

State Funding as an Enabler for Access and Success in Higher Education

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Abstract

The funding of public higher education presents challenges in most countries. Funding models attempt to find the ideal distributive model to support the production of graduates needed for the economy of any country. In South Africa the demand for higher education grew substantially since 1994, while the ratio of state funding in comparison to the enrolment increase was not proportionate. In 2004 the Ministry of Higher Education implemented a new funding framework in order to address issues of equity, access and efficiency in higher education. The aim of this paper is to analyse the current funding framework and its impact on enrolment and graduate rates in South African Higher Education.

Keywords: South Africa, Higher Education, Funding, Graduate Rates, Enrolment, Access

1. Introduction

In similarity with many other countries, South Africa has also sought an innovative challenge to financing higher education. The demand for higher education in South Africa has risen sharply in the post-1994. Salmi and Hauptman's (2006) reasoning for such high demands for higher education is compatible to the South African situation. These include, the economic value of having higher education is greater than just having secondary education, social pressures encouraging learners to enter higher education once they have completed their secondary education and higher education curricula becoming more relevant to the real economy.

This acute demand for access to higher education places an additional demand on the state to provide sufficient funding for aspirant entrants into higher education. Many of these aspirations are further fuelled by pressure from parents who did not have the opportunity to continue their education for either political or financial reasons. Overall the higher education participation rates in South Africa of around 17.5 % are about the highest in Sub-Saharan Africa. With limited actual higher education data available in Africa, the median participation rate for Sub-Saharan Africa is calculated at only 2.5% (Pillay 2008). In 2007 the Minister of Education, Ms. Naledi Pandor indicated that the state's plan was to increase student numbers in higher education by 100 000 by 2015, thereby increasing the participation rate to 20% (Macgregor2007)

The Ministry of Education implemented a new funding framework in 2004, in an attempt to address the following key objectives spelt out in the Education White Paper 3 (South Africa1997):

- equitable distribution of funds amongst institutions;
- providing access to students who would not normally afford to enter an higher education institutions;
- efficiencies through setting benchmarks for both teaching outputs and research outputs;
- additional funding to assist institutions with specific needs

2. The Realities of the Higher Education Funding Framework

A Public Higher Education Funding framework was implemented in South Africa in 2004. The framework is "... a goal-directed and performance-related distributive mechanism which explicitly links the allocation of funds to academic activity and output and in particular to the delivery of teaching-related and research-related services which contribute to the social and economic development of the country". (South Africa 2003)

Through the medium term expenditure framework (MTEF) process, used by government, a formal motivation and annual negotiation of three-year cycle funds assists government to determine the funding allocation for the higher education sector. The National Treasury reviews budgets by considering growth, affordability within the fiscal framework, the spending and policy priorities of each department in terms of its contribution towards government's strategic

objectives, inflation adjustments, and sector specific issues. The MTEF allocation for the 2011-2015 financial periods in Table 1 shows an average increase of public expenditure to higher education by approximately 8.5%.

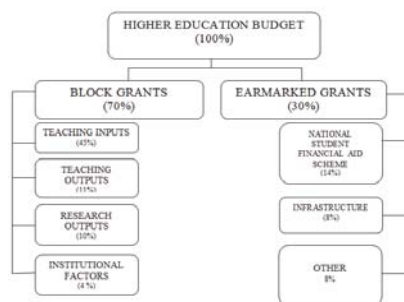
Table 1: Allocation of public expenditure on higher education in South Africa for 2002-2015

	2012/2013 (ZAR'million)	2013/14 (ZAR'million)	2014/15 (ZAR'million)
Block Grants	17 434	18 438	19 565
Teaching Inputs	11 658	12 148	12 717
Institutional Factors	1 012	1 054	1 103
Teaching Outputs	2 537	2 713	2 975
Research Outputs	2 227	2 523	2 770
Earmarked Grants	6 847	7 644	8 505
Nsfas	3 378	3 693	3 915
Infrastructure and output efficiencies	1 800	2 000	2 200
Capital Funds for 2 new universities	0	150	500
Operational Funds for two new universities	100	150	159
National Institutes in 2 provinces	43	45	48
±Research Development	177	177	187
Teaching Development	499	575	609
Foundation programmes	194	205	237
Clinical training of health professionals	367	388	411
Veterinary Sciences	122	129	136
Multi-campus	148	118	95
Interest and Redemption on Loans	15	9	8
African Institute for Mathematical Studies	4	5	0
Total	24 281	26 082	28 070

Source: South Africa 2012, 2

The higher education budget in the framework is allocated into two broad categories i.e. block grants and earmarked funds which can be illustrated in Figure 1. The purpose of block grants is to provide performance related funds for higher education institutions. These grants are subdivided into four sub-categories: teaching input grant, teaching output grant, research output grant and an institutional factor grant.

