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Steering from a distance: improving access to higher education in South Africa via the funding formula

Pieter le Roux and Mignonne Breier

SOUTH AFRICA'S RAPID POLITICAL TRANSITION to democracy in the early 1990s was a remarkable achievement. Many positive changes have occurred since, but there are ominous signs that the miracle may not last. Poverty, inequality and unemployment remain prominent features of post-apartheid South Africa. Perhaps most ominous of all, educational opportunities for about 75% of black South Africans, specifically African and coloured South Africans, have hardly improved at all.¹ Deracialisation has ensured welcome changes in the top two or three income deciles, but differential access to education has hardly changed for the other seven deciles. A particular cause for concern is tertiary education, where the gross enrolment rate² of Africans has improved only marginally since 1994 (mainly because of improved participation rates among female students) and, as we will show in this chapter, the participation rate for African men has actually *deteriorated*.³

In our view the existing funding formula, together with myriad attempts at micromanagement by the education ministry, is steering South Africa's higher-education sector down a road that simply perpetuates many of the old inequities. In this chapter we argue for the introduction of a more social democratic approach⁴ to higher education. The goals of equity, economic development, and nation building would all be served by a tertiary education system that was able to ensure a significant increase in the numbers of African and coloured students. To bring this about, a new formula that is both more influential and more transformative is required.

In formulating our argument we begin by locating the changes implemented in the South African higher-education sector between the late

1980s and 2012 within a broader international context. Then we provide an overview of trends in black enrolment rates from 1910 to 2009, and show how disappointing these trends have been since the mid-1990s. We argue that four main factors underlie the lack of transformation in enrolment trends, namely:

- the lack of transformation in primary and secondary education;
- a substantial decline in both the proportion of GDP allocated to the higher-education sector and in real funding per student;
- inefficient attempts to steer tertiary education through three-year rolling plans and various ad hoc bureaucratic interventions aimed at micro-managing the sector; and
- the 2004 funding formula, which offers inappropriate incentives.

We believe that the failure to focus on increasing the rate of black enrolment, and on the broad development of citizens' capabilities, is helping to create conditions that have the potential to tear our nation asunder. We therefore discuss the patterns that have emerged in detail, and propose an alternative funding formula, which we argue is capable of bringing about a progressive transformation of the tertiary sector. The alternatives we propose aim to ensure that universities benefit from accepting increasing numbers of disadvantaged students, and that additional resources are invested in identifying students with academic potential and in assisting them to make the transition through higher education.

The nature of the higher education sector since 1980

Since the late 1980s dramatic changes have taken place in the higher-education system, particularly in the Anglo-Saxon regions, and more recently in Europe and in many developing countries. Following a model introduced by Margaret Thatcher in the United Kingdom, governments in the United States, Australia and Canada have abandoned the old collegial system (whereby senior academics effectively ran higher-education institutions) and have instead begun to demand conformity with certain government-defined goals. These include broader admissions policies, higher levels of efficiency in delivery, the meeting of equity criteria, etc.⁵ Similar changes implemented in South Africa in recent years are thus not unique, but mirror those introduced in many other countries where performance-related funding, including specific funding formulas, is used by governments to steer universities in particular directions.

Funding formulas were introduced in many countries only in the 1980s and 1990s, but in Canada and South Africa they have long been in place (see

Liefner 2003). In South Africa funding formulas have become increasingly prescriptive as the government has committed itself to steering higher-education institutions in specific directions. For example, after 1993 the South African post-secondary education (SAPSE) formula rewarded universities more for expanding student numbers in the hard sciences, and less for expanding intakes in the humanities and social sciences. Furthermore, since 1996, the government has increasingly tried to micromanage all institutions in a fashion reminiscent of the management style applied to institutions that catered for black students under apartheid.

South Africa's funding formula, introduced in 2004, emphasises certain types of outputs, and provides higher subsidies to universities as they increase their intake of black students. However, the biggest shifts have been: (i) increased funding linked to research output, which, as will be shown later in this chapter, has benefited the more established and historically advantaged universities; and (ii) the provision of (essentially redress) development grants to the historically disadvantaged institutions, where the levels of research output and/or the pass rates are not high enough to warrant adequate research or throughput grants.

Middleton's (2000) review of debates on the modernisation of higher education in Britain is also useful in shedding light on the changes that have occurred in South Africa. Many would argue that the 'creeping state *dirigisme*' identified by Middleton (2000: 543) is evident in South Africa too – see Jonathan Jansen's address at the 2004 TB Davie Memorial Lecture on Academic Freedom, titled 'Accounting for Autonomy, How Higher Education Lost its Innocence'.⁶

Undoubtedly, aspects of the recent reforms in education can be branded or praised, depending on one's bias, as clear evidence of state intervention in how universities are run. Those on the left argue that all funding formulas, including those implemented in South Africa since 2004, are merely an extension of the state's neo-liberal economic philosophy. In the words that Middleton (2000: 543) used to summarise the British debate, what we have is 'state managerialism at the service of the market...a widespread view that higher education is being "marketised"'.⁶

Another view on the process of modernisation in higher education, and one we share, is that it is an approach that uses the market as an instrument of state policy. The kernel of this model is suggested by terms such as 'remote control' and 'steering at a distance' (Middleton, 2000: 547, 548). Bundy (2006: 6), in his discussion of the reforms of the higher-education system initiated by Thatcher, argues that:

At the national level, the defining characteristic of the governance system is 'steering at a distance' – a combination of central control and decentralised authority. Universities are simultaneously deregulated (that is, permitted to become more entrepreneurial and more competitive) and more effectively regulated, through compliance with centrally set norms.

Middleton quotes Hoggett (1994: 44) as giving the following analysis of the processes actually taking place:

It's not so much devolved control as 'remote' control which appears to be superseding bureaucratic control as the preferred method of regulating institutional life. That is why radical processes of internal and external decentralization can occur at the same time as the centralisation of command...

Wherever you look now in the welfare state, semi-autonomous units appear to be springing up. Give managers and staff control over resources, make them accountable for balancing the books, add a framework of performance targets, and perhaps a few core values and mission statements, finally add a dash of competition and there you have it – a disaggregated, self-regulating form of public service production.

Middleton (2000: 551) argues that this 'remote control' or 'steering at a distance' model allows us to understand that the market is not simply managed, but mobilised. However, as he shows, contrary to what free marketers and old-style central planners would argue, this model, depending on how it is implemented, may enhance either uniformity or diversity, and it may either undermine state power, or strengthen it. Thus, in our view, the model is not inevitably part of a Thatcherite agenda, as Bundy (2006) seems to argue. In South Africa, both the old SAPSE formula and the present funding formula introduced in 2004 can be considered forms of 'remote control'. This is true even though the SAPSE formula was part of the collegial regime that Thatcher displaced, and even though the new funding formula's strong *rhetorical* focus on efficiency, throughput and the development of research capacity implies an intention to reform the sector.

Trends in black enrolment, 1910–1996

One of the key promises of the Freedom Charter, which had a strong resonance for students fighting the apartheid regime, was that the doors of learning would be opened to all. In one sense this goal has long since been achieved. The late 1980s and the 1990s saw a dramatic increase in the proportion of black students entering schools, technikons and universities that had previously

been reserved for whites. The doors of the finest educational institutions are no longer closed to black South Africans on the basis of race, as they were under apartheid. By 2009, well over 50% of the students at the historically white English universities were black (the University of Cape Town at 54% had the lowest proportion of black students). And at the historically white Afrikaans campuses, at least 40% of students were black, with the exception of the University of Stellenbosch where the proportion of black students was 32% (Department of Basic Education (2010: 28, Table 16).

But as we will show, contrary to expectations, the number of black students in South African higher-education institutions expanded rapidly between 1970 and 1994, and after that the rate of expansion in the numbers of black students dropped dramatically. Indeed enrolment in the years since liberation has grown so slowly that gross enrolment (that is, participation) rates have increased significantly only for Indians, and have actually decreased for white, African and coloured males – a stark reality that has mostly been ignored.

Note that in this chapter we refer mainly to enrolment figures for public higher-education institutions. There is a growing private higher-education system in South Africa but no reliable student data has yet been published.⁷ There are indications that private higher education will be encouraged in future as another means of expanding student enrolment.⁸ If this occurs, statistics on student intake will be essential for planning and monitoring purposes, and it is hoped that the government will ensure their availability.

Black South Africans on the sidelines, 1910–1950

During the first forty years after the establishment of the Union of South Africa in 1910, a very small number of black South Africans were admitted annually to universities and university colleges. Even among the white population, enrolment rates were initially very low. By the time the National Party took control of the government in 1948, and began to implement its apartheid policies, the total number of students that had graduated since tertiary institutions were first established amounted to far fewer than the number of students who graduate annually from tertiary institutions today. And of those who graduated between 1910 and 1948, less than 4% were black. In 1950 the total number of students registered at universities was 23 122, and of these a mere 1 350 (5.7%) were black, and less than half were African (see Table 10.1). Why was it that nearly half a century after the establishment of the Union, so few black South Africans had enjoyed the benefits of a university education?

Until the late 1950s there was no government decree preventing

universities from admitting black students. On the contrary, both JBM Hertzog (prime minister in the 1920s) and Jan Hofmeyr (education minister in the 1930s) rejected requests to prevent universities that were accepting black students (that is, the University of the Witwatersrand, the University of Cape Town and the University of Natal) from doing so. Although situated on different sides of the political spectrum in white South Africa, both men argued that this decision should be at the discretion of the universities, and that the government should not interfere (Moodie 1994). However, their respective governments carry much of the blame for the small number of black students admitted to universities, because they ensured that very few black South Africans had access to secondary schooling and, thus, most never obtained the qualifications needed to access the few universities that might be persuaded to open their doors to them.

The state's early hands-off policy with regard to the composition of the student body came to a dramatic end, however. The 1959 Extension of University Education Act gave the education minister draconian powers, which he used to prohibit existing universities from accepting black students (and academic staff) without a permit. Instead, the Act provided for the establishment of tribal universities in the far-flung rural reserves known as bantustans.

Banished to separate institutions 1960–1970

By 1960, the year after the Extension of University Education Act was passed, the number of black students in the tertiary sector stood at 4 381 (see Table 10.1). Of these 44% were African, 36% Indian and 20% coloured (calculated from Table 10.2). Even though the number of black students had increased threefold (and proportionally from 6% to 10%) between 1950 and 1960, the outlook for black education was bleak. It is no wonder that the Freedom Charter tried to counter these trends by demanding that the doors of learning be opened to all.

Virtually half (46%) of the 4 381 black students registered in 1960 were at the University of South Africa, which is a distance-learning institution. Just under 40% (that is, 72.6% of black students at residential institutions) were at the University of the Witwatersrand, the University of Cape Town and the University of Natal,⁹ all of which had been officially closed to black students. And less than 15% were at black institutions – nearly 500 students (11%), were at the University of Fort Hare,¹⁰ and just 161 students (3%) were at the University of the Western Cape, which had just been established for coloured students.

Although the total enrolment of black students more than doubled from 1960 to 1970, the percentage of black students enrolled increased by only about 8% a year, a much lower rate than the more than 12% average annual increase seen in the 1950s (see Table 10.1, which shows tertiary enrolments from 1910 to 2009, excluding teacher-training colleges and the tertiary institutions in the Transkei, Bophutatswana, Venda and Ciskei).¹¹ Meanwhile, the permit system had brought the number of black students admitted to 'white' universities down to 1550 from the 1728 registered a decade earlier. More dramatically, the number of African students at the University of the Witwatersrand and the University of Cape Town, which amounted to 113 in 1959 when the Act was passed, had been reduced to just four students by 1967 (Reddy, 2004: 14). By 1976 only 7% of black students (see Reddy, 2004: 17), and less than 13% of black residential students, were accommodated at universities reserved for whites. Verwoerdian apartheid succeeded in ensuring that black, and particularly African students, were all but excluded from the universities reserved for whites, and in reducing the growth rate in black student numbers. Whereas black students as a percentage of total enrolments virtually doubled from 5.7% to 10.2% in the 1950s, this percentage crept up to only 11.3% by the end of the 1960s (see Table 10.1).

The era of the *verligtes* and black consciousness, 1970–1996

By the early 1970s the more liberal or *verligte*¹² wing of the National Party were being increasingly successful in challenging aspects of the Verwoerdian approach to tertiary education. The reports of the Riekert (1979) and Wiehahn (1982) commissions made it clear that the country desperately needed black South Africans with the skills and abilities to help manage and run the economy, and that the tertiary education of black South Africans should not merely provide for the needs of managing what Verwoerd called their 'homelands'. The resulting shift in policy is clear from the fact that the growth rate for black students shot up to an average annual rate of 16% during the early 1970s, more than doubling in six years. And during this decade, the proportion of black students increased from just above 10% to virtually 20% of all students.

