not only the responsibility of the state to find solutions. As citizens in a free-market democracy citizens have the responsibility to participate in the education discourse and assist in seeking solutions with the state. As long as parents and learners remain silent and unstrained by the poor quality of education they will continue to be short-changed by the education sector. At grassroots level, people need to challenge schools to offer them what they deserve: quality education. Secondly, the crisis should be tackled where the greatest benefits will be reaped in the short to medium term, and that implies addressing the literacy and numeracy challenge. South Africa needs to ensure that the quality problem is fixed where it starts. Thirdly, South Africa must seriously address the quality of our teachers and their commitment to teaching. Too many are not adequately trained to teach the subjects or level at which they are employed. The unionization and politicisation of the trade union movement is acting in a counter productive manner in addressing the challenges faced in education. Fourthly, we need to address the leadership problem in education. Over the last fifteen years a lot of emphasis was placed on the training and development of school leaders, but this should also be extended to senior management in the national, provincial, and at district level so that support to schools become more effective. Linked to this is the elimination of corruption at these levels.

Finally, it is accepted that education is too important to be left to educationists alone, but education should not be used as a political tool to only drive particular transformation agendas. South Africa must restore faith in the education system to achieve long term goals. Too many people are disillusioned by the failure of the system over so many decades to deliver on the promises of a better future.

References

- Arieff, A., Weiss, M. A., & Jones, V. C. (2010). *The Global Economic Crisis: Impact on Sub-Saharan Africa and Global Policy Responses*. Congressional Research Service. Retrieved February 10, 2012 from <http://www.fas.org/sgp/crs/row/R40778.pdf>.
- Altman, M., & Woolard, I. (2004). *Employment & unemployment trends in South Africa 1995/2002*. April 2004. Pretoria: Human Sciences Research Council.
- Bangert-Drowns, Robert L., & Rudner, Lawrence, M. (1991). Meta-analysis in educational research. *Practical Assessment, Research & Evaluation*, 2(8). Retrieved January 31, 2012 from <http://PAREonline.net/getvn.asp?v=2&n=8>
- Benavot, A. (1989). Education, gender, and economic development: A cross-national study. *Sociology of Education*, 62 (January), 14-32.
- Bhorat, H., & Cheadle, H. 2007. *Labour reform in South Africa: Measuring regulation and a synthesis of policy suggestions*. Retrieved February 10, 2012 from www.labour.gov.za/.../Labour%20Reform%20in%20South%20Africa-%20bhorat%20-%20cheadle%20.pdf.
- Bloch, G. (nd.) *Building education beyond crisis*. Retrieved March 23, 2010 from <http://building%20education%20beyond%20crisis>.
- Bornschiefer, V. (1980). Multinational Corporations and Economic Growth: A Cross-National Test of the Decapitalization Thesis. *Journal of Development Economics*, 7, 191-210.

- Bornschieer, V. (1983). World Economy, Level of Development and Income Distribution: An Integration of Different Approaches to the Explanation of Income Inequality. *World Development*, 11 (1), 11-20.
- Brooks, C. (2009). SA hit by service-delivery protests. *Mail & Guardian*, July 22, 2009.
- Centre for Development and Enterprise. (2008). *South Africa's 'Door Knockers': Young people and unemployment in metropolitan South Africa*. Johannesburg: CDE.
- Centre for Development and Enterprise (2009). *International best practice in schooling reform: What can South Africa learn from other countries?* Edited proceedings of a workshop held in Washington, DC, on 1 and 2 December 2008.
- Centre for Higher Education Transformation. (2009). *Human Resource Development Strategy for South Africa (2010-2030)*. Retrieved on March 17, 2011 from http://chet.org.za/manual/media/files/chet_hernana.../HRDS-SA.pdf.
- Delacroix, J., & Ragin, C. (1978). Comparative advantage, the world division of labor and underdevelopment: a cross-national study. *Comparative Social Research*, II, 181-214.
- Deloitte, & Touché (2008). *International Talent Pool to Alleviate South Africa's Skills Shortage*. Retrieved on March 14, 2009 from www.deloitte.com/42916718f610e110VgnVCM100000ba42f00aRCRD.htm.
- Department of Basic Education (2010a). *Strategic Plan 2010-2013*. Pretoria: DoE.
- Department of Basic Education (2010b). *Report on the National Senior Certificate Examination results*. Pretoria: DoE.
- Department of Education (2005). *Annual Report*. Pretoria: DoE.
- Department of Education (2008). South Africa: National report on the development of education. *48th International Conference on Education* 25-28 November 2008. Retrieved on November 24, 2010 from <http://www.education.gov.za/LinkClick.aspx?fileticket=pDi1GlhSxmc%3d&tabid=358&mid=1300>.
- Department of Education (2009a). *EMIS data*. Pretoria: DoE
- Department of Education (2009b). *Education realities*. Pretoria: DoE
- Department of Higher Education and Training (DHET). (2012). *Green Paper on Post-School Education and Training*, Notice 11 of 2012. Pretoria: Government Printer.
- Department of Science and Technology (DST). (2011). *Enhancing the National System of Innovation to support growth and development: A strategy to increase R&D investment in South Africa*. Pretoria: DST.
- Department of Trade and Industry (2010). *A national industrial policy framework*. Retrieved on February 7, 2012 from <http://www.trevenna.net/nipf/niPF-3aug.pdf>.
- Development Bank of South Africa (DBSA) (2008). *Education Roadmap Focus on schooling system*. November 2008. Midrand: DBSA.
- Development Bank of South Africa (DBSA) (2010). *10-point Plan for Higher Education Skills for inclusive growth: Towards a long-term strategy for higher education and training*. Midrand: DBSA.
- Erasmus, J., & Breier, M. (Eds). (2009). *Skills shortages in South Africa: case studies of key professions*. Cape Town: HSRC Press.
- Faurie, J. (2010). Skills shortage to be more acute by 2010. *Mining Weekly*, 12 March 2010.
- Hanrahan, H. (2006). *Developing Engineering Qualifications within the South African NQF: a View from ECSA*. Retrieved on January 2, 2012 from http://www.saqqa.org.za/saqqa_extra/docs/events/q_africa07/presentations/hanrahan_h1.pdf.
- Hanushek, E. A., & Woessmann, L. (2008). The role of cognitive skills in economic development. *Journal of Economic Literature*, 46 (3), 607-668.
- Holborn, L. (2012). *South African Institute for Race Relations questions state jobs target*. Retrieved on January 12, 2012 from <http://SAIRR%20questions%20state%20jobs%20target%20%20Fin24.htm>.