Figure 1: Higher Education Budget Allocation – 2014/2015



Source: Generated from Table 1

Firstly a **teaching input grant** which is generated by full time equivalent (FTE) students. These are weighted in terms of a cost-based funding grid and a detailed planning grid as summarized in Table 2. This funding is based on the Classification of Educational Subject Matter (CESM) categories used in the higher education management information system (HEMIS). Student enrolment plans of institutions must also be pre-approved by the Minister of Education.

Table 2: Funding grid used as weighting factors for the teaching input factor

Funding group	CESM Categories	U* M+3	Hons* M+4	M** M+5	D** M+6
1	Education, law, psychology, public administration and services	1.0(0.5)	2.0(1.0)	3.0	4.0
2	Business, economics & management studies, communication & journalism, computer & information sciences, language, linguistics & literature, philosophy, religion & theology, social sciences	1.5(0.75)	3.0(1.5)	4.5	6.0
3	Architecture & built environment, engineering, family ecology & consumer sciences, mathematics & statistics	2.5(1.25)	5.0(2.5)	7.5	10.0
4	Agriculture and agriculture operations, visual & performing arts, health professions & related clinical sciences, life sciences, physical sciences	3.5(1.75)	7.0(3.5)	10.5	14.0

Source: South Africa 2009b

Legend: U = Undergraduate Degree, Hons = Honours Degree, M=Masters Degree, D= Doctorate Degree, M+3 = Grade 12 (last high school grade) + minimum 3years post school education

* Weight for distance institutions are given in brackets

** Ratios are the same for contact and distance institutions

FTE's calculations are based on enrolments of year n-2.

Teaching Output Grants are based on graduate outputs of Universities which are determined by the weights attached to these outputs and the benchmarks specified by the Minister of Education. The weighting and the benchmarks set are shown in Table 3.

Table 3: Weighting factors for calculation of the graduates

	Weighting Factor – Actual Teaching Output	*Graduation Benchmark %
1 st certificates and diplomas 2years and less	0.5	22.5 (13.5)
1 st diplomas and bachelor's degrees 3 years	1.0	22.5 (13.5)
Professional 1 st bachelor's degree 4 years +	1.5	18(9)
Postgraduate and post diploma	0.5	54(27)
Postgraduate degrees	1.0	54(27)
Honours degrees/higher diplomas	0.5	54(27)
Non research Masters degrees and Masters Diploma	0.5	30(22.5)

*Distance education institution benchmarks are indicated in brackets.

Source: South Africa 2004.

The improvement in student graduation rates is one of the planned outcomes of the National Plan for Higher Education (South Africa 2001). Research masters and doctoral graduates do not qualify for teaching output grants as this fall under the research output grant.

Research Output Grants are performance grants allocated to institutions for actual publication in journals accredited by the Department of Education and for research masters and doctoral graduates. Research subsidies are distributed using weighting and prices for research as it is presented in Table 4.

Table 4: Weighting factors used to calculate research output grants

Output	Weight
Publication	1.0
Master's degree	1.0
Doctoral degree	3.0

Source: South Africa 2004

The Minister of Education annually determines elements of research outputs, the weighting to be attached to different research outputs and the benchmark ratios applicable to the different categories of higher education institutions. The current norms are categorized into 3 groups i.e. 1.1 output units, 1.7 output units and 2.5 output units per permanent instruction/research staff. An *Institutional Factor Grant* is also built into the funding framework to address socio-economic inequities and institutions that may receive a smaller subsidy because of their size. The Department of Education has decided to use the percentage of students classified as African and Coloured to calculate a "disadvantaged factor" for an institution. The current application is on the basis that higher education institutions with less than 40% FTE students (disadvantaged) will receive no additional funds to their teaching input grant. Those institutions with FTE students (disadvantaged) of above 80% will receive a maximum of 10 % addition to their teaching input grant, while those with an above 40% but less than 80% FTE students (disadvantaged) will receive a proportionate increase in their teaching input grant, of greater than 0% but less than 10%. An institutional factor grant also enables smaller institutions to benefit due to the number of their FTE students. A sliding scale is used in which institutions with over 25000 FTE students receive no additional benefits, whilst institutions with 12000 FTE students receive 9.3% addition to their teaching input grants, and up to a maximum scale of 15% added on to the teaching input units for higher education institutions with 4000 or less FTE students.

The funding framework also provides the additional funds in the form of a *multi-campus* allocation for institutions which are required to deliver teaching services on more than one campus as a result of the changes in the higher education landscape of the country. Currently, institutions that were merged through the restructuring in higher education in 2004, receive a multi-campus factor allocation to compensate them for the additional costs incurred due to the merger.