In terms of black student numbers these statistics signify a significant shift. However, as was the case during the 1960s, virtually all the new black students, except for those registered for distance learning at the University of South Africa, were accommodated in what Reddy (2004) describes as 'tribal colleges'. Thus, although the rapid increase in the number of black South Africans in tertiary education was encouraged to meet the needs of the

TABLE 10.1 Student enrolment and average annual rates of growth at public tertiary institutions (including teacher colleges and the TBVC institutions from 1994), South Africa 1910–2009

Year	Black students	Annual growth rate (%)	All students	Annual growth rate (%)	Black students as % of total
1910			1 160		
1920			3 250	9.8%	
1930			8 269	4.0%	
1940			12 262	6.5%	
1950	1 320	12.7%	23 122	6.3%	5.7%
1960	4 381	7.4%	42 766	6.8%	10.2%
1965	6 273	8.5%	59 365	7.0%	10.6%
1970	9 411	16.0%	83 030	8.2%	11.3%
1975	19 752	15.5%	122 869	8.0%	16.1%
1986	96 665	13.4%	286 736	7.1%	33.7%
1994	273 526		495 356		55.2%
1994	355 811	11.1%	586 003	4.9%	60.7%
1996	439 439	1.5%	644 326	0.2%	68.2%
2001	474 371	5.3%	649 831	4.6%	73.0%
2004	554 044	3.4%	743 001	2.4%	74.6%
2009	656 416		837 755		78.4%

Note: Up to 1976, these enrolments are for universities and university colleges that were recognised and funded by the central government. From 1986, they include enrolment figures for the technikons, established from 1978 onwards, and, from the second estimate for 1994 onwards, they include enrolments at teacher-training colleges and the TBVC institutions. Enrolments at private institutions are not included. Blank cells indicate that data is unavailable.

Sources: Black university enrolment estimates for the period 1960–1976 are calculated from the figures contained in Reddy (2004: 16, Table 2), and for 1950 are extrapolated from the 4.8% Reddy (2004: 10) reported for 1948. The estimates for all students for the period 1910–1975 are taken from Steyn and De Villiers (2006: 24, Table 1.2), those for 1996–2004 from the Department of Education’s (2005a) Higher Education Information Management System (HEMIS), and those for 2009 from a report by the Department of Basic Education (2010: 31, Table 19). In total, 70 731 enrolments at teacher-training colleges were added in 1996 (see Hofmeyr and Hall 1995: Table 22). The proportion of the different population groups in teacher-training colleges in 1996 was estimated by extrapolating 1990 and 1992 statistics provided by Bunting (1994: 72, Table 31).

country’s economy, this growth took place within the ethnically separated institutions established by Verwoerd.

However, attempts at social engineering often prove counterproductive, and the impact of the establishment of separate black universities, illustrates this clearly. Reddy (2004: 15) describes what happened:

the emergence of black universities marked an important change in white domination...[No longer was there] an insignificantly small number of black students in higher education...At the time of the Soweto uprisings in 1976 three trends, all contributing to the development of student organisations and resistance, are identifiable. First, black student numbers increased...Second, the comprehensive separation of students into ethnic institutions... alienated, angered and frustrated black students... Third, the 'new' institutional vision of the higher education system, designed to reproduce Apartheid social relations...produced new, protest-based identities derived from the spread of black consciousness ideas and practices (Reddy, 2004: 15, 19).

Black consciousness, spread rapidly from one black campus to the other in 1976, and would in all likelihood have been less successful had it not been for the fact that Extension of University Education Act had herded most black students into separate colleges and attempted to bolster their 'ethnic' identities. The very action taken to perpetuate white domination created the conditions under which an increasing number of black South Africans rejected attempts to divide them into different 'ethnic' groups, and they began to discard the dogma, subconsciously accepted by many, that blacks were inferior. It can be argued that this shift in black South Africans' interpretation of social reality was among the most significant changes that eventually led to demise of the apartheid state (see Le Roux 1984).

From the mid-1970s to the mid-1990s, black enrolment in tertiary education continued to grow extremely rapidly.¹³ Initially, most of these students were accommodated in universities reserved for black students, and many were trained as teachers or public administrators. However, after 1976 it was obvious that the state's attempts at ethnic mobilisation had been counterproductive and, given the country's skills needs, also misdirected. Based on the recommendations of the De Lange Commission (De Lange 1981),¹⁴ the number of black students admitted to so-called technikons was rapidly expanded – technikons had been established by the state in 1978 to provide technical and commercial skills, and the training received prepared students to serve the needs of the country's economy rather than a specific ethnic group. During the 1980s student numbers at technikons grew more than three times faster than those at the universities (see Steyn and De Villiers 2006: 24, Table 1.2).

In evaluating the delivery of tertiary education during the final 25 years of the apartheid regime, one has to admit that, although the separation of race

groups was morally reprehensible and the quality of provision unequal, the expansion of student numbers was impressive. Although it started the process a decade later than the United Kingdom, South Africa moved towards massification even more rapidly than Britain had done. The enrolment rate, which was only 4.1% in the UK in 1961, reached 15% in 1987 according to 'Martin Trow's widely cited measure for a mass system' (Bundy, 2006: 3). In South Africa, the enrolment rate was 4.5% in 1970, and reached 15% in the early 1990s, which is within a shorter time span than the UK. In contrast to the schooling system, where state spending per student was highly unequal, the contribution of state funding to black tertiary institutions per student was on a par with that provided to 'white' institutions up to the late 1980s.

How can the rapid expansion of tertiary education during the latter half of the National Party's regime be explained? It can of course be argued, as Bundy (2006) has done with regard to the delay in scrapping the collegiate system of university governance in South Africa, that it occurred as a result of the country's academic isolation. It is true that the rapid expansion in the number of students enrolled in tertiary education took place in the 1980s and early 1990s, when many African countries were cutting back on tertiary funding based on a rate-of-return analysis propagated by the World Bank.¹⁵ According to this line of argument, South Africa was clearly unaware of the thinking that priority should be given to primary education.

A second possibility, argued by Steyn and De Villers (2006: 41), is that the rapid growth in black student numbers was an unforeseen consequence of the SAPSE funding formula. And there is no doubt that some of the black universities grew far more rapidly in the late 1980s than their bureaucratic minders wished them to.

A third argument, and the one that we find most convincing, is that the rapid expansion of black enrolment was carefully planned by the *verligtes*, led by Prof de Lange, who was an educationist and chair of the Broederbond from 1983 to 1993. Certainly, the outcomes were in line with the recommendations of his 1981 De Lange report, and seem to have been part of a specific strategy. Yet, even during the *verligte* period, when many of the cornerstones of apartheid laid by Verwoerd were being undermined, the *verkrampes* continued to micro-manage the 'tribal universities'. For example, when the senate and council of the University of the Western Cape appointed a very able African academic to the political science faculty in the 1980s, government officials vetoed his appointment on the grounds that an African could not be allowed to teach at a 'coloured' university. Things were changing however, because the following year, when the university reappointed the same candidate, no veto was exercised.

A long tradition of steering via funding formulas

For most of the twentieth century South Africa's tertiary institutions obtained the bulk of their funding from the state. Initially, the universities, and later the technikons too, were given a great deal of freedom as to how they spent this money. From as early as 1922, state subsidies to universities were consolidated into single block grants that could be spent without government approval. Detailed government financial control was temporarily reimposed during the Great Depression when the then education minister, DF Malan, required universities to reduce academic salaries, 'native wages' and other running costs. But, within two years, financial management was returned to the universities (Moodie 1994: 3).

Moodie claims that the funding of South African universities from as early as the mid-1930s was based on broad principles, and not on whether the government agreed with how a specific university was managed. He writes that, in 1933, just after the Great Depression,

the Report of the Adamson Committee, referring to the 'crippling effects of uncertainty' upon the universities and colleges, proposed the establishment of a stable and predictable system of formula-based funding. The details of the formula were not in fact adopted by the government, but the goals of predictability and of formula funding seem to have remained parts of government policy since that time. (Moodie 1994: 4)

Over the years different funding formulas were implemented on the basis of the Holloway Commission of 1951, the Van Wyk de Vries Commission of 1974, and the Venter Report of 1985 (see Steyn and De Villiers 2007), which all implicitly recognised that government should not get involved in the day-to-day administration of universities. In line with this principle, the SAPSE formula proposed in the mid-1980s intended explicitly to guarantee this hands-off stance. A commitment was made to:

a system of financing that can clearly be seen to be immune to manipulation by administrative whim or political caprice. A system of fair and unambiguous rules is required that will allocate the available resources in accordance with both need and merit. (SAPSE I-10, quoted by Moodie 1994: 26)

Regardless of the sentiments expressed by the SAPSE committee in the 1980s, the reality of the preceding 25 years was, as shown, very different. The 1959 Extension of the Universities Act was a blatant and crude attempt at social engineering. In draconian fashion, it interfered with the freedom of

universities to decide whom to admit and with the freedom of individuals to choose where they wished to study. Moodie contends that, with this exception, up to the early 1990s, 'All Afrikaans-speaking and black as well as English-speaking universities, mirror the typical British model of internal university government in which authority is shared between lay-dominated Council... and academic Senate' (Moodie 1994: 2). However, as Moodie points out, South African institutions were from the outset subject to far more direct control in certain spheres than their British counterparts:

All new university statutes were submitted both to the minister and to parliament. Members of academic staff could appeal against dismissal to the minister. And universities are still legally obliged to seek state approval before establishing new courses, departments, or faculties. (Moodie 1994: 2)

Indeed, from the 1950s until about 1996, funding formulas played a crucial role in steering the universities – far more so than Moodie seems to realise. In fact, each of the funding formulas was more specific in terms of what it demanded from the institutions in exchange for the financial support provided. As is clear from the preceding discussion, in terms of increasing enrolments, this approach was highly successful.

Whatever its real motives, the apartheid state, while violently repressing black student activists, expanded opportunities for black tertiary education at an exceptionally rapid rate. It did not succeed in winning the hearts and minds of those educated at apartheid institutions, as those responsible for state security might have hoped. But, ironically, as will be shown in the next section, black enrolment and participation at tertiary level increased far more rapidly during the final decades of apartheid than the democratic government has since been able to manage.

Post-apartheid enrolment trends

Contrary to all expectations, the rate of growth of student enrolments dropped dramatically after the transition to a democratically elected government. At first glance, the rapid increase in the proportion of black students from 55% in 1994 to 68% in 1996 seems to reflect a dramatic improvement (see Table 10.1). However, if one includes the teacher-training college students and students from the TBVC institutions, who are excluded from the SAPSE data, the 1994 percentage rises to 60.7% and the improvement from this to 68% seems less impressive (see Table 10.2). Although, for the first two years after the advent of democracy, the number of black students enrolled

increased by nearly 42 000 each year, the overall growth rate in student numbers remained about the same, that is, at an average of 29 000 to 30 000 a year. And in percentage terms, the overall growth rate went down slightly, from an average of 7.1% to an average of 4.9%. The rapid growth in black student numbers during these two transition years relative to the preceding years was possible partly because white enrolment dropped by about 13 000 a year during this period, in contrast to preceding years, during which white enrolment had grown steadily by over 3 000 students a year.

Although the overall growth in enrolment of close to 30 000 that occurred in the eight years prior to 1994 was sustained for another two years, the average number of enrolments for the period 1996 to 2009 was less than 15 000, which is about half that of the eight years preceding 1994. For the period from 1996 to 2009, the previously rapid 7% per year average growth rate fell to a mere 2%. Prior to this, the lowest average annual growth rate (of 4%) was recorded during the decade of Great Depression. Furthermore, whereas black enrolments grew at 8.5% even during the darkest years of Verwoerd, and at 13 to 16% between 1970 and 1994, this rate of growth dropped to an average of only 3.1% after 1996 (see Table 10.2).

