FIXING HIGHER EDUCATION IN SOUTH AFRICA

A Public Servants Association (PSA) Perspective

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Introduction

The fault lines in South Africa's education system are part of a broader package of problems confronting our country in these tumultuous political times. Concerns about the state of politics, economy, and broader public policy are mounting in the face of a leadership that has lost its steadiness and mettle. On the higher education front, the problems have always been there. The signs of what could potentially be a tectonic shift in the sector began with the Rhodes Must Fall and Fees Must Fall protests, which created what has become known as the Fallist Movement. Since then, unrest has snowballed into anti-outsourcing movement, discontent over language policy in historically Afrikaans universities, and the decolonization project driven by both academics and students.

Agitation for transformation across various spheres of society has clearly reached a fever pitch. What is clear is that failure to take proactive steps to alleviate these problems will concentrate discontent into mass action. When that happens, the challenges that lie behind this unrest become ever more difficult to address, as efforts to improve things must take place against an unstable backdrop. The lesson is clear: problems must be fixed quickly, or those harmed by the continued fractures will turn on the very system itself.

Fixing higher education is a daunting proposition. The problems facing the system are complex, and are closely intertwined with South Africa's history, the primary and secondary education system, the economy and job market, and any number of supplementary structures; not to mention the ambitions of the masses.

Analysing the challenges of higher education requires a broadly encompassing approach. This paper assesses these challenges in two dimensions. First, it offers an analysis of higher education in South Africa, examining its current state, its challenges, and the underlying drivers of these challenges. Challenges will be grouped into two broad categories. The first has to do with access examining factors related to transformation and financial sustainability; and the second deals with quality, with a particular accent on graduation rates and the appropriateness of training for the real world of work. Second, the paper will propose some possible interventions, drawing heavily on international experiences that have been successful in creating positive change.

Challenges to higher education

South Africa's higher education system comprises over 4 000 institutes, including universities, further education and training (FET) colleges, and adult education and training colleges; as can be seen in Figure1 below.[i]

Figure 1: Higher education institutions in SA

	Higher Education Institutes		Further Education & Training Colleges		Adult Education & Training Colleges	
	Public	Private	Public	Private	Public	Private
Number of Institutions	23	119	50	566	3,150	150
Number of Students Enrolled	953,373	97,487	657,690	115,586	306,378	8,690
Number of Staff	48,340	-	16,928	6,846	19,569	476

As discussed below, the current system is the result of reforms to a dispersed and unequal arrangement of higher education under apartheid. The old system was dominated by two key features that have since fallen away. The first feature was the Verwoerdian racial segregation, according to which universities in the urban areas were mainly reserved for whites and those in the Bantustans were designated for blacks, with different groups receiving differentiated access to material and technical resources. Second, there were a number of specialist institutions, notably teacher training colleges. These were largely eliminated because of the glorified position awarded to higher education, which resulted in the calls for the elevation of vital skills (like teaching) to the position of university courses. While FET colleges represent efforts to reinforce technical skills development, they are very much a response to the excessive centralisation that occurred within universities during the reform of education after 1994.
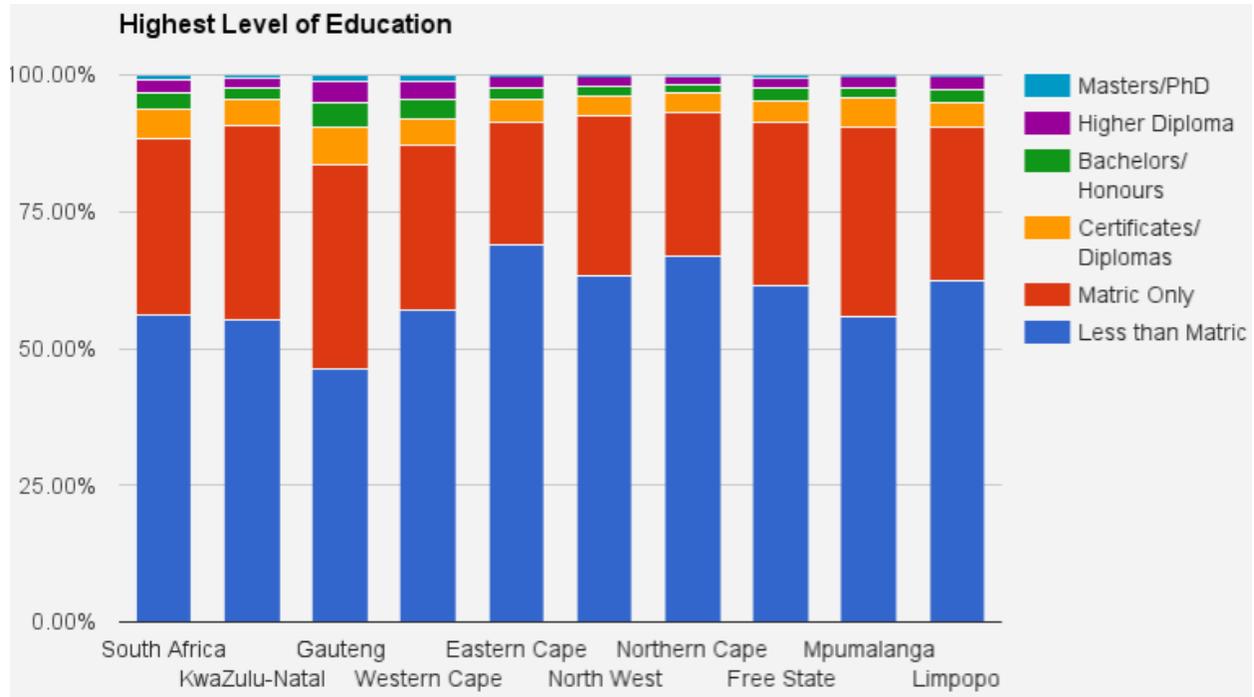
Access