Whilst block grants represent the largest percentage of the state higher education budget, the new minister Hon Dr BE Nzimande has re-defined the categories of *earmarked grants* for specific purposes. The largest of earmarked grants is the provision in terms of the *National Students Financial Aid Fund Scheme (NSFAS)*. The scheme was initiated to assist students who have the academic potential but cannot afford to pursue higher education. The basis of the Scheme is that students meeting the requirements for the provision of funds based on their poverty level receive a low interest loan, the repayments for which starts only when they are gainfully employed above a certain income threshold. Depending on the students' academic performance up to 40% of the loan could be converted by NSFAS into an outright bursary.

A second major category of earmarked grants relate to funds for *infrastructure and output efficiency funds*. The main purpose of these funds is to improve the institutional infrastructure so that institutions can increase their graduate and research output to acceptable benchmarks.

The new framework also earmarks funds for *foundation programmes*. These programmes are entry level programmes designed to assist students from disadvantaged educational backgrounds to acquire sufficient knowledge and skills to enable them to register for a mainstream diploma or degree programme at public higher education institutions. Institutions will have to make formal applications for funding for a three-year period. Once an application is approved the grant applies for a three-year period. The funding grant will be dependent on the funds available for a particular year.

Most institutions failed to meet the teaching output benchmarks set by the Minister of Education. In order to allow institutions some time to improve their outputs, the Minister of Education approved a strategy to ensure that institutions will not face major financial setback through the application of the new funding framework. The provision of a *teaching development grant* as a grant that is earmarked specifically for the improvement of the poor graduate rate in some higher education institution has assisted universities in the past few years.

Institutions also found it difficult to meet the research output benchmark set by the Minister of Education. In order to allow institutions some time to improve their research outputs the Minister of Education approved a special strategy, similar to that of the teaching development grant, which enabled institutions to benefit from the allocation of a *research development grant*.

3. The Impact on Enrolment and Graduate Rates

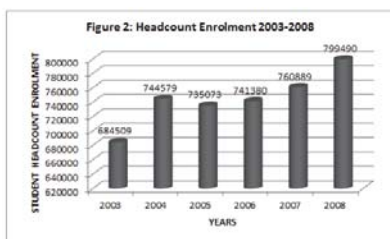
The South African government has through various interventions created open access for all those that qualify to enter it. The most important is the creation of the National Financial Aid Scheme (NSFAS). This scheme provides a targeted financial aid aiming at subsidizing those who do not have the financial resources to enable them to enter higher education. In South Africa poor students passing a family income means test will be able to receive support via the National Student Financial Aid Scheme.

Whilst the need to achieve benchmarks set by the Department of Education can be seen as challenge for teaching

output grants, this must be seen against the background of the huge increase in student numbers since 1989, with the state trying its level best to provide additional funds to improve access and outputs. The greatest challenge still remains in the shifting of higher education access for an increasing proportion of the previously disadvantaged population, as envisaged in the Education White Paper 3 (South Africa 1997). This has to be done in a country which has sectors of health, transport and housing also facing huge resource constraints.

The Minister's statement on student enrolment planning (South Africa 2007) reflects the state's commitment in increasing access and improving graduate outputs in higher education. Although the state's hope of increasing the participation rate to 20% by 2015, may meet with some difficulty if fewer students pass mathematics and sciences on grades acceptable for university entrance (Jansen 2006), the reality is that the state is making a determined effort to create greater access and demand improvement in graduate rates to, firstly, justify the investment in higher education and secondly to provide quality graduates for the economy.

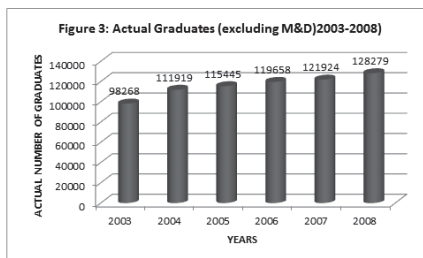
The plan to increase the student headcount in higher education from approximately 738 000 in 2005 to 816 000 by 2010 and to 840 000 by 2015, means greater accessibility into higher education for school leavers. In addition the plan to change the shape of higher education in terms of from a ratio of 29%:29%:42% in science and technology, business management and humanities and education respectively to a 30%:33%:37% shape will add value for the South African economy. Figure 2 reflects the growth in enrolments since the introduction of the new funding framework in 2004.



Source: Generated from HEMIS Data in South Africa 2010

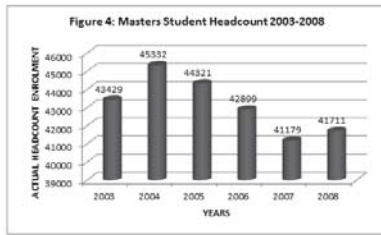
Except for 2005 enrolments have increased. The fact that higher education enrolments increased from 684 509 in 2003 to 799 490 in 2008 i.e. by approximately 17% reflects positively on the South African Government's attempt to create greater access into higher. In 2005 only 12% of the headcount enrolled students attained their first qualification and 4% completed their postgraduate qualification (South Africa 2006). This clearly suggests that more resources, amongst other factors, are needed to improve the graduate rate in higher education.