- Howie, S., Venter, E., van Staden, S., Zimmerman, L., Long, C., Scherman, V., & Archer E. (2007). *PIRLS 2006 Summary Report: South African children's reading achievement*. Pretoria: University of Pretoria. Centre for Evaluation and Assessment.
- Institute for Justice and Reconciliation (2004). *Transformation Audit: Education and socio-economic status in South Africa*. Retrieved on July 13, 2007 from <http://www.transformationaudit.org.za/economic-transformation-audit/ta-archive/2004-transformation-audit/>
- International Labour Organization (ILO). (2006). *Key indicators of the labour market*. (6th Edition). Washington: ILO.
- Jansen, J. (2004) *Educational Change in South Africa, 1994-2003: Case Studies in Large-Scale Education Reform*. Country Studies, Education Reform and Management Publication Series. Washington: World Bank.
- Joint Initiative on Priority Skills Acquisition (JIPSA). (2006). Joint Initiative on Priority Skills Acquisition Report Mar - Dec 2006. Retrieved on August 15, 2007 from www.info.gov.za/otherdocs/2007/jipsarep.pdf
- Karamoko, J. (2011). *Community Protests in South Africa: Trends, Analysis and Explanations*. Retrieved on January 30, 2012 from <http://www.ldphs.org.za/news-and-events/trends-analysis-and-explanations-of-service-delivery-protests-in-south-africa>.
- Kingdon, G., & Knight, J. (2005). *Unemployment in South Africa, 1995-2003: Causes, Problems and Policies*. Global Poverty Research Group GPRG-WPS-010 January 2005.
- Ministry of Finance. (2011). *Statement on the Job Fund Launch*. Pretoria: Ministry of Finance.
- Mokopanele, T. (2010). Business may miss out on 2010 construction boom. *Business Report*. Retrieved on December 18, 2011 from <http://www.solidaritysa.co.za/Home/wmview.php?ArtID=316>.
- Moloi, M., & Strauss, J. (2005). *The SACMEQ II Project in South Africa: A Study of the Conditions of Schooling and the Quality of Education*. Harare: SACMEQ.
- Mukadam, A. (2009). Analysis of 2008 Grade 12 results. *Mathsexcellence*. Retrieved on January 12, 2011 from [Http://Maths%20Excellence%20%20Analysis%20of%202008%20Grade%2012%20Results.htm](http://Maths%20Excellence%20%20Analysis%20of%202008%20Grade%2012%20Results.htm).
- National Planning Commission (2011). *National Development Plan*. Pretoria: Government Printer.
- National Treasury. (2011a). *Confronting youth unemployment: policy options for South Africa*. Pretoria: National Treasury.
- National Treasury (2011b). *Budget Review*. Pretoria: National Treasury.
- Ndlovu, T., Sishi, C., & Deliwe, C. N. (2008). *A review of ten years of assessment and examinations*. Retrieved on October 10, 2010 from. www.hsrcpress.ac.za/downloadpdf.php?pdffile...01_Marking...pdf.
- Nieuwenhuis, F. J. (2010). *Education – A Pandora's box*. Presentation made at Seminar of the Department of Education Management and Policy Studies. Faculty of Education, University of Pretoria. Pretoria: 26 March 2010.
- Panday, S. (2008). School dropouts. *HSRC Review - Volume 6 (1) March 2008*: 1.
- PIRLS. (2006). *International Report, TIMSS & PIRLS*. International Study Center, Lynch School of Education, Boston College.
- Presidency (2010). *Development indicators*. Retrieved on December 12, 2011 from www.thepresidency.gov.za/.../Development%20Indicators2010.pdf.
- Rademan, A. (2012). Gr.12's + syfers = swak. *Beeld*, 9 February 2012: 8.
- Reddy, V. (2006). *Mathematics and Science Achievement in South African Schools in TIMSS 2003*. HSRC: Pretoria.
- SAICA. (2008). *The financial management, accounting and auditing skills shortage in South Africa*. Bruma Lake: SAICA.
- Sharp, Loane. (2011). *South Africa's extraordinary skills shortage – Adcorp Employment Index, April 2011*. Retrieved on February 1, 2012 from <http://www.adcorp.co.za/Industry/Pages/AEIMarch2011.aspx>.