While any university system aims to produce high quality graduates, the absolute primacy of expanding access cannot be underestimated in a country with South Africa's unique history. Decades of denial of access to higher education for the vast majority of the country has resulted in an education system that was structurally designed to cater only to a select few, and that was ill equipped to meet with the demands of justice and fairness, nor those of a skills-based global marketplace.

Across South Africa, less than 3% of the population had a bachelor's or honours level degree, while only 0,75% have a postgraduate qualification. Even within that bleak picture, there are severe racial disparities, with blacks being less likely to gain access to higher education.

Regional disparities also persisted, with poorer provinces producing fewer graduates (as can be seen in Figure 2).[ii]
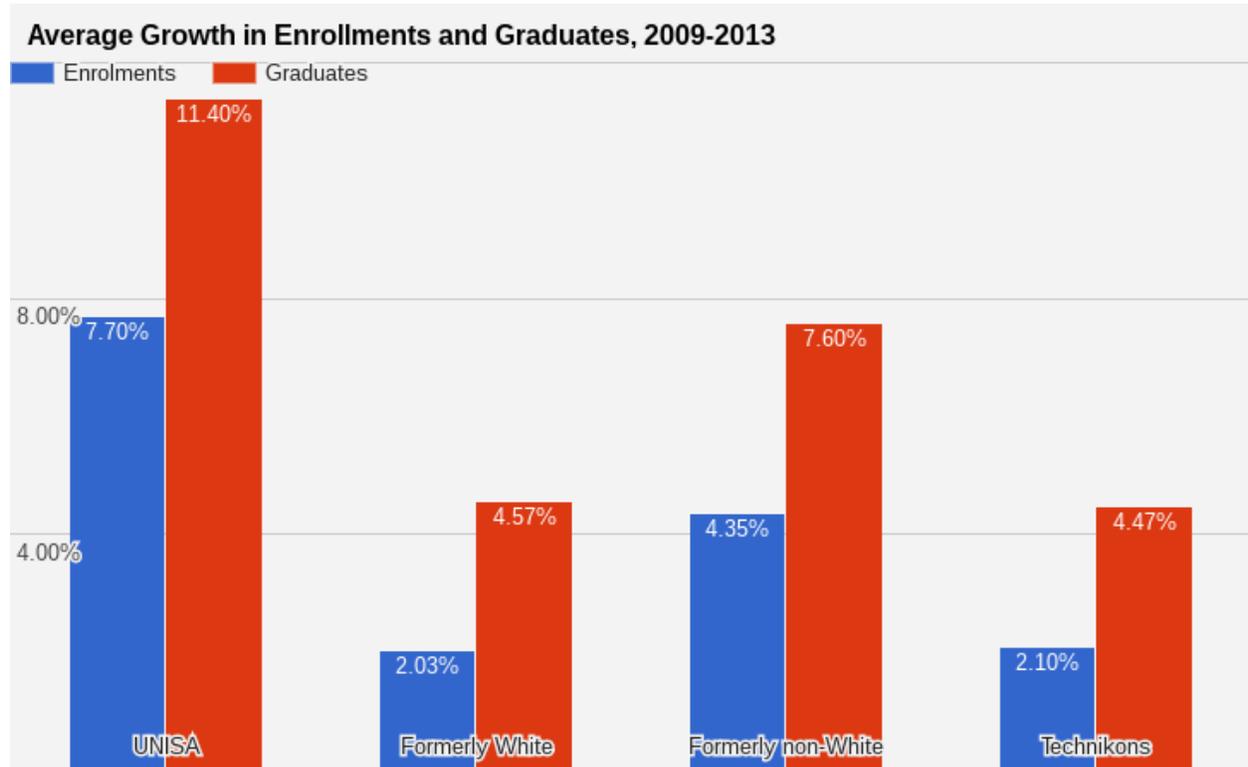
Figure 2: Levels of education in different provinces