Although the actual average graduate rate was only 16.3 % in 2005, the plan to increase it to approximately 17% by 2010 will mean at least 22 000 valuable new graduates from the higher education system into the economy. Figure 3 reflects the increase in graduates (undergraduate) from 2003 to 2008.

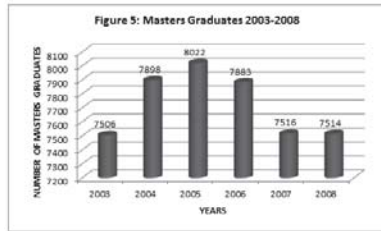


Source: Generated from HEMIS Data in South Africa 2010

The headcount enrolment for masters' degree grew rapidly from 1995 to 2004 i.e. from 22389 to 45332. This over 100% increase seemed to have reached its peak in 2004, as it continued to decrease, albeit slightly to 41711 in 2008. This trend is also reflected in the decrease in the number of Masters Graduate from 2006 to 2008. Figures 4 and 5 confirm this.



Source: Generated from HEMIS Data in South Africa 2010



Source: Generated from HEMIS Data in South Africa 2010

The number of doctorate enrolments grew steadily since 2003 with a non significant decline in 2008. Table 5 indicates that the good growth of approximately 800 doctoral students from 2003 to 2004 did not continue after 2004.

Table 5: Doctoral Enrolments 2003-2008

Year	Number
2003	8315
2004	9104
2005	9434
2006	9828
2007	10052
2008	9994

Source: Generated from HEMIS Data in South Africa 2010

The number doctoral graduates also reflected a growth since 2003 except for 2006 and 2008 when fewer doctoral graduates were produced. Although the growth in doctoral graduates since 1995 has increased by over 75% a much high number of doctoral graduates are required by the country. Table 6 shows the growth pattern.

Table 6: Doctoral Graduates 2003-2008

Year	Number
2003	1047
2004	1105
2005	1189
2006	1100
2007	1274
2008	1182

Source: Generated from HEMIS Data in South Africa 2010

The state's the provision of both teaching and a research development grant has assisted in the graduate outputs. In addition the allocation of infrastructure and efficiency funding for higher education has enhanced the resources available for improving the infrastructure needed to improve graduate rates. For the four period's from 2011-13, the state invested approximately ZAR 3,4 billion to address the infrastructure and academic efficiency of higher education institutions. For the period 2013-15 the state will be injecting a further ZAR 4,4 billion into infrastructure and academic efficiency plans of

higher education institutions.

4. Concluding Remarks

Despite there being a worldwide trend for decreased government support for higher education and increased costs for students and families (Marcucci and Johnstone 2007) the South African government has done relatively well in providing access for the poor into higher education through its national financial aid scheme. The question of whether this enough will always arise. In good times, as seen when the country experienced a reasonable economic growth of around 5% in 2006/7 (Manuel 2007), additional funds were made available to higher education. Although the relative increase in funding as seen in the MTEF allocations in Table 1 has continued up till now, the producing of quality graduates is still dependent on the input into the higher education system. The issue of access has become a subject of vigorous debate in South African higher education. In a post-apartheid South Africa, higher education serves as a medium for economic independence and a route to escaping poverty.

The key question facing higher education managers is whether students with a desire to enter higher education should be prevented from doing so because of grades they could not achieve at school. The argument could be extended as to whether the state's education system prepared them sufficiently to enable them an equal opportunity as their richer or advantaged counterparts. Understandably there could be plethora of views and evidence on this. Whilst most higher education institutions have introduced additional academic support programmes for students coming from poorer secondary schools, it will always be argued that it is not be possible to achieve a higher graduation rates when more funds are actually needed to prepare underprepared students for higher education, improve infrastructure both for academic purposes and student accommodation. At the same time universities are also reluctant to force substantial tuition and accommodation fee increases on students, especially in an environment where over 70% of university drop-outs were black students coming from very low income families (Letseka 2007).

A valuable argument from the state and taxpayers would be whether the constant increases in higher education funding are justified in terms of the growth in graduates available for the economy. Despite this and other criticism of the state's return on investment in higher education in South Africa, the state's increased funding over the last decade has enhanced access into higher education for especially the previously disadvantaged black high school leavers. The impact of the state's investment through its teaching development grant and research development grant can only be reliably measured in the next few years. Likewise the impact of the additional billions of rands for infrastructure and efficiency funding can only be determined in the near future.

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