TABLE 10.2 Annual changes in student enrolment before 1994, 1994–1996, and after 1996

Year	Enrolments			Average annual change in enrolments			Average annual change (by %)		
	Black	White	% Black	Black	White	All	Black	White	All
1986–	123 106	204 869	37.5%						
1994	335 811	230 192	59.3%	26 588	3 165	29 754	13.4%	1.5%	7.1%
1994–	355 811	230 192	60.7%						
1996–	439 439	204 887	68.2%	41 814	-12 653	29 162	11.1%	-5.7%	4.9%
2009	656 416	181 339	78.4%	16 691	-1 811	14 879	3.1%	-0.9%	2.0%
1996–	439 439	204 887	68.2%						
2000–	436 018	168 000	72.2%	-855	-9 222	10 077	-0.2%	-4.8%	-1.6%
2004–	554 044	188 957	74.6%	29 507	5 239	34 746	6.2%	3.0%	5.3%
2009	656 416	181 339	78.4%	20 474	-1524	18 951	3.4%	-0.8%	2.4%

Note: Teacher-training college students are included for the entire period, but those at TBVC institutions are included only from the second entry for 1994 onwards.

Source: See sources for Table 10.1.

To understand what happened after 1996, it is helpful to consider three different phases. The first phase is the four-year period up to 2000, when actual enrolments surprisingly declined at a rate of 1.6% a year. White enrolment continued to go down, as it had in the preceding two years, by about 5% a year, and during this time, black enrolments also decreased by close to 1% a year. On average, overall enrolments decreased by about 10 000 a year.

The second period is from 2001 to 2004 when an overall annual growth rate of 5.3% was realised. Although somewhat lower than the 7.1% of the eight years before 1994, the higher level of enrolments meant that annually the average number of new enrolments shot up to nearly 35 000, of which almost 30 000 were black students.

In the third period from 2005 to 2009, during which the government introduced a new funding formula and tied universities into a process for negotiating envisaged growth in the sector (discussed in more detail below), annual growth in enrolments was cut back to just under 19 000 a year, which is two-thirds of the annual increases realised before 1994. Black enrolments increased at just over 20 000 a year, and white enrolments decreased by about 1 500 a year (see Table 10.2).

One of the most common measurements of the degree to which a country succeeds in providing its citizens with access to tertiary education is its *gross enrolment rate* (often called the gross participation rate in South African debates). This is the number of students enrolled as a percentage of the total 20–24-year-old age cohort in the population as a whole. In calculating changes in the *gross enrolment rate*, it is crucial to compare apples with apples. South Africa's statistics present a number of problems in this regard. When teacher-training colleges were incorporated into universities and technikons in 2001, these students were included in the Department of Education's data series for tertiary institutions. However, for the years before that, these enrolments were excluded. We therefore added the data from the teacher-training colleges for 1996 and 1986 (see footnotes to Tables 1, 2 and 3 for sources), but not for 1970 or 1960, years for which reliable data was not available. Using rough estimates, the addition of teacher-training college students could increase the overall gross enrolment rate for 1970 to well over 5%, and the enrolment rate for whites to as much as 25%. Another issue that affects South African tertiary enrolment rates is the admission of foreign students. According to the Council on Higher Education (CHE 2009: 27) about 50 000 students from other African countries attended South African institutions in 2009. These students were deducted from calculations of the participation rates for this year. In principle, this type of adjustment should have been made in

earlier years too, but no statistics were available. Our assumption is that the proportion of foreign African students was much smaller in 1996.

TABLE 10.3 Higher-education headcount enrolments and gross enrolment rates by population group, 1960–2009

	African	Coloured	Indian	White	Total
1960					
Enrolment	1 871	822	1 516	35 095	42 766
20–24 age cohort	878 100	122 100	41 800	232 200	1 274 200
Enrolment rate	0.2%	0.7%	3.6%	15.1%	3.4%
1970					
Enrolment	4 449	1 921	3 042	64 792	83 030
20–24 age cohort	1 289 300	179 280	67 880	329 390	1 865 850
Enrolment rate	0.3%	1.1%	4.5%	19.7%	4.4%
1996					
Enrolment	360 124	40 014	39 301	204 296	644 326
20–24 age cohort	3 153 083	344 373	103 123	349 102	3 982 353
Enrolment rate	11.4%	11.6%	38.1%	58.5%	16.2%
2001					
Enrolment	391 851	38 493	44 027	175 460	649 831
20–24 age cohort	3 544 596	353 661	102 236	294 030	4 294 523
Enrolment rate	11.1%	10.9%	43.1%	59.7%	15.1%
2004					
Enrolment	453 639	46 090	54 315	188 957	743 001
20–24 age cohort	3 940 965	381 805	108 111	317 611	4 748 492
Enrolment rate	11.5%	12.1%	50.2%	59.5%	15.6%
2009					
Enrolment	497 686	55 101	53 629	179 232	787 755
20–24 age cohort	4 110 200	384 700	104 807	306 600	4 920 900
Enrolment rate	12.1%	14.3%	51.2%	58.5%	16.0%

Note: The participation rates for 1960 and 1970 are underestimated, because data for the teacher-training college students are not available. In the case of Indians in 2009, the 20–24-year-old age cohort estimate was 122 412, which is totally out of line with the 99 303 and 110 310 for the 10–14 and 15–19-year-old age cohorts reported in the 2001 Census. An estimate based on Census data (the average of the latter two age cohorts) was thus used to estimate the number in this age cohort. As a result, the Indian enrolment rate did not drop from 50% in 2004 to 45% in 2009, as seems to be the case should one accept these estimates, but instead increased by 1%. Also in 2009, it was estimated that about 50 000 students from other African countries were enrolled at South African universities (CHE 2009: 27); this figure was thus deducted from the HEMIS totals to obtain South African enrolment rates.

Sources: Enrolments in tertiary education: Subotzky (2003), Department of Education HEMIS (2005a) and Department of Basic Education (2010: 31). Teacher-training college students are part of the HEMIS data from 2001 onwards, because the colleges of education were then incorporated into the universities and technikons. For 1996, the total enrolment in education colleges was based on Hofmeyr and Hall (1995: Table 22), and enrolment according to population group was estimated by extrapolating the changes in enrolment by population group for 1990 and 1992, as provided by Bunting (1994: 72, Table 33). We used Stats SA (2004a: 20, 22, Tables 4.1 and 4.3) for 1996 and 2001 mid-year, five-year-interval age-distribution figures, and Stats SA (2004b and 2009) for the 2004 and 2009 mid-year estimates of the 20–24-year-old age cohort.

As a result of the very rapid growth in enrolments after 1970, the gross enrolment rate (counting only those in publicly funded tertiary institutions) increased dramatically from about 4% in 1970 to 16% in 1996. The enrolment rate then dropped to about 15% in 2001, which reflects the decline in student enrolments in the late 1990s. But from 1999 to 2009 there has been a slight improvement in the growth in enrolments. As a result the gross enrolment rate had again reached the 16% level by 2009 (see Tables 10.3 and 10.4). Comparisons of gross enrolment rates across different years often do not pay due attention to precisely what is being compared. Had we excluded the teacher-training college students from the 1996 figures, the gross enrolment rate for that year would have been only 14.5%.

TABLE 10.4 Headcount and gross enrolment rates by population group and gender in public tertiary-education institutions, including teacher-training colleges, 1996 and 2009

Population group and gender		20–24-year-old age cohort		Enrolment of South Africans		Gross enrolment rate	
		1996	2009	1996	2009	1996	2009
African	Male	1 508 732	2 042 000	173 692	218 385	11.5%	10.7%
	Female	1 644 350	2 068 200	186 432	279 301	11.3%	13.5%
	Total	3 153 083	4 110 200	360 124	497 686	11.4%	12.1%
Coloured	Male	168 867	191 000	21 742	23 434	12.9%	12.3%
	Female	175 506	193 700	18 272	31 667	10.4%	16.3%
	Total	344 373	384 700	40 014	55 101	11.6%	14.3%
Indian	Male	51 295	51 608	19 749	23 356	38.5%	45.3%
	Female	51 828	50 801	18 561	30 273	35.8%	59.6%
	Total	103 123	104 807	39 301	53 629	38.1%	51.2%
White	Male	172 891	155 400	117 294	84 197	67.8%	54.2%
	Female	176 211	151 200	87 002	95 035	49.4%	62.9%
	Total	349 102	306 600	204 296	179 232	58.5%	58.5%
All groups	Male	1 917 918	2 449 400	337 002	350 906	17.6%	14.3%
	Female	2 064 435	2 471 500	302 459	436 849	14.7%	17.7%
	Total	3 982 353	4 920 900	644 326	787 755	16.2%	16.0%

Note: The male and female enrolments for 1996 and 2009 for each population group were estimated by calculating the male to female ratios for 1994 and 2006 from the statistics provided by the Department of Education (2008: 20, Table 5) and applying these to the enrolment data contained in Table 10.3.

Sources: For enrolment figures according to gender, see Department of Education (2008: 20, Table 5). The number of students in education colleges is based on the report by Hofmeyer and Hall (1995). When allocating the students in teacher colleges according to gender in 1996, the gender proportions reported by Stuart et al. (1992: 11) for 1991 were used, that is, 65% female overall, with 75% female in the case of whites, which meant a 63% female proportion for the other groups.

Similarly, had we not subtracted the foreign African students from the 2009 enrolments, the most recent gross enrolment figures would have been 17.1%. This would have indicated some progress towards the target of 20% participation rate in public institutions by 2015, envisaged in the 2001 National Plan for Higher Education (Department of Education 2001). However, our calculations indicate that South Africa has not moved significantly closer to this goal since 1996. There is every reason to assume that, if the funding and enrolment policies implemented in 2004 continue, the goal of a 20% enrolment rate by 2015 will not be reached by the publicly funded tertiary institutions.¹⁶

Another trend ignored by most analysts, and which is also a cause for concern, is reported in an unpublished paper by Steyn (2008), which we found on the University of Stellenbosch's website. Steyn reported enrolment rates according to gender, and made a startling discovery: the gross enrolment rate for men decreased by 1% from 15.7% in 1996 to 14.7%¹⁷ by 2007. Over the same period the position of women improved significantly, increasing from 13.3% to 17.7%. We subsequently found enrolment data by gender and population group for a number of years in a Department of Education publication (2008: 20, Table 5), and we used this to estimate the enrolment of South Africans by population group (see Table 10.4). Over the period from 1996 to 2009, we estimate that the enrolment rate of males fell from 17.6% to 14.3%, while that of females increased from 14.7% to 17.7%. Again, we added in the enrolment in teacher-training colleges in 1996 (on the assumption that for all population groups, two-thirds of the students in teacher colleges were female), and we subtracted the 50 000 Africans who were not South African from the 2009 data, on an assumption that the gender split was 50/50 – hence the differences between our estimates and Steyn's. The gross enrolment rate for the population as a whole remained at about 16% over the entire period as shown in Table 10.3.

The 13 years from 1996 to 2009 clearly did not offer South African males much on the educational front. As shown in Table 10.4, the enrolment rate among white males went down from 68% to 54%. Although there was a decline of more than 17 000 in the white male 20–24-year-old age cohort during this period, the decline of about 33 000 among white males studying at public tertiary institutions was disproportionate, and resulted in a decline of 14 percentage points in their enrolment rate. Of course, some might argue that this is a positive trend, and that it has brought about more equity given the disproportionately high enrolment rate of white males up to 1996. It is possible, however, that a disproportionate number of white males are now

studying in local private institutions or overseas. White females increased their participation rate dramatically from 49% to 63% over the same period, and by 2009 were the group with the highest enrolment rate in public institutions. The net impact of these changes is that the overall enrolment of white South Africans in public tertiary institutions remained fairly stable over the period at between 58% and 59%.

Whereas coloured females had the lowest enrolment in 1996 at 10.4%, they had significantly improved their enrolment rate to over 16.3% by 2009. The enrolment rate of coloured males remained roughly constant at around 12%. Thus the enrolment rate for 'coloureds' as a group increased from nearly 12% to more than 14% over this period. It is worth noting, though, that the gross enrolment rate of this group remained fairly constant up to 2004, and most of the improvement has taken place between 2004 and 2009 (see Table 10.3).

Indians constitute the only group in which enrolment rates of both males and females improved significantly. The rate for males increased by nearly 7% from the 38.5% recorded in 1996, and that for women increased by 14%. In 2009 their enrolment rate of 59.6% was the second highest, just below the white female enrolment rate.¹⁸

Until shortly before 1996 political power was in the hands of white South Africans, with white males being the dominant group. Hence their very high enrolment rate in 1996 is not surprising. After 1994 African men gained more political power than any other group. One would, therefore expect this to be reflected in improvements in their enrolment rate. However, the enrolment rate for African males decreased slightly from 11.5% to 10.7% between 1996 and 2009, making them the group with the lowest participation rate. The finding that the group that probably has the highest expectation of benefitting from the political transition continues to be so badly prepared for participation in the modern economy, 18 years after the transition to democracy, must surely sound a warning of dangers to come.