Much of this disparity reflects the lasting imbalances amongst older generations of South Africans. Post-1994, the democratic government launched an ambitious effort to expand access to university, through three primary channels. First was the elimination of a multi-track education system, which was fractured between traditionally white universities, traditionally "non-white" universities, technikons, and a variety of specialist education institutions such as teacher training colleges. Many traditionally white and "non-white" universities (bifurcated to African and Coloureds in the main) were merged, and others received expanded resources; while technikons were upgraded to full universities, and many of the specialist institutions were closed, and replaced with new study streams in the university system. Second, the universities themselves were expanded, with increased space for more students. Third, a system of financial support was put in place, most notably the National Student Financial Aid Scheme (NSFAS).

The rapid expansion in student enrolment persists to this day, as can be seen in Figure 3[iii] below.[iv]

Figure 3: Average growth in enrolment and graduates: 2009 to 2013

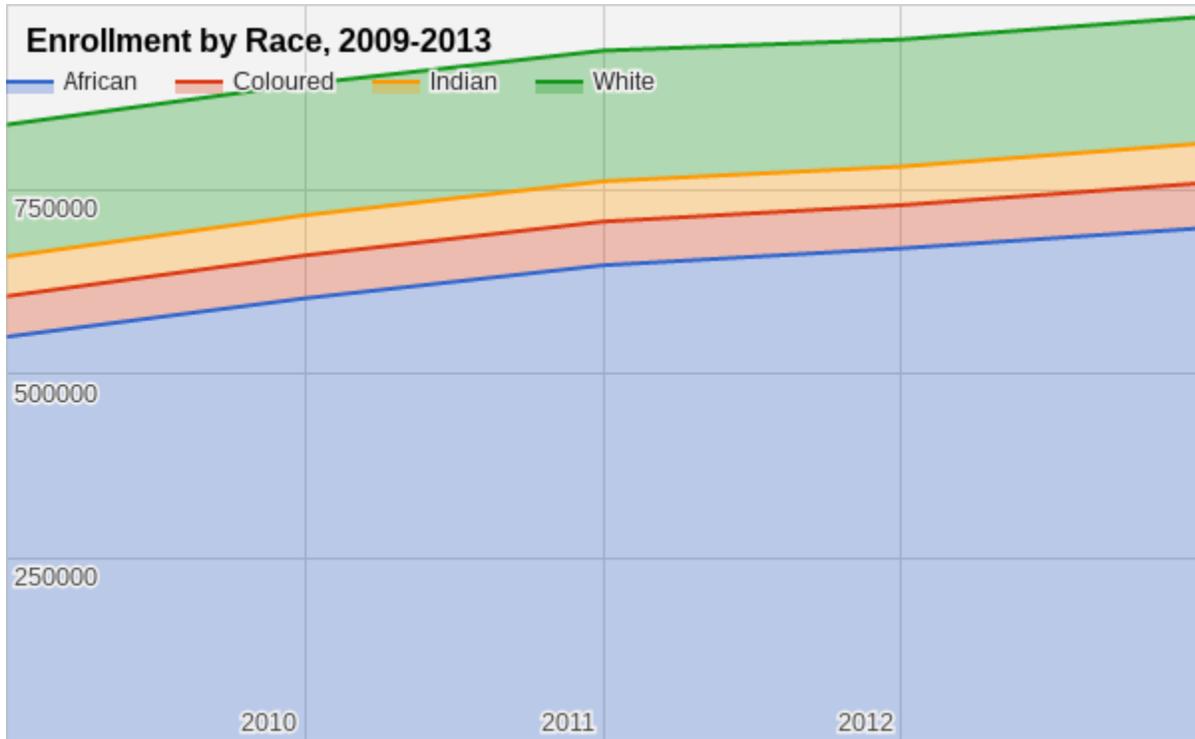**Average Growth in Enrollments and Graduates, 2009-2013**

Transformation

While the expansion in enrolment reflected a general effort to increase university access, there was of course a crucial racial element, in an attempt to give black students access to the high quality education that they had previously been denied. Many of the complaints raised during the recent student protests were not simply about access to university, but access to higher education for more vulnerable members of society, those who cannot easily buy their way into good primary and high school education, and who struggle to afford expensive tuition fees.