- Solidarity (2008). *Skills Shortage in South Africa: Summary of facts per sector regarding this issue*. Pretoria: Solidarity.
- South African Institute for Race Relations (2012). *SAIRR questions state jobs target*. Retrieved on January 23, 2012 from <http://SAIRR%20questions%20state%20jobs%20target%20%20Fin24.htm>.
- Statistics South Africa (2010). *Quarterly labour force survey*. June 2010. Pretoria: Stats SA.
- Statistics South Africa (2011). *Quarterly Labour Force Survey: Quarter 3 (July to September), 2011*. Retrieved November 1, 2011 from http://www.statssa.gov.za/news_archive/17sep2004_1.asp (Accessed on 14 December 2011).
- Terreblanche, S. (2002). *A History of Inequality in South Africa, 1652-2002*. Pietermaritzburg: University of Natal Press.
- Times (2010). *South Africa's brain drain reversing*. 6 July 2010. Retrieved on July 10, 2010 from <http://South%20Africa's%20brain%20drain%20reversing%20-%20Times%20LIVE.htm>.
- TIMMS (2003). *International Mathematics Report*. TIMMS & PIRLS International Study Center, Lynch School of Education, Boston College.
- UNDP (2010). *Millennium Development Goals Country Report. South Africa*. Retrieved on January 12, 2012 from <http://www.undp.org.za/millennium-development-goals/mdgs-in-south-africa>.
- UNESCO (2005). *EFA Global Monitoring Report*. Paris: UNESCO.
- Van der Berg, S. (2003). Education: The Crisis in Schooling. *Taking Power in the Economy: Gains and Directions*. The Institute for Justice and Reconciliation: Economic Transformation Audit
- Van den Berg, S. (2004). Education. *Cape Times*, 27 February 2004.
- Van Jaarsveld, A. (2007). *SA needs more scientists*. Address to Johannesburg Press Club on 23 August 2008.
- Viljoen, C. (2006). *Die onderwyskrisis in Suid-Afrika ten opsigte van Wiskunde- en Wetenskaponderrig op skool: Die belangrikheid van moedertaal in hierdie vakgebiede*. Retrieved on March 8, 2009 from www.vryeafrikaan.co.za/site/docs/ChristoVonderwys.pdf.
- Wallerstein, I. (1995). *Historical Capitalism, with Capitalist Civilization*. London: Verso.
- Webb, M. (2006). 1 300 foreign artisans to conduct Sasol maintenance. *Engineering News*, 22 June 2006.
- Weed, M. (2005). „Meta Interpretation“: A Method for the Interpretive Synthesis of Qualitative Research. *Qualitative Social Research* Volume 6 (1) Art 37. Retrieved on May 25, 2007 from <http://www.qualitative-research.net/index.php/fqs/article/view/508/1096>.
- World Bank (1989). *Sub-Saharan Africa: From Crisis to Sustainable Growth*. World Bank issues. Washington: World Bank
- World Bank (2010). *Public spending on education, total (% of GDP)*. Retrieved on December 2, 2011 from <http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>
- Yih-Jin, Young (2000). Education and Development. In Edgar F Borgatta, Rhonda J. V. (2000) *Montgomery Encyclopedia of Sociology* (Volume 2). Washington: Macmillian.
- Zimmerman, L. (2010). *The influence of schooling conditions and teaching practices on curriculum implementation for Grade 4 reading literacy development*. Unpublished PhD thesis. Pretoria: University of Pretoria.

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