Over the same period, the situation of female African students improved marginally by a just over 2% to 14.3%. This means that overall African enrolment has gone up slightly from 11.4% to 12.1% between 1996 and 2009. This is a far cry from what is needed if South Africa is to develop the capabilities of all its citizens, which is a precondition for a common commitment to a shared future. The social, political and economic cost to the country of the failure to transform the African and coloured participation rates more than marginally and particularly the failure to improve the situation of the African males, constitutes a severe risk for the future of our country.

Why the failure to improve tertiary enrolment rates?

Gross enrolment rates in public tertiary education in South Africa have remained stuck at around 16% since 1996, and as we have shown, in the case of South African males, and specifically African and white males, enrolment rates at public institutions actually fell between 1996 and 2009. In this section we examine some of the reasons for these failures.

TABLE 10.5 Senior-certificate results and population growth in the 18–20 age bracket, South Africa 1996–2003

Year	Candidates who wrote	Passed without endorsement	Passed with endorsement	Total passes	Population size 18–20 years
1996	100.0	100.0	100.0	100.0	100.0
1997	107.9	97.6	87.6	94.7	101.1
1998	106.7	101.6	87.3	97.5	105.5
1999	98.7	93.3	79.6	89.4	110.2
2000	94.5	107.6	85.8	101.4	115.0
2001	86.7	105.0	84.6	99.2	117.4
2002	85.6	115.7	93.8	109.4	119.8
2003	85.0	120.6	102.5	115.4	121.8

Note: Indexed values with 1996 = 100.

Source: Steyn and De Villiers (2006 138, Table 5.2).

The schooling system: apartheid's poisoned chalice

'Decreasing numbers of first-time entering students as the result of very disappointing Senior Certificate results' (Steyn and de Villiers, 2006: 25) is often put forward as the main reason for the stagnation in student numbers after 1996. There is no doubt that the outcomes produced by the secondary schools are very disappointing, as spelled out in the following report:

there has been a sharp decline in the number of school-leavers with matriculation exemption, which is a precondition for entry into universities and to a lesser extent into technikons. Between 1994 and 2000, the number of school-leavers obtaining a matriculation exemption decreased from 89 000 to 68 626, that is, by 20 374 (or 23%). In comparison, the NCHE's [National Council for Higher Education] enrolment projections were

based on assumptions that the total of school-leavers with matriculation exemption would reach 143 000 by 1999. (Ministry of Education 2005a: 17)

As shown in Table 10.5, by 1999 the number of school leavers who passed their senior-certificate exams with the endorsement that gives them access to tertiary study had declined to about 80% of the 1996 pass rate. By 2003, the 1996 figures had been exceeded by just 2%, by which stage the number of people in the 18 to 20 age group (in South Africa's population as a whole) had increased by 20%. This means that proportionally 15% fewer school leavers were able to gain entrance to tertiary education by 2003. While the pass rate has improved since then, the overall situation has not improved significantly since 1996, if population growth is taken into account.

The schooling system is still in a state of crisis. A breakdown of senior-certificates obtained in 2006 shows that Africans achieved a pass rate of only 62%, compared with 81% for coloureds, 92% for Indians and 99% for whites.¹⁹ In addition, Africans made up just 59% of the school leavers who passed with endorsement (against 83% of those who wrote). Indians constituted 7% of those who passed with endorsement and 2% of those without. Whites constituted 26% of those who passed with endorsement and 8% of those without. Among coloured students the same proportion passed with endorsement as those who wrote (6%). An analysis of results for maths and science show similar trends. Furthermore, a study by Progress in International Reading Literacy (PIRLS) showed that almost 80% of the more than 30 000 South African students in Grades 4 and 5 who were tested did not reach the lowest benchmark in literacy, in contrast to 6% of students in the other 39 countries that participated. If one excludes those who were tested in English and Afrikaans, between 86% and 96% of those tested in the other South African languages failed to reach the lowest literacy benchmark.²⁰

These results prove that the legacy of apartheid, which gave Africans the cheapest and the poorest quality education possible, has not been effectively overcome. In fact, for many, schooling has taken a turn for the worse. The PIRLS study shows that the relatively small number of schools formerly reserved for white pupils (commonly known as Model C schools and now comprised of about 50% black students) have shown significant improvements in their scores on international tests between 2004 and 2008. But results on the same tests from most other schools, that is, those still serving the majority of African and coloured schoolchildren, have deteriorated over the same period.²¹

Thus the tremendous differences between the quality of primary and secondary schooling received by most white and Indian children on the one

hand, and most African and coloured children on the other, are not being eradicated. The implications of this for equity, economic growth and political stability can hardly be underestimated. Improvements in school quality will not occur overnight, and our contention is that we cannot continue to wait for the schooling system to improve. Tertiary institutions have to admit more students from socio-economically disadvantaged backgrounds into the higher-education system, even if they have not obtained the required senior-certificate results, identifying those who have potential and providing them with the necessary academic and financial support. This will not be easy.

A study by Branson et al. (2009) shows that, among those who do not have the necessary senior-certificate results, there are no easy ways of detecting which students have the potential to succeed at tertiary level. The study finds that the socio-economic circumstances, and the quality of the schools attended by African and coloured students, are far more important in determining how well they do in the senior-certificate examinations (and whether they apply for tertiary education) than their innate abilities reflected in test scores for literacy and numeracy. According to the study:

individual ability is not able to play a significant role in educational attainment over and above socio-economic context. This result suggests that schools and home environments which are characterised by lack of adequate resources and unfavourable learning environments could be leading to a 'crowding out' of individual ability. (Branson, 2009: 53)

Even though changes introduced into the senior-certificate system may make it easier for students to obtain marks that give them entrance to universities, many able students fare so badly at schools that they may be 'crowded out' of further studies by extraneous factors. This could be disastrous for political stability and economic development in South Africa. As we outline in more detail below, a funding formula that encourages tertiary institutions to identify and provide academic support to able students who fail to reveal their potential through the senior-certificate exams, could increase the enrolment rate of black and, in particular, African and coloured students.

GEAR and the decline in tertiary-education allocations, 1987–2009

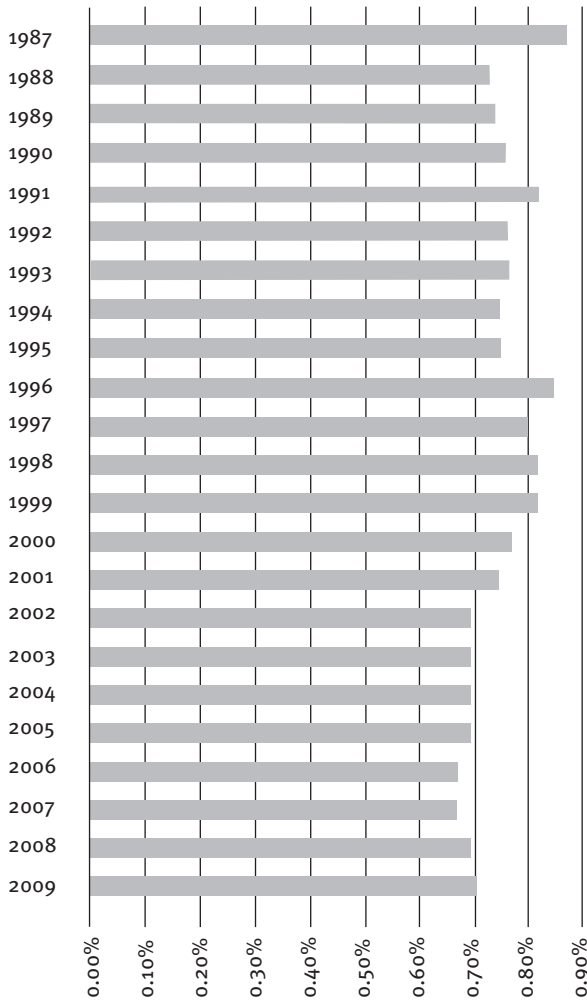
Growth in the tertiary sector is clearly dependent not only on the output of the school system, but on a number of other factors, including the funds that are at the disposal of the tertiary institutions and the freedom they have to expand their enrolments.

When considering state funding of the tertiary sector, the percentage of GDP allocated by the state to the tertiary sector is a crucial statistic. The information usually presented for South Africa is contained in Figure 10.1. It combines data provided by Steyn and De Villiers (2006) with data from the Council on Higher Education (CHE 2009) and in a study by Badsha and Cloete (2011: 20). These analyses of changes in government funding for the tertiary sector are based on the SAPSE and HEMIS data. From the graph, one would think that the best years for tertiary-education funding were from 1996 to 2000, the period after the acceptance of the state's Growth, Employment and Redistribution (GEAR) policy. Furthermore it seems as though the proportion of GDP allocated to tertiary education was only slightly higher in the period from 1988 to 1994 than it has been since 2000. However, the data presented in Figure 10.1 is very misleading.

The problem is that the data does not include all tertiary education expenditure for the initial period. It ignores expenditure on teacher-training colleges, which were run by the provincial education governments up to 2001 and then incorporated into the universities and technikons. Furthermore, data related to expenditure on tertiary institutions situated in the TBVC bantustans is included from 1995 onwards only. As already noted in our analysis of the gross enrolment rates, it is necessary to incorporate all the data pertaining to the tertiary sector for the period over which one wishes to compare changes.

In Figure 10.2, therefore, we estimated the percentage of GDP spent on teacher-training colleges in 1987 and 1996, as well as on the TBVC institutions in 1987. We used enrolment estimates from these institutions for those years, and assumed that provincial expenditure per student in the teacher-training colleges, the TBVC technikons and the universities was the same as that in the SAPSE-subsidised tertiary sector. This is a conservative assumption if one accepts the findings of Hofmeyr and Hall's (1995) audit of teacher-training colleges (according to which expenditure per student in teacher-training colleges was much higher than on students in the university and technikon sector), as well as Bunting's (2002: 82) comment that 'funding under the TBVC regimes had been generous in comparison with that...in the old RSA'. Nevertheless Figure 10.2 reveals a dramatic decline in government expenditure on tertiary education measured as a percentage of GDP from about 1% in 1987 to less than 0.7% by 2009.

FIGURE 10.1 The conventional view of government expenditure on higher education, as a percentage of GDP, South Africa 1987–2009

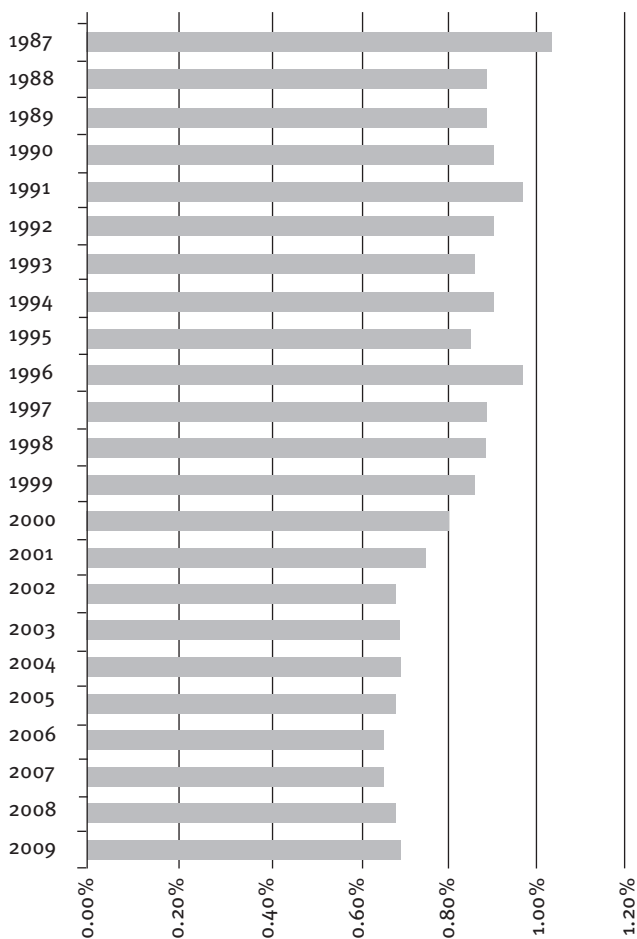


Sources: Steyn and De Villiers, (2006: 89, Table 3.1) for 1987–2003; CHE (2009: 10, Table 2) for 2004–2008; Badsha and Cloete (2011: 20) for 2009.