There are some positive aspects to transformation. On the gender front, universities, and the education system in general, have been vital engines of gender empowerment. Of the 23 universities in South Africa, all but three enrolled more women than men in 2013, leading to a gender imbalance in favour of women of over 163,000. Similarly, the big picture image of racial transformation is positive. As can be seen in Graph X, Africans represented just under 70% of total enrollments in 2013, while Coloured and Indians students both represented around 6%, and white students represented 17,5%. This still represents a substantial imbalance - the ratios
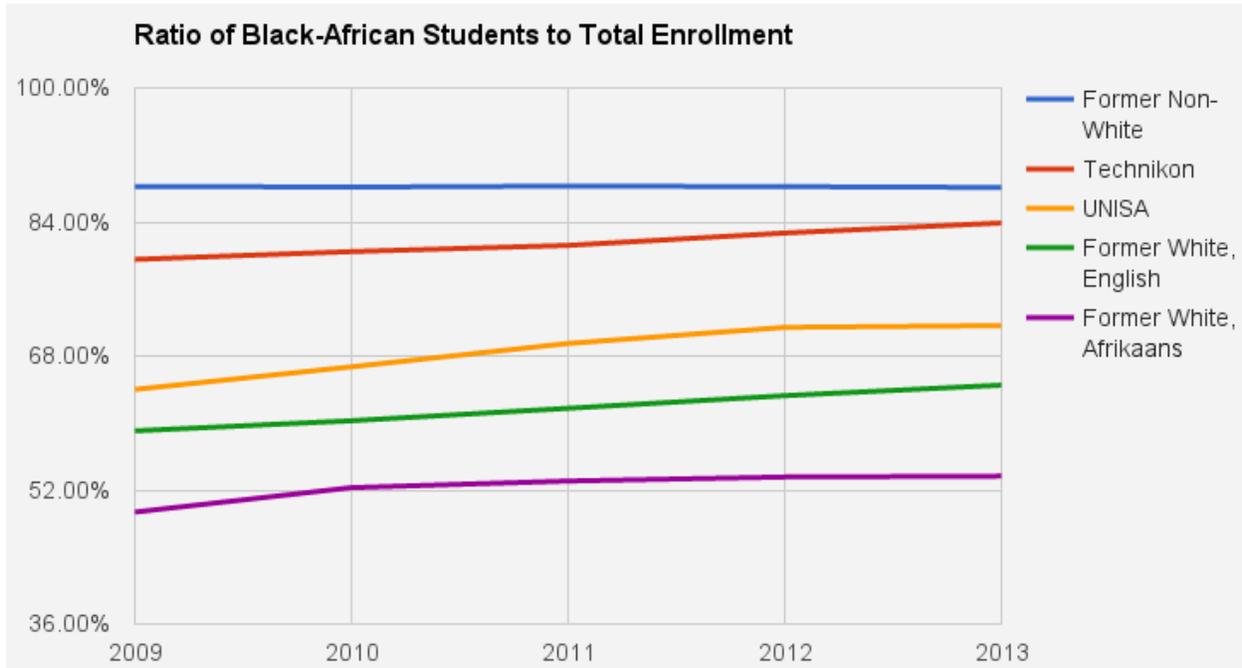
for the population are 79,2%, 8,9%, 2,5%, and 8,9% respectively - but it's an impressive level of transformation for what remains a deeply unequal country.

Figure 4: Enrolment by race, 2009-2013

Enrollment by Race, 2009-2013
— African — Coloured — Indian — White

Unfortunately, the problems of transformation are far more serious when looking beyond the headline figures. The most serious problem is that access to the most highly desirable universities - particularly the formerly white, urban universities like UCT or Wits - still creates racial and other disparities. As can be seen in Figure 5[v], formerly non-white Technikons and universities have an overrepresentation of Black-African students, while the formerly white universities have a serious underrepresentation.