The 1% of GDP spent in 1987 was an outlier, but the average percentage of GDP allocated to tertiary education for the years 1987 to 1993 was

nevertheless a respectable 0.9% (see Table 10.6). However, the slow growth in GDP and the very rapid rate of growth in student enrolment (7.2%) during this period, means that (using 2005 rand values)²² government expenditure declined from nearly R28 000 per student in 1987 to R15 800 per student in 1993.

FIGURE 10.2 Estimated actual government expenditure on higher education, including teacher colleges and TBVC institutions, as a percentage of GDP, 1987–2009



Sources: See Figure 10.1 and Table 10.6.

As shown in Table 10.6, the faster rate of growth in GDP during the transition years, and a once-off increase in the percentage of GDP spent on tertiary education (to 0.94%) in 1996, meant that (even though growth in student enrolment rates remained quite high at 4.9%) average expenditure per student for 1994, 1995 and 1996 went up to R16 200 (from R15 800 in 1993). But this is still much lower than the average of R20 000 per student that was allocated between 1987 and 1993.

TABLE 10.6 The average percentage of GDP allocated to tertiary education, (teacher colleges and TBVC institutions included), the average state expenditure per student and the growth rates of GDP and student enrolment for different periods, South Africa 1987–2009.

Average % of GDP allocated to higher education	Average expenditure per student (at 2005 rand value)	Averages for years	Growth rates for years	Rate of growth in student enrolment	Rate of growth in GDP
0.90%	R20 500	1987–1993	1987–1994	7.1%	1.1%
0.89%	R16 200	1994–1996	1994–1996	4.9%	3.7%
0.84%	R17 000	1997–2000	1996–2000	-1.6%	2.4%
0.70%	R14 200	2001–2004	2000–2004	5.3%	3.5%
0.67%	R14 900	2005–2009	2004–2009	2.4%	3.7%

Notes: By 1996 the TBVC institutions had been reincorporated into the South African system, so their enrolments formed part of South Africa's tertiary-education statistics, and expenditure on them was included in the Department of Education's annual budget. The teacher-training colleges, however, remained separate as many were phased out, and the remaining few were incorporated in the universities and technikons in 2001. Expenditure per student was calculated by multiplying the GDP for the particular year by the percentage of GDP spent on higher education, excluding teacher-training colleges. The result was then divided by the student enrolments excluding teacher-training colleges. For 1987, 1994 and 1996, the percentage of GDP spent on teacher-training colleges (and the TBVC institutions for 1995 and 1996, before they were incorporated into the South African system), was estimated by assuming that expenditure per student was the same as for other higher-education institutions. The average expenditure per student was then multiplied by the number of students in the teacher-training colleges, adding another 10 000 students for 1987 and another 20 000 students in 1994 as estimates of the number of students at the TBVC tertiary institutions. Finally, this product was expressed as percentage of GDP for the specific year.

Sources: GDP in 2005 rand values: Reserve Bank (2011: Series KBP6006Y). Enrolments excluding teachers: Steyn and De Villiers (2006: 24, Table 2.1). Enrolments teacher colleges: 1987: estimated as midpoint between 1986 and 1988 enrolments contained in Table 31 of Bunting (1994: 72); 1994: Pratt (2001: 30, Table 1); 1996: Hofmeyr and Hall (1995: Table 22). See Figure 10.1 for source of % GDP excluding teacher colleges. The other columns were calculated from this data, as explained in the note to Table 10.6.

As mentioned above, changes in the sector can be viewed in three broad phases. In the first phase, from 1997 to 2000, average spend on tertiary education relative to GDP dropped to 0.84% and the economy grew a little more slowly at 2.4% per annum. Nevertheless average expenditure per student increased to about R17 000 because student enrolment decreased by 1.6% a year.

In the second phase, from 2001 to 2004, the average percentage of GDP spent on tertiary education decreased further to 0.7%, and enrolments increased fairly rapidly at more than 5% a year. Thus, even though GDP grew by 3.5% annually, expenditure per student declined to the lowest average for any of the periods. At just R14 200, the amount per student was less than half of what was available in 1987. Not surprisingly, the higher-education institutions took tremendous strain during this phase.

In the third phase, from 2005 to 2009, a new funding formula was introduced, and three-year expansion agreements were strictly implemented. These measures restricted overall student growth to just 2.4%, and meant that although the average GDP % dropped to an all time low of 0.67%, the average expenditure per student increased somewhat to R14 900 (see Table 10.6).

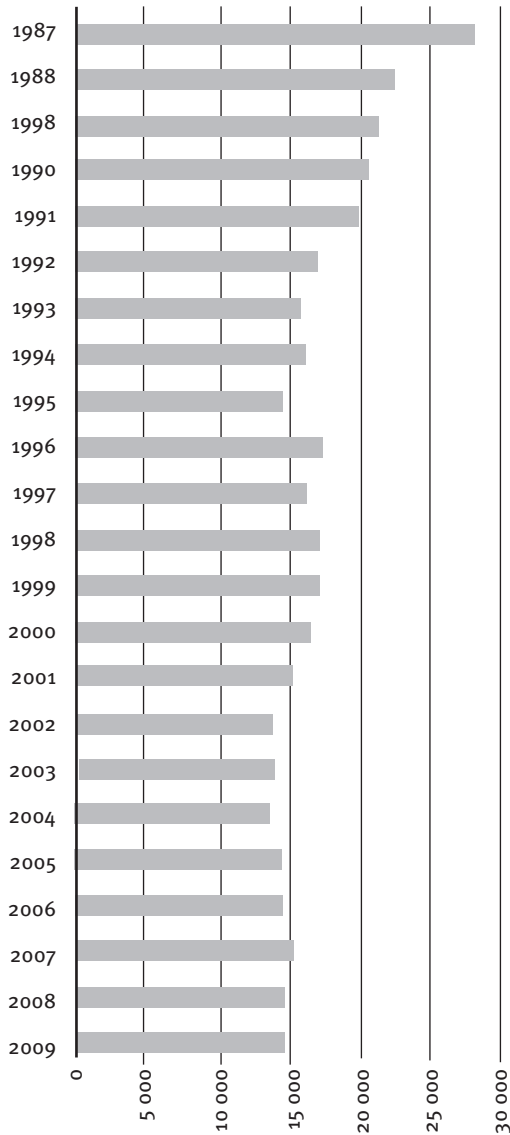
Thus the three different phases of growth related to student enrolment after 1996 cannot be explained simply in terms of disappointing outputs from the secondary schools. Clearly the decision by the fiscus to reduce the proportion of the GDP allocated to the tertiary institutions played a key role.

The declining percentage of GDP allocated to tertiary education, combined with the growth in student numbers, resulted in a decrease in government's contribution per student (see Figure 10.3).

From directives issued to the tertiary institutions by the Department of Education (2005c), it is clear that a decision was made to keep student numbers down in order to help the state to keep within GEAR's medium-term expenditure framework. Thus the failure to significantly increase enrolment rates between 1996 and 2009 was also a consequence of planning decisions made by the Ministry of Finance and the Ministry of Education, which were committed to maintaining a growth rate in student numbers of about 2% a year to ensure that per student expenditure did not drop any further.

As corollary of the reduction in the per-student funding allocations, student fees increased, as did student indebtedness to the universities. The commitment to macro-economic discipline enshrined in the GEAR policy probably also explains the 'introduction of measures to prevent students with outstanding fees from enrolling' – a factor that, in addition to the poor senior-

FIGURE 10.3 Government expenditure per tertiary student, in rand, South Africa 1987–2009



Note: All amounts are reflected at 2005 rand values.

Sources: Our own calculations based on the same sources as used in Table 10.6.

certificate results, Steyn and De Villiers (2006: 25) blame for the surprising decrease in enrolments after 1996. Ironically, the democratic government had the legitimacy (that the apartheid government had lacked) to pressurise the tertiary institutions into suspending students who could not afford fees. Since fee payments were not strictly enforced before and during the transition period, particularly at the universities and technikons previously reserved for black students, the exclusion of students on the basis of their failure to pay fees contributed to a dramatic fall in student numbers at many institutions from 1996 onwards. The SAPSE formula in place at that time based state funding on student numbers adjusted by a growth factor. Thus many institutions would have done much better financially had they stuck to their earlier policy of not insisting on the payment of fees.²³ And, as found by Breier (2010a), financial exclusions have continued despite the expansion of the (often badly targeted) National Student Financial Aid Scheme (NSFAS), which, at best, helps students with their fees but seldom covers their subsistence costs.

The rapid expansion of student numbers that took place between 2001 and 2004 was not sustainable because, by 2003, expenditure per student had reached a low of R13 700. But the situation for tertiary institutions would have been very different if, with the phasing out of the teacher-training colleges, the 0.13% or more of the GDP that was being paid to these institutions annually via the provincial education departments made available to the other tertiary institutions. However, probably because of the strict discipline imposed under GEAR, this did not occur.²⁴

As far as the broader question of funding tertiary education is concerned, we feel strongly that, given the real and substantial danger of perpetuating the inequalities created by apartheid, a strong case can be made for significantly increasing the proportion of the GDP spent on tertiary education, thus reversing the marked decline experienced since the mid-1990s. For a wide range of economic, political and social reasons it is vital to ensure that a substantially higher proportion of African and coloured South Africans obtain a good tertiary education. However, we also have to accept the view of the Department of Finance (signalled by the very substantial cutback in the proportion of the GDP allocated to tertiary education) that the steering of this sector needs to improve. Quality control within the sector has to become far more effective than has hitherto been the case.

Government inefficiencies in managing the tertiary sector

From 1996 onwards a series of direct and ad hoc interventions by government negatively affected the expansion of tertiary education. First, as has already

been mentioned, university administrations were pressured not to readmit students who could not pay outstanding fees. This led to a high dropout rate among African and coloured students for financial reasons. Second, following the 1996 Green Paper on Higher Education Transformation, some universities came under pressure to disband their traditional degree offerings and replace them with programmes that it was claimed, would better prepare students for specific careers. Anecdotal evidence suggests that the fact that some 'black' universities (such as the University of the Western Cape) did away with certain degrees, such as a BA in History and English in favour of programmes such as Tourism Studies, further contributed to a shift away from such institutions. A third initiative was the merging of a number of institutions – a process from which there have been no clear benefits, and which incurred very significant direct and indirect costs (see OECD 2005 for a discussion of these). Finally, from the late 1990s, the tertiary institutions have been required to put much energy into new systems of reporting and planning, often apparently mainly for the sake of window dressing.

Thus, very under-resourced and often only partly informed bureaucrats in the Department of Education got involved in far too many ad hoc intervention measures. One is reminded of central planners in the Soviet Union who tried to manage the Soviet economy in great detail, and failed in most of their attempts. Instead of effectively steering the broad direction of transformation in the tertiary sector from a distance, the Education Department has tried to bureaucratically manage universities – a tendency that has been compounded by the planning processes it has imposed.

However, it is our conviction that there are two further key factors that explain the government's failure to steer tertiary institutions in the direction it intended: (i) the introduction of an inappropriate funding formula in 2004, and (ii) the fact that far too much reliance is placed on micro-managing universities via three-year rolling agreements. For the remainder of this chapter we outline some of the problems with the government's approach and propose an alternative that has the potential to enable universities to meet the challenges South Africa has to face far more effectively.

The potential role of tertiary education in South Africa and the development of a compatible funding formula

In this section we first consider the role that tertiary education ought to play in South Africa and we argue for what we call a social-democratic approach to tertiary education. By this we mean that tertiary education has as its goal the optimal development of the capabilities of all citizens. Given the broader

social and political challenges facing South Africa, this is an important objective in itself, over and above the goal of meeting the skills needs of the economy, or, as is some times emphasised, the skills needed to participate in the knowledge economy. Against this background we consider the limitations of the existing funding formula, and broadly outline an alternative that has the potential to bring about the much-needed changes in the tertiary sector.

In the 1997 White Paper on Higher Education (Department of Education 1997: 1.3) tertiary education was seen as helping the nation to realise a variety of objectives:

- To meet the learning needs and aspirations of individuals through the development of their intellectual abilities and aptitudes throughout their lives. Higher education...is...a key allocator of life chances and important vehicle for achieving equity...among South African citizens.
- To address the development needs of society and provide the labour market, in a knowledge-driven and knowledge-dependent society, with the ever-changing high level competencies and expertise necessary for the growth and prosperity of a modern economy...
- To contribute to the socialisation of enlightened, responsible and constructively critical citizens...
- To contribute to the creation, sharing and evaluation of knowledge. Higher education engages in the pursuit of academic scholarship and intellectual inquiry...through research, learning and teaching.