Figure 5: Ration of Black-African students to total enrolment

Formerly white universities with an Afrikaans language policy perform worse than their English speaking counterparts. While this may reflect the barrier posed by the language policy, going deeper into the data paints a more complex picture. The poor overall performance of the group is more or less solely down to the University of Stellenbosch, which posts by far the worst ratio of black-African enrollments, at 15,43%. With Stellenbosch excluded, the group performs much better than the English speaking universities. But, again, that is an incomplete picture, with enrollment rates improved by the inclusion of campuses such as NWU's Mahikeng campus or UF's campus at Qwaqwa. Segregation among campuses remains an issue for many formerly white universities, particularly among the many that have merged. It is notable that Fees Must Fall protests first broke out at Wits' main campuses, rather than the more representative education campus. Even when a university looks representative on paper, the experience of a physical lack of visible transformation, because of divisions between campuses, can lead to as much unrest as an overall lack of transformation.

Figure 6: Distribution of black students at SA universities

Former Non-White		Former White, English	
FH	95.12%	UCT	46.32%
UL	98.10%	UJ	79.87%
UNIVEN	99.82%	NMMU	60.44%
WSU	99.37%	KZN	66.88%
UWC	43.57%	RU	54.05%
UZ	99.25%	WITS	58.56%
Technikon		**Former White, Afrikaans**	
CPUT	57.59%	FS	64.87%
CUT	87.11%	NWU	66.53%
DUT	80.91%	UP	52.02%
MUT	99.69%	SU	15.43%
TUT	92.87%	**UNISA**	
VUT	95.89%	UNISA	71.63%

Where students end up has an important implication for the quality of education they receive. While any university education will improve the odds of employment, student's likelihood of receiving the support they need, and going on to highly profitable work, is closely related to the quality of the university attended. As can be seen by Figures 7 and 8, formerly white schools have better staff-student ratios and more senior staff than their counterparts.
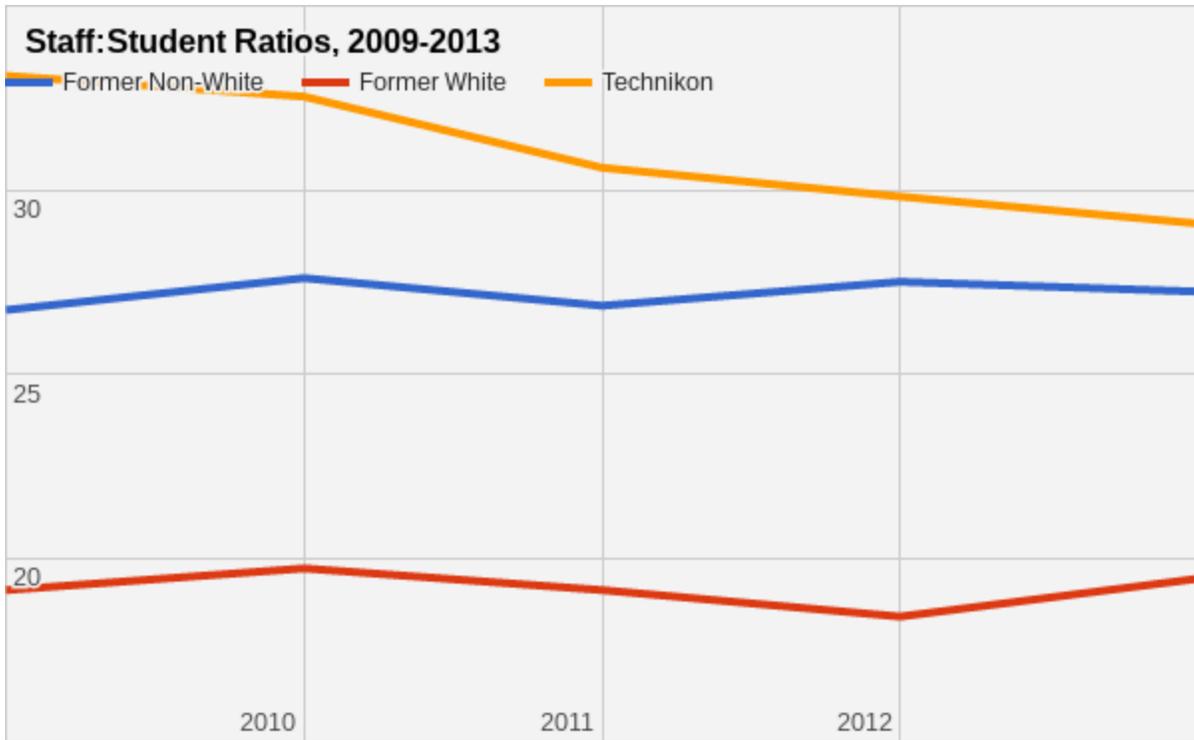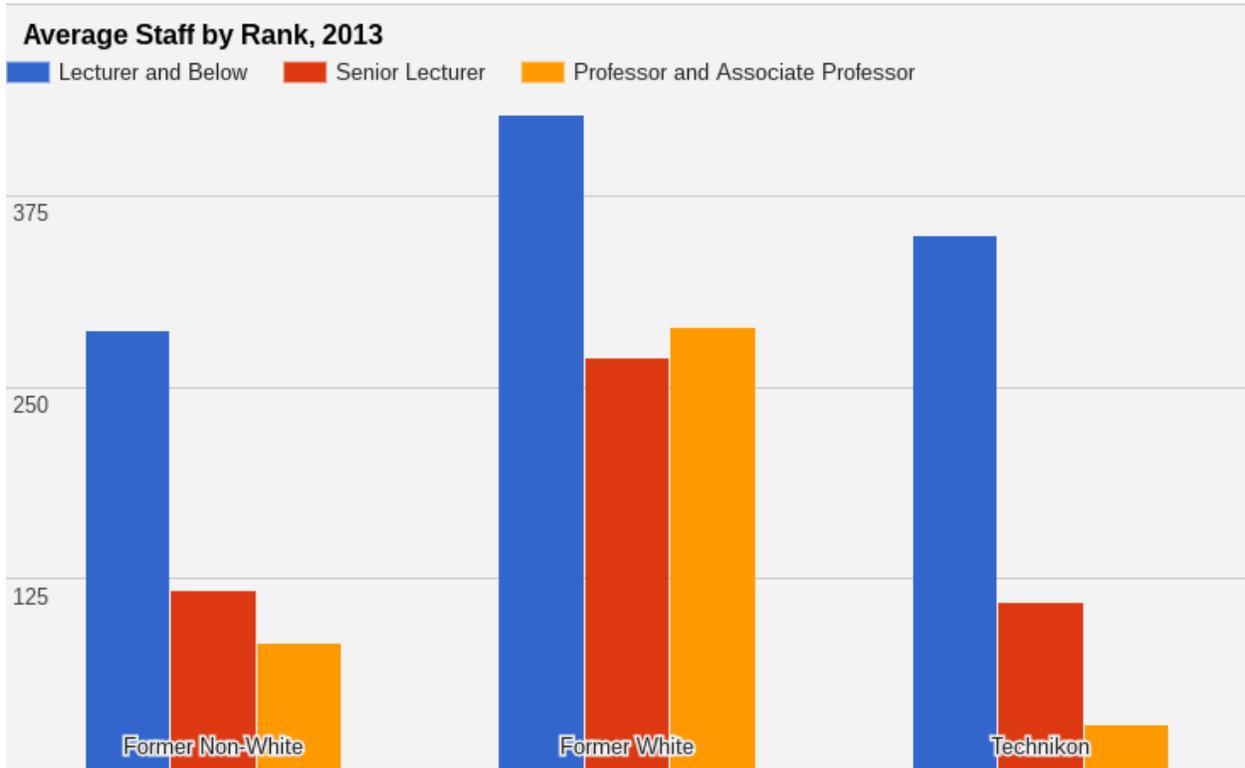
Figure 7: Staff-student ratio, 2009-2013