In most subsequent documents on tertiary education in South Africa at least two additional broad objectives are put forward, namely, to enhance equity and economic development. For us a more fundamental goal incorporates both of these objectives; that is, tertiary education needs to play a key role in nation building. Whereas Verwoerd saw tertiary education as preparing individuals to serve different ethnic groups, we argue that tertiary education should help create a united nation in which the development of the capabilities of all South Africans takes priority.

It is often argued that the goals of equity and economic development are in tension with one another – equity may require giving priority to black South Africans to access tertiary education, whereas economic considerations emphasise giving access to higher education to those students who obtain the best results in the senior-certificate examinations. We argue that nation building requires a widening of these two objectives. In our view, South Africa should place the same emphasis on tertiary education, and attempt to develop the same broad-based access, as exists in the social democracies of Scandinavia for the same reasons. In other words, the development of human capabilities

must be the primary goal, and not (in the first place) the needs of the economy.

Seen from this perspective, the most important failures of tertiary education during the post-apartheid years are: (i) the failure to significantly increase the overall enrolment rate of African and coloured students, and, (ii) the decline in the enrolment rate of African men, which as noted above was 1% lower by 2007 than it was in 1996.

Although a significant number of black South Africans now theoretically have access to a good tertiary education, the vast majority have no opportunities to acquire the capabilities that would enable them to participate in the higher education sector. Among the few who do actually gain access to universities, a strong urban and class bias is evident. As Branson et al. (2009) show, the chances of a very bright young African man from a subsistence-farming household in a rural area (say Mpumalanga) gaining entry into tertiary education are only a fraction of those of a young African man of average abilities, whose middle-class parents send him to a Model C school in an urban area such as Cape Town. It is hardly surprising that disempowered young men and women, many of whom who have the ability to succeed in tertiary education, and have been given no opportunity to obtain even the rudiments of a proper secondary education, are becoming increasingly disenchanting and seeking ontological security in superficial populism.

If South Africa sees its highest priority as being the development of the capabilities of all its people, significantly more funding must be directed to improving the entire education system, and the Department of Education must urgently put in place a funding formula capable of steering the tertiary education sector towards accommodating the tens of thousands of bright and able young African and coloured people who have so far been failed by the system. A common refrain in South African policy documents is that

The higher education system...needs to be steered to meet national goals and priorities through a combination of instruments, namely, planning, funding and quality assurance (Department of Education, 2005c: 1).

In principle there is no problem with these sentiments. However, when one considers what happened on the ground between 1995 and 2012: (i) the planning process, as argued in the preceding section, often fails to address the most serious problems of the tertiary sector; (ii) in spite of time-consuming quality audits, very little empirical evidence is available on the quality of the outputs of different programmes, departments and institutions; and (iii) the existing funding formula does little to incentivise the realisation of the outcomes that government claims to be committed to.

More macro-planning and less micro-management

South African tertiary institutions have to put a massive amount of work into developing three-year rolling plans, which along with other projects²⁵ are seen as important by bureaucrats in the national education department. In other words, instead of relying on incentives in the funding formula to steer the universities from a distance, the department has relied on central enrolment planning, often with little rhyme or reason (See Steyn and de Villiers, 2006). What is more, although their other plans usually envisage desirable changes, they tend to be unrealisable. For instance, all institutions have made a commitment to transforming their academic staff complement. This assumes a significant increase in the number of Africans obtaining master's and PhD degrees but statistics reveal an overall decrease in the number of postgraduate degrees being awarded (see CHE 2009: 60, Table 20).

Unfortunately the CHE, which has the task of advising government on tertiary education, has often failed to play the monitoring role it should, and has, at times, made serious blunders. For example, it has not raised the alarm about key trends in the system, including the decrease in male enrolment rates since 1996. It is possible that this oversight is due to the frequent emphasis placed on improving female enrolment numbers, a key policy of the 1990s. But gender parity in enrolments (other than at post-graduate level) has long been achieved, and the decline in male enrolment rates is of serious concern. The CHE was also clearly out of touch when it reported glowingly on NSFAS in its October 2009 publication on the state of higher education, stating that 'NSFAS is one of the success stories of South African higher education' (CHE 2009: 28). Yet just a few months later, NSFAS was called before the responsible parliamentary committee to explain audit disclaimers, and a year after that, the education minister had to restructure the NSFAS board 'so that it could deliver on its mandate'.²⁶

Instead of attempting to micro-manage the universities in a fashion similar to that employed with regard to economic planning by the Soviet bureaucrats of yesteryear, the Department of Higher Education should put far more effort into ensuring that sensible macro-parameters are put in place. In particular it should give far more thought to the effective steering of the tertiary institutions from a distance by devising and implementing an appropriate funding formula. Much of the remainder of this chapter is devoted to how the funding formula should be reconstituted to ensure that tertiary institutions are effectively transformed.

Quality control of articles published and qualifications awarded

The massive relocation of funds to published research (discussed further below) clearly indicates the state's intention to encourage research. The problem is, as Walwyn (2008) points out, that all articles published in recognised journals qualify for this funding, regardless of whether they are read or have any impact whatsoever. There certainly is a case for rewarding institutions that deliver world-class research, but, as Walwyn convincingly argues, rewards should depend on the quality of the research, not simply on the quantity.

In the case of the grant for student throughput (discussed further below) there is, as Walwyn also warns, another risk related to simply rewarding quantity. Quality is essential, particularly now that (because of the concerns raised by Walwyn) development grants based on pass rates are being phased out.

Quality control can sometimes be monitored effectively through reviews, as was evident from the CHE review of MBA programmes in 2004, and some external monitoring is necessary to determine whether students who pass a course or are awarded a degree actually have the skills that their success implies. Some centrally controlled testing, along the lines of that introduced in Brazil (see Cloete et al. 2002), should be introduced to ensure that pass rates are not artificially inflated by institutions more concerned about securing the next year's funding than about the impact that badly qualified graduates might have on their reputations. This type of quality control will be crucial if the revised funding formula we propose in the final sections of this paper are accepted.

Restructuring the funding formula implemented since 2004/2005

The existing funding formula was first implemented in the 2004/2005 financial year. In this section we discuss its main features, highlight a number of its short-comings and make some proposals as to how it can be improved.

Reinstate the teaching input aspect of the formula

The government provides two types of grants to tertiary institutions: 'Firstly, block grants, which are undesignated amounts to cover the operational costs of higher education institutions linked to the provision of teaching and research-related services. Secondly, earmarked grants, which are designated for specific purposes' (Steyn and De Villers 2006: 51). When the current funding formula was first implemented in 2004, just over two-thirds (64.1%) of the block grant comprised of an input element that depended on the

numbers of students, the courses, and the degrees or diplomas for which they registered. Courses such as education, law and public administration receive the basic subsidy. The subsidy for students registered for degrees such as the health, life, and physical sciences is 3.5 times higher. The subsidy for subjects, such as languages, social sciences and commerce is 0.5 times higher than the basic, whereas subjects such as engineering, industrial arts and mathematical sciences receive a subsidy 2.5 times that of the basic amount.

However, after the first year, this part of the formula was no longer applicable because the rate at which student numbers were allowed to grow was determined by the department after discussions with each institution (see Steyn and De Villiers 2006 and Department of Education 2006). In such negotiations the department consistently restricted growth in the numbers of arts and social science students.

If, as suggested earlier, the funding allocated for tertiary education is increased to 0.9% of the GDP, it should be possible to actually reinstate the teaching input element of the funding formula and to reward institutions that expand their student enrolments. This would lead to a more rapid growth in students registered. But even if funding is not increased, we strongly recommend that the limitation on the proportion of students allowed to do arts and social sciences be lifted.²⁷ The reason for this is that many of the students from more poorly resourced schools are more likely to achieve an arts or social science degree than one for which a background in mathematics is needed. Thus, while we acknowledge that there may be a case for retaining a differential in the subsidy paid for different types of courses, we suggest that the policy of subsidising arts students as long as they do not constitute more than 40% of the total student body be scrapped. Between 2002 and 2012, the number of social sciences and arts students (excluding the education students) grew at only 0.5% (see 2012: 38, Table C). This slow growth deprives many first-time university applicants of real opportunities for admission to higher degrees.

Reconsider the formula in respect of teaching-output grants

The teaching output subsidy, which, under the SAPSE formula, depended on the successful completion of a particular course, have, since 2004, been awarded only for degrees or diplomas completed. In 2004/2005 the output subsidy for successful completion of the degrees constituted less than a sixth (16%) of the block grant. We believe there is a compelling case for returning to the principle of awarding output subsidies per course completed, rather than on graduation. Breier et al. (2007) have shown that many students 'stop

out' in the course of their studies to earn money or attend to family concerns, but they do often return. In our view, universities should not be penalised for accommodating such students, yet this is the effect of the department's current approach to rewarding graduation rates.

An ideal funding formula would encourage every department and lecturer to strive for the goals set by the central planners, but the current formula makes it very difficult to calculate the teaching output of individual lecturers or specific departments. Thus, although a lecturer or department may have a very good pass rate, the output subsidy accrues only when all courses have been passed. This makes it virtually impossible to use the existing funding formula to determine the micro-level contribution of a particular department or a staff member, or to provide incentives for improved output. However, if success rate is rewarded per course, this output could be monitored and incentivised at departmental level, rather than according to the graduation rate per degree or diploma.

In principle, too, the assumption that an institution produces a teaching output only when a student has completed a degree is open to question. As shown in Breier et al. (2007), students who drop out of higher education after successfully completing a number of courses are relatively successful in obtaining employment. Prospective employers recognise that an employee who has completed several higher-education courses is better qualified than one who has completed no post-school studies.

Thus, on both pragmatic and principled grounds there is a case for linking output subsidies to success rates in specific courses. Of course, an additional incentive for completed degrees or diplomas could also be provided. But even if the education department decides to stay with the present system, fairness requires that it calculate success rates more accurately. Instead of considering pass rates against the number of students enrolled for a particular diploma, the department should consider pass rates against the original age cohort that enrolled for a degree or diploma. This would avoid the danger of punishing faculties when interest in a degree or diploma is growing, or rewarding them when enrolment is shrinking, as was the case at the time of writing. Similarly, when students are studying part time, longer periods should be allowed for completion, as is the case for many distance students.

Redesign the research-output grant

Research-output grants are paid out, based on the research output from higher education institutions two years previously. In 2004/2005, this amounted to nearly an eighth (13.1%) of the block grant.

As noted in Le Roux and Breier (2007), although some South African tertiary institutions have both low throughput and low publication rates, they still receive development grants, ostensibly to improve their research and student output levels. Thus, instead of earning funding by, for example, finding better ways of teaching students who have been badly prepared or increasing their research output, these institutions receive funding regardless, and had, as Steyn and De Villiers (2007) and Walwyn (2008) also argue, no particular incentive to improve. Whereas ‘the redress allocation’ of the late 1990s was seen as disappointing by some historically black institutions, far larger and less well-motivated redress transfers have taken place since 2004 in the form of development grants. Funds that are paid from year to year, regardless of what institutions deliver, clearly perform no effective steering function. Instead, these grants probably reflect the lobbying power of these institutions within the education ministry – that is, their ability to steer the ministry, rather than the ministry’s readiness to steer them.

Allocations to higher-education institutions for research publications and research grants have increased from about R120 million per year in 1999 to approximately R1.5 billion in 2009; the reward for publishing in one of the many recognised journals increased from R22 000 to about R103 000 per article over the same period (CHE 2009: 66). There has been, as the CHE notes, a very significant increase in the number of articles published, but primarily by those universities that don’t receive development grants. Thus, while the funding formula in respect of publications worked for those institutions to which it applied, as Walwyn (2008) argues, it could not have any impact on the universities where the grant was paid out regardless of publication levels.

Give equal weight and funding to master’s programmes

Unfortunately the funding formula has also had a negative effect on the output of master’s graduates. As we warned in an earlier publication (see Le Roux and Breier 2007), lowering the subsidy for standard master’s degrees (consisting of a 50% thesis component and a 50% course-work component) to be equivalent to that of a honours degree, as was done in the funding formula promulgated in 2004/2005, became a disincentive for institutions to enrol this type of master’s student. In the five years from 2004 to 2009 the number of registered master’s students decreased from 6.1% to 5.2% (calculated from, Department of Higher Education and Training 2012: 42, Table D). Given the dire need for more African postgraduates, this outcome is out of line with the stated aims of the education department, but it was to be expected,

given the nature of the funding formula. To maintain the master's enrolment level at 6.2%, about 7 000 more master's students should have been registered between 2008 and 2010.

While there is no doubt that some departments have allowed students to obtain master's degrees on the basis of small dissertations (perhaps too similar to an honours paper), our conviction is that this problem should be addressed through quality control, rather than by trying to reintroduce a research master's degree. In addition, the international trend, as witnessed, for example, by The Bologna Process in Europe, is overwhelmingly towards coursework master's programmes.²⁸

In South Africa, students accepted into research-based master's programmes tend to be from more privileged backgrounds, and those that opt for coursework master's programmes are more likely to be from disadvantaged backgrounds (or mature students admitted on the basis of the recognition of prior learning). We would argue that any master's programme in which at least half of all the credits are earned via a thesis should earn a full master's subsidy. This might contribute to reversing the proportional decline in registrations for master's courses since 2004. Without such an adjustment, universities are unlikely to produce sufficient PhD candidates for the development of future academic cohorts.

The key to a transformative funding formula: rewarding institutions that enrol students from disadvantaged backgrounds.

In our view the most fundamental weakness of the existing formula is not, as Walwyn would have it, that it gives too small a benefit to the institutions that conduct quality research, but that it gives no incentives to tertiary institutions to identify and absorb the many black students with potential who come from destitute households and inadequate schools. We agree that good research should be better rewarded than it is at present, and that poor research that somehow lands up being published should not be rewarded at all. But for us the most crucial need is to find a funding formula with the potential to increase the admission rates of impoverished and underprepared but potentially capable students, particularly from the rural areas.

The differences in the quality of schooling received by the students who exit from South African high schools are, ironically partly because of the end of apartheid, even greater than in the days when the apartheid system was in force. Black students from middle- and upper-class homes now have options. They no longer have to stay in schools designated for their particular racial group, and can choose to attend better schools. The Western Cape province,

for example, has schools in which all students pass their senior-certificate examinations, virtually half obtain a distinction average, and almost all obtain the endorsement needed to access university. Meanwhile, in the same province, other schools receive the same or even more government funding per student, yet very few of their students pass the senior-certificate exams and even fewer obtain the marks required for access to university. Many middle-class black students, and many of the better teachers, have moved to the Model C schools (where government funding is supplemented by substantial financial contributions from parents), and although there are cases where good principals have managed to create a new culture of teaching and learning, township schools have generally deteriorated.

Thus while 'race' was a fairly good indicator of 'under-preparedness for higher education' in 1994 (Ministry of Education 2003: 3.3.4), with the many changes that have taken place since then, 'race' is no longer an unambiguous indicator of deprivation, nor does it neatly coincide with socio-economic class. African and coloured students who have attended, Model C, or private schools tend to do well at university and cannot be considered educationally disadvantaged. Nevertheless, in terms of the existing funding formula, these students are regarded as 'disadvantaged', and the institutions they attend receive the same additional subsidy per black student (once the number of black students exceed 40% of the total) as those that draw their student body from contexts that are truly disadvantaged, both socio-economically and educationally. Since universities receive additional funding for successful throughput, the existing formula thus encourages institutions to favour black South Africans who have benefited from better schooling over those who may even be more capable but who attended poorly managed schools. Given our country's history, and the low enrolment rate of African and coloured South Africans, a strong case can be made for retaining some incentives for institutions that increase the proportion of black students regardless of the type of school they attended, but, as we have shown strong incentives are needed to ensure that students who are socio-economically disadvantaged are increasingly absorbed into the system.

Thus the crucial question is, what kind of funding formula would offer real incentives to higher-education institutions to identify students with genuine potential from socio-economically disadvantaged situations, get them to apply, equip them with the appropriate academic skills, and see them through to graduation? In our view, an appropriate funding formula would enable the Department of Education to steer the sector in this direction without having to engage in often-inefficient bureaucratic management such as the three-year rolling plans.

The details of which parameters should inform a new funding formula call for a modelling exercise to establish the impact of various different options. This exercise has to be undertaken by the education department since it has access to all the relevant HEMIS data. Using this data the department of education could easily determine what type of school a student attended. Was he or she the only student who passed the senior-certificate examinations with an endorsement for tertiary study (which might mean an access rate for that school of as low as 0.7%)? Or, at the other extreme, was the student at a school where 90% or more of learners passed with endorsements? The pass rates of the different schools, which vary across the entire spectrum, are indicative of two things: the quality of teaching the students receive, and the socio-economic status of the students. We propose that, for the purposes of institutional grants, whether a student is considered disadvantaged should depend on how well the student has been prepared for higher education, that is, on the quality of the school attended by the student, rather than on whether students are 'African and coloured students who are South African citizens' (Ministry of Education 2005a: 11).

Exactly what the level of the grant should be, and how it should be increased if the pass rate of the school attended is low, can only be worked out with the statistics necessary to run simulation models. But for illustrative purposes, consider the following possibility: institutions receive a standard grant for students admitted from schools that obtain 100% pass rates with university endorsements, and a maximum additional grant (as much as 50% to 100% more of the basic subsidy) for students admitted from schools with very low pass rates and where only 1% or 2% of the students pass with endorsements. The total additional subsidy could be adjusted downwards in a straight line, either as pass rates improve, or as additional weighting factors are incorporated. Thus we propose that a socio-economic indicator, based on the success rate in the senior-certificate exams of the school the student attended, be added into the process of determining the per-student subsidy.²⁹ We do not wish to propose a specific formula at this stage, but, to illustrate how this idea could be implemented in practice, we outline one possible approach.

Let us assume that 100% of students at a few outstanding schools pass with endorsements. The subsidy for students from these schools would not be adjusted at all (although, if government wishes to retain race as a criterion, the present formula for increasing the overall subsidy for institutions when they increase the proportion of black students from 40 and 60%, could also be retained). On the other hand, the subsidy would be increased substantially for students admitted to university from schools where the endorsement rate

is substantially lower – that is, the lower the exemption rate, the larger the adjustment factor per student. The percentage (k) by which the subsidy is to be increased could be calculated as follows: $k = (100-x)/2$, where x is the percentage of students from the relevant school who attained the necessary senior-certificate endorsement.³⁰ This means that the subsidy tertiary institutions would receive when admitting students from schools where no one obtained marks high enough to qualify for access to university, would be adjusted upwards by 50%. The subsidy for students from schools with a 50% success rate would be adjusted upwards by 25%, etc. The actual formula used could, of course, work differently and depend on all sorts of considerations. For example, one simple modification would be to double the subsidy increase for any specific success rate, as shown in Option 2 in Table 10.7.

TABLE 10.7 Possible subsidy increases depending on the percentage of pupils from an applicant’s school who obtain senior-certificate passes with endorsements for admission to university

Percentage of students who pass with endorsements (x)	Percentage increase in subsidy Option 1: $k = (100-x)/2$	Percentage increase in subsidy Option 2: $k = (100-x)$
100%	0%	0%
75%	12.5%	25%
50%	25.0%	50%
25%	37.5%	75%
0%	50.0%	100%

A number of potential benefits arise when using a socio-economic criterion to determine the degree to which a student is disadvantaged. First, and most fundamentally, it destroys the neo-liberal flavour of some other versions of the ‘steering from a distance’ approach. If implemented, this system would no longer bestow more benefits on the economically better off. In fact, given a sufficiently progressive grant, this system could load the dice in favour of the socio-economically disadvantaged as the potential reward for a university that enrolls a student from a poorly resourced school who eventually obtains a PhD would be significant, as the subsidy for this student would continue to be higher for all years of study than the subsidies obtained for students from well-resourced secondary schools. Second, it creates the possibility of free or lower education costs for students from socio-economically disadvantaged

backgrounds, without them having to take onerous loans. Finally, if correctly constructed, the system would enable the government to fund a diverse range of higher-education institutions without having to resort to options such as development funds.

Reducing or scrapping fees on the basis of socio-economic indicators

The case *for* student fees in the South African context has been argued by Steyn and De Villiers (2007). Their arguments are similar to those put forward by economists worldwide, including Nicholas Barr (1993). The greater the income equality in a country, the more valid these arguments become. However, South Africa has one of the most unequal income levels in the world: the most affluent quintile (20%) of households receives 62.2% of household income and the least affluent quintile receives only 3.5%. Various studies (see, for example Breier et al. 2007, 2010b) have confirmed that low-income students are dropping out of South African universities for financial reasons, even when they are academically successful. Even if they receive NSFAS support, their loans or bursaries seldom cover anything more than fees, and students find that they have to cover all other costs (accommodation, food and other personal expenses, as well as books and other study resources). In addition, poor families often tend to regard bursaries as a source of household income, thus placing a further burden on students. In this context it is unsurprising that students often work part-time to support themselves or enter full-time employment and 'stop out' temporarily. Many other school-leavers avoid tertiary study entirely, partly because they see no way of affording it and are reluctant to trap themselves in a seemingly endless debt cycle.

At the same time, as noted earlier, higher-education institutions in South Africa are under tremendous pressure as a result of the significant increase in student numbers and the cut backs in the government's contribution to the sector (from about 1.01% of GDP in 1987 to 0.69% in 2009 as shown in Figure 10.2).

Institutions have thus been forced to increase their fees, and the more prestigious ones have increased fees quite dramatically. In an insightful paper on the dynamics of competition amongst universities Van Vucht (2007: 15) points out that:

Even though student-aid policies are designed to create opportunities for the least advantaged, increased competition leads institutions to focus either on those students who have the financial resources themselves, or on those who have the highest abilities (and who can be offered grants).

Since an important determinant of how well students cope with the higher-education system is how well they are prepared, the present funding formula is thus likely to lead to exactly the consequences Van Vucht warns against. Hence our proposal that, until the overall quality of schooling improves, universities should be rewarded for admitting students who show potential from schools that generally have bad results.

In addition, we suggest that, while providing progressively higher grants for students from disadvantaged schools, the government should also require, or, at the very least, permit institutions to charge much lower or no fees to socio-economically disadvantaged students. In fact, using the funding formula suggested, this would work in the universities' own interests because they would receive much higher subsidies for accepting those students. In our view, if students from the worse-off schools did not have to pay fees, or paid progressively lower fees as a form of compensation for the poor schooling they received, they may well seek entry to tertiary education in increasing numbers. Were this proposal accepted, NFSAS funding could provide for the costs of study not supported by the subsidy (including accommodation, food, etc.). It could also contribute towards the fees of less well-off students who attend schools that obtain good results.³¹

Scandinavia's social-democratic stratagem was and still is not to have any fees at all. We are not suggesting that this would be appropriate in the South African circumstances as it would deprive the universities of an important source of funding. Given the high private returns on education, the financially privileged are willing to pay a significant premium for their right to study. Instead, the changes we propose would allow institutions to continue to raise funds through fees from students in the more affluent socio-economic quintile, while exempting or giving significant discounts to those in the less well-off quintiles. Not only would this bring additional resources into the higher-education arena than would be the case if all fees were scrapped, but it could also, as Adam Habib (2006) argues, offer a better guarantee of academic freedom than would be the case if the institutions were dependent solely on state funding.

Applying the same formula to diverse institutions

The unsuitability of the existing funding formula for the diversity of institutions that need to be supported, has led some to argue for a return to the situation South Africa had before, and which is still in place in many other countries where different funding regimes cater for different types of institutions. Our contention is that, if the existing formula were appropriately modified, it

would be sufficiently flexible to support different types of institutions and a uniform regime could be maintained.

In principle, the existing funding formula rewards institutions that obtain high pass rates, good publication records and an adequate throughput of master's and PhD students. However, the many institutions in South Africa that attract students that are badly prepared for university tend to be unable, without drastically lowering standards, to maintain the same pass rates, generate the same number of publications or have the same throughput of master's and PhD students as institutions that attract the better-prepared students. Therefore, in recognition of the fact that they need funding, these institutions receive development grants, but the grant system does not reward those universities that deliver or censure those that do not. In other words, the grants are but a form of handout and offer no real incentive to more effective delivery.

If institutions that cater disproportionately for disadvantaged students were to obtain additional subsidies as we have proposed, they should earn enough to be able to afford the academic development resources needed to support these students, and the need for development grants would fall away. And where these institutions improve their publication and graduate-throughput records, they would then earn funding for these outputs, rather than face having their development grants cut, as is currently the case.

Meanwhile, institutions that are already academically successful would be motivated and financially supported to develop better ways of identifying which students from disadvantaged schools have the potential to succeed at tertiary level.