Staff:Student Ratios, 2009-2013

Former Non-White — Former White — Technikon

30

25

20

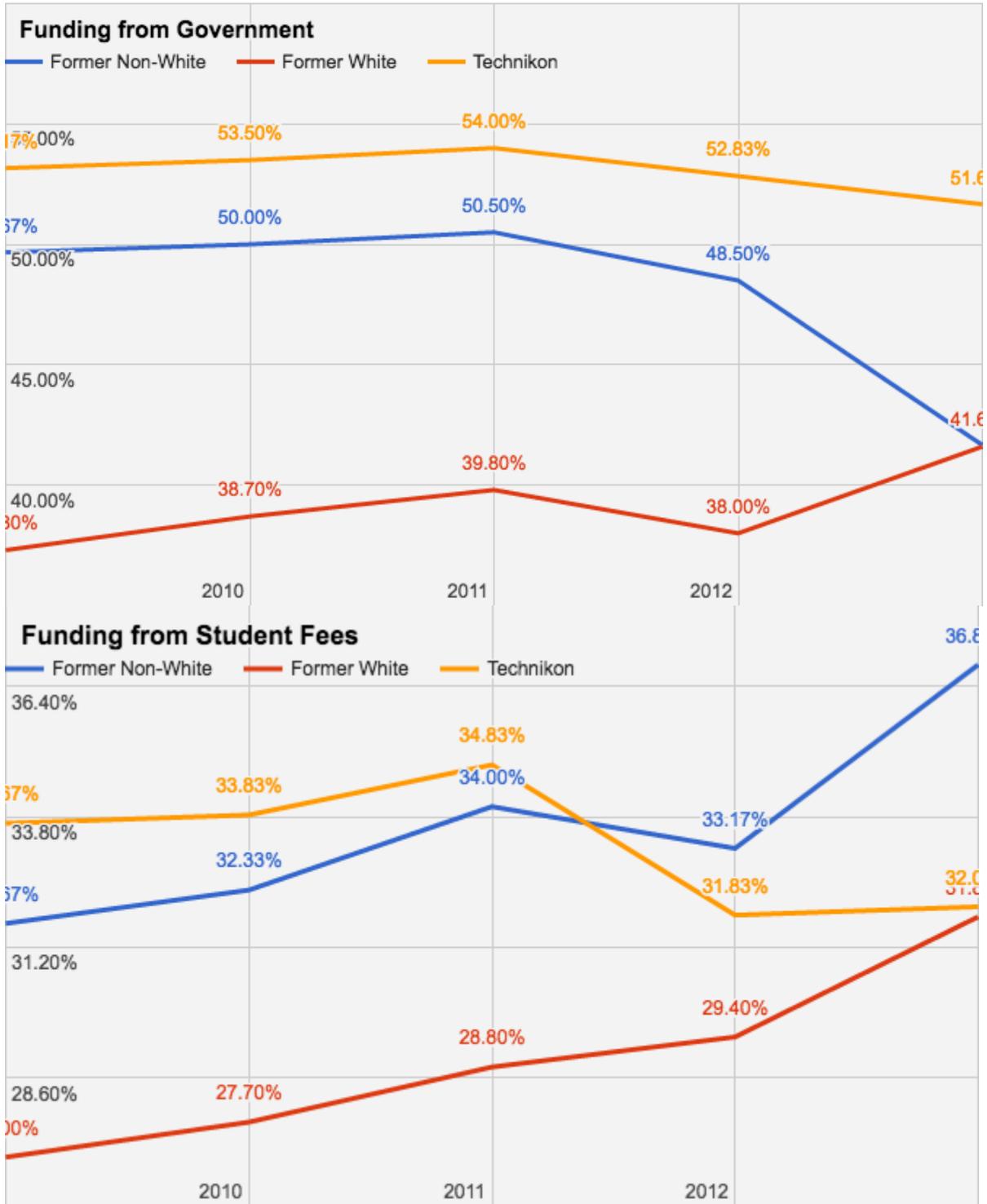2010   2011   2012

In effect, what this means is that access suffers from a dual inequality in which students of colour are less likely to get into university in the first place, and even when these students get into university, they suffer from lower access to teaching resources. While the complaints of many student movements are complex and multifaceted, this inequality is often at the centre of more general concern. The central question, then, is what lies behind these inequalities.
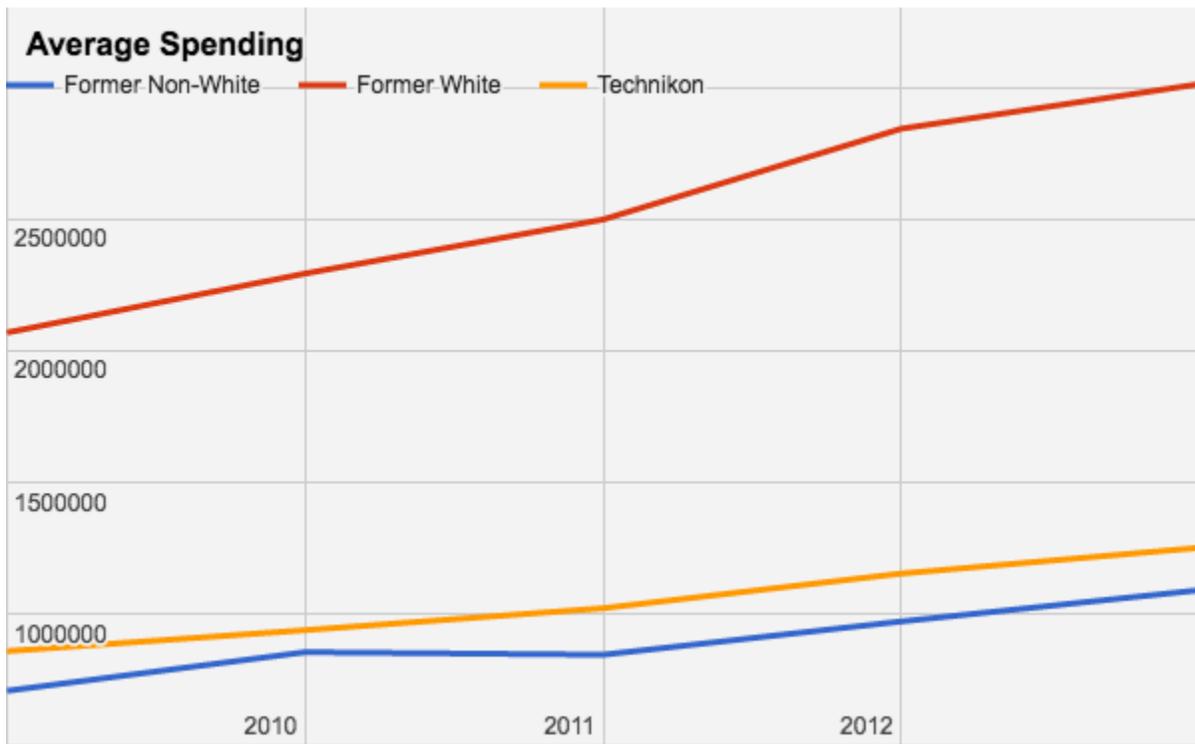
Cost

Fees Must Fall identified the cost of university as the key barrier they wished to target. This certainly is a major consideration. South African universities run on a mixed system, in which government heavily subsidises university budgets, while still expecting universities to make up the shortfall with tuition fees, which are themselves supported through access programmes like NSFAS. On average, universities (excluding UNISA) receive 43,83% of their funding from government, while they draw 33,78% from student fees. While there are differences amongst various groups of universities, this picture is relatively fixed across the board, as can be seen in Figures 9[vi] and 10[vii].

Figure 9: Funding from government

Funding from Government

Former Non-White — Former White — Technikon

17%.00%
53.50%
54.00%
52.83%
51.6

67%
50.00%
50.50%
48.50%
50.00%
45.00%
41.6

39.80%
38.70%
38.00%
40.00%
80%

2010 2011 2012

Funding from Student Fees

Former Non-White — Former White — Technikon

36.8
36.40%
34.83%
34.00%
67%
33.83%
33.80%
32.33%
33.17%
32.0
67%
31.83%
31.8
31.20%
29.40%
28.80%
28.60%
27.70%
00%

2010 2011 2012

While there are not very large changes within those funding ratios, there does seem to be an increasing contribution from students, particularly amongst the "Former White" group, where access problems seem to be concentrated. This increase in reliance on student fees takes place in the context of increasing spending burdens among all universities, which is particularly pronounced among formerly white universities, as can be seen in Figure 9. The image highlights two concurrent problems. First, universities that perform worse on inclusion are becoming more expensive and thus less accessible; second, universities that do better on inclusion are seeing a growing stagnation in their spending.

Figure 10: Average spending

While it is clear that (1) universities are spending more and (2) the portion of income coming from students is increasing, it is difficult to understand how tuition fees have changed. Fees differ considerably for different degrees and different universities, and regardless can only paint a portion of the picture. For many students, tuition fees are just a small part of the broader costs of education, which can include accommodation, transport, textbooks, a wide range of supplementary fees charged by universities, and any number of other living expenses. These fees are particularly burdensome for students studying away from their home city.

The heavy costs involved have to be borne by a combination of income from parents, from the students themselves (in the rare cases where work is available to them), by student loan facilities, and by support structures such as NSFAS. There is no doubt that the costs of higher education are a large barrier to education.

But a one-dimensional approach to inclusion that focuses solely on finance misses the deeper structural barriers to participation facing many South Africans - key amongst them being the state of primary and secondary education

Primary and secondary education

Failures in basic education are likely the most serious barriers to improved inclusion in higher education, for two broad reasons.

First, a broken basic education system damages the capacity to build sustainable systems of student funding. Even with high fees, university education should be a beneficial investment, offering students the potential for higher earnings in the future. The positive returns on offer should lend themselves well to systems of credit, with banks or government bodies providing short term credit for education that students can certainly pay back in the future. This system has proved robust even in