Considering a diversity grant

With the exception of one traditionally Afrikaans university where the language of instruction has remained an issue, most historically white universities now have a very substantial number of African and coloured students. However, except where they were merged with historically white institutions, virtually all the black universities have remained black. What is more, in the case of some of the rural institutions, they predominantly draw their students from a specific ethnic group. Is it not time for the government to consider a diversity grant, which would encourage an institution to diversify its student body? We recommend that this be given serious consideration.³²

Conclusion

Three types of change are needed if higher education is to live up to the expectations of raising enrolment rates to 30% proposed by the National

Education Commission in 1996 or even the more modest 20% of the National Plan (Department of Education, 2001: 36). Firstly, the schooling system needs to be improved dramatically. However, this is a long-term goal, and is unlikely to be realised soon. In the short to medium-term, the tertiary sector will, therefore have to do more to accommodate students who are badly prepared.

Secondly, the ability of the tertiary sector to deliver in this respect would be much enhanced if the funding formula were changed. And finally, as noted, the government's contribution to higher education as a proportion of the GDP, and in terms of the real contribution per student, was significantly higher in 1987 than it is today. If South Africa is really committed to successfully entering the information age, it is essential that this decline be reversed at the very least, and that the government's contribution be increased to about 0.90% of GDP (from 0.69% in 2012). Should the changes in the funding formula we proposed be introduced simultaneously, significantly more black students with the potential to succeed could be accommodated in the country's tertiary institutions.

Far too small a proportion of black South Africans are being properly prepared for the twenty-first century; apartheid inequalities are still with us. Van der Bergh (2010) provides a number of indicators of this: in 2000, the average per capita income among whites was nearly nine times that of black Africans. Since 1994, inequality overall has worsened, he says, but its racial dimensions have 'softened' with an increase of inequality within racial groups, largely as a result of the rapidly growing black middle class, which, in turn, are largely the result of black-economic-empowerment policies.

The potential for racially divisive conflict remains high although the picture is perhaps more complicated than it was in 1994. Nowadays, a groundswell of unemployed youth, largely male, and largely without tertiary education, are being led by other youth, with the same gender and educational profile, who have, nonetheless, managed to enrich themselves greatly through deals that accrue to, for example, senior members of the ANC Youth League.

Would tertiary education make a difference to the lives, aspirations and political consciousness of the youth? It is our contention that it would, and that restructuring the funding formula combined with a small increase in the proportion of GDP allocated to higher education may be all that is needed. The inability to extend numerical and 'epistemological access'³³ to tertiary education to a far greater proportion of South Africans, together with an inability to significantly improve the primary and secondary education, might well turn out to be the greatest failure of government in the first two decades of democracy.

Notes

- 1 In this chapter we refer to the population categories African, coloured, Indian and white. The term 'black' is used to denote all the population groups other than white. While we do not wish to perpetuate the practice of racial categorisation that underpinned South African society under apartheid, the use of these terms is still necessary to understanding South Africa's history and to monitoring the effects of attempts to achieve equity and redress.
- 2 'Gross enrolment rate' is the term used in the international literature for what in South Africa is commonly referred to as the gross participation rate, that is, the percentage calculated by considering all tertiary students, regardless of age, as a proportion of the 20–24-year-old age cohort in the population as a whole. Enrolment rates (not preceded by gross) are, strictly speaking, the proportion of only the 20–24-year-old cohort in tertiary education (see Steyn and De Villiers 2006: 26). In this chapter, although the word gross is sometimes dropped, as is mostly the case in South African policy documents, both enrolment rate and participation rate refer to the total number of tertiary students of all age groups relative to the 20–24-year-old age cohort.
- 3 This chapter develops and refines arguments first put forward in a paper delivered at the first Annual Conference of the the Southern African–Nordic Centre on 6 December 2007. An edited version of the chapter was published by the Friedrich Ebert Stiftung as an occasional paper in late 2012 in an effort to make the content more widely available. We would like to thank SANORD and the editors of the this volume for granting permission for us to do this.
- 4 In particular, we argue that South Africa should strive to develop the same broad-based access to tertiary education as exists in the Scandinavian social democracies. Given the realities of South Africa, however, we argue that fees should not be scrapped for the better-off students, but that the higher subsidy given to students from disadvantaged backgrounds should enable institutions to scrap or significantly reduce fees for this section of the student body.
- 5 Bundy (2006) provides an excellent overview of the reforms in the United Kingdom, and considers the possibly ominous consequences, were South Africa to follow this route.
- 6 For the often critical response from various academics to Jansen's lecture, see Hoadley (2004). And for an interesting take on the views of various participants in the South African debate, and on the importance of a degree of financial independence to maintaining academic freedom, see Habib (2006). Of particular importance, although only indirectly relevant to this chapter, is Habib's argument that the higher-education system 'must also reflect a plurality of ideological voices including those that are intellectual dissidents in our society' (2004: 3).
- 7 The only estimate we could find of enrolment in private tertiary institutions was in a presentation by Cloete (2011: Slide 41) which provides 'provisional headcounts'

for the South African higher and post-secondary education, and indicates that there are 81 596 students in private institutions. If one excludes the post-secondary colleges and considers only the 23 public tertiary institutions and the 98 providers of private higher education, this means that private providers enrolled approximately 8.4% of students in 2010.

- 8 See Kruss (2004) and Subotzky (2003) for analyses of the private sector.
- 9 At the University of Natal, black students were, however, taught separately from the white students.
- 10 The University of Fort Hare, located in the small rural town of Alice in the Eastern Cape province, was the premium black university in southern Africa until 1950, when the government intervened and prohibited the acceptance of Africans from outside South Africa. Under apartheid the institution was earmarked to become a tribal college for Xhosa-speaking Africans by the late 1950s.
- 11 Commonly known as the TBVC states, these were 'homelands' or 'bantustans', which (between 1976 and 1981) accepted the nominal independence on offer during the apartheid era. Their population statistics, enrolment data and also their budgets were not incorporated into South African statistics until after 1994, when the new democratic government reincorporated them into South Africa. None of these territories were ever recognised by any other state as independent, but many of the official statistics for South Africa simply exclude these areas for the period during which they were nominally independent.
- 12 The word *verligte* was first coined in the South African context by Wimpie de Klerk, then editor of the *Transvaler* and brother of FW de Klerk. It refers to someone who is enlightened; it carries positive connotations in contrast to the term 'liberal', which was used by the National Party to brand any Afrikaner who deviated from apartheid dogma, and the term *verkrampste*, which refers to conservatives.
- 13 The figures usually quoted, by Steyn and De Villiers (2006) for example, exclude the students undergoing teacher training up to 2001, and the students in the TBVC institutions up to 1994, after which they are included. Furthermore the figures include the students enrolled at the technikons from 1986 onwards, but not for the preceding years. This makes comparisons over time misleading. In Table 10.1 we have included both these groups in our second set of figures from 1994 onwards, and in Table 10.2 we have included estimates of the students receiving teacher training from 1986 onwards. Whichever set of figures one uses, the growth in the number of black students from the mid-1970s to 1994 was clearly quite phenomenal. If one uses the conventional data (see Table 10.1), black tertiary enrolments increased 14-fold from 19 752 in the mid-1970s to 273 526 by 1994. This means that black student numbers in this period increased from less than a sixth (16.1%) of the total number of students in 1975 to over half (55.2%) by 1994. Using these figures, the overall annual growth rate in student numbers for this period was about 7.5% and black enrolment grew at about 14%. In fact, if one

includes the students in teacher-training colleges and the TBVC institutions, the proportion of black students was already over 60%, by 1994.

- 14 When the De Lange commission reported in 1981, it attempted to put forward a new educational policy and ideology. Making a sharp break with the overtly racial discourse of the Verwoerd period, it took a technocratic approach, focusing on the need for education to underpin economic development. The commission recommended that the government should aim to provide equal educational funding for all, and allow tertiary education and private schooling to be racially integrated. It also proposed that technical education be given more emphasis, and that industry be encouraged to participate in funding educational projects and providing in-house training (Morris and Hyslop, 1991).
- 15 Work by Psacharopoulos (cited in Steyn and De Villiers, 2006: 10) and others concluded that the rate of return from tertiary education in sub-Saharan Africa was about 11 as against a return of 25 for primary education. In OECD countries the return on tertiary education was only 8.5, but the figure for primary education was the same – hence the conclusion that, given its much higher rate of return, Africa should prioritise primary education. Since estimates for South Africa were returns of 12 and 22 respectively, the same logic would have applied, had the World Bank been giving us advice at that time; South Africa's international isolation might have prevented this kind of pressure from being applied.
- 16 No reliable data are available on enrolment in private institutions, apart from an estimate of total enrolment for 2010 in Cloete (2011, Slide 41). If this estimate is correct, and if one accepts the same number for 2009 as 2010, the enrolment rate for 2009 would have been 1.7% higher. We do not know the numbers or population groups of these students for the earlier years.
- 17 We use the rates as published by Steyn, but given problems with the data, it seems specious to give estimates to the second decimal as he does.
- 18 It should be noted that given the age distribution of the 2001 Census, we adjusted the mid-year population estimates for 2009 for the Indian 20–24-year-old age cohort downwards by about 15 000 as discussed in the note to Table 10.3. Should one accept the 2009 age cohort estimates, the Indian enrolment rate was 45%, not 51%, in 2009.
- 19 This information was obtained from figures supplied by the Department of Education's Higher Education Management Information System (HEMIS), see Breier and Mabizela (2007).
- 20 See 'SA pupils fail literacy tests, complex reading skills are introduced too late', Pretoria News, 30 November 2007. Available online.
- 21 Ditto Note 20.
- 22 Average government expenditure per student is given at 2005 rand values throughout this chapter to ensure that real values can be compared.

- 23 Another reason for the fall in student numbers at the institutions formerly reserved for black students was that the historically 'white' institutions were now open to black students.
- 24 In fact, although the closing of the teacher-training colleges was recommended in an ill-conceived report to the Department of Education (Hofmeyr and Hall, 1995), some observers argue that GEAR should also carry part of the blame for this process. As noted by Pratt (2001:12), 'The GEAR policy emphasised new goals of efficiency, effectiveness, and affordability over developmental objectives, and ushered in a new climate of competitiveness. Provincial Treasuries were constrained by the national Departments of Finance and State Expenditure to conform to GEAR principles and guidelines in their respective budgeting processes...Teacher-training colleges were perceived to be a high-cost activity, and witnessed a greater degree of rationalisation as provinces grappled with huge deficits, and diminishing allocations in real terms. Initial expectations of substantial investment in capacity-building and human-resource development soon dissipated, and in teacher-training colleges, the conviction grew that economic exigencies driving rationalisation had supplanted educational and developmental considerations.'
- 25 Replacing academic degrees with the skills-oriented programmes mentioned earlier is one example of such projects.
- 26 See 'NSFAS moves from audit disclaimer to unqualified audit', press statement issued by Blade Nzimande, Minister of Higher Education and Training, 10 October. Available online.
- 27 The argument favouring this restriction is that the labour market offers more opportunities for students with commerce or science degrees than for those who obtain an arts degree (see Pillay 2003). In our view, this is very short-term perspective. In 1956, with respect to the integration of Afrikaners into the management structures of the economy, Prof Jan Sadie argued that this was a long-term process. He said the first generation getting tertiary education usually have to become teachers (with arts degrees), the second generation might become professionals, and the third generation will become leaders in commerce and industry (see Thom, 1956).
- 28 Prof David Cooper from the Department of Sociology at the University of Cape Town brought this point to our attention. See also the 'Conclusions and recommendations of the Conference on Master-level Degrees' from The Bologna Process, Helsinki, 14–15 March 2003. Available online.
- 29 It is possible that if this system is implemented some students might choose to attend schools where the overall pass rate is lower in order to become more attractive candidates to universities. They would risk being less well prepared, but if they succeed they may, if some of our other proposals below were accepted, be

liable for much lower fees or no fees at all. This could, in fact, be beneficial, not only for the individuals who adjust their behaviour to benefit from the system, but also for society as a whole. More middle-class children, some of them in all likelihood white, may move into the black schools that have been denuded of students from middle-class backgrounds.

- 30 See Department of Education (2009: 21, 24, Table 11) for a provincial breakdown of this percentage.
- 31 For example, the children of domestic workers whose parents live at their employers' premises and attend Model C schools.
- 32 To quote the NCHE (1996: 1.2.1), 'There has been a tendency for higher education institutions to replicate the ethnic, racial and gender divisions of the wider society. This has limited the role of higher education in constructing a critical civil society with a culture of tolerance, public debate and accommodation of differences and competing interests.'
- 33 Wally Morrow (1992) distinguished between mere physical access to higher education and access that ensured the successful acquisition of knowledge and skills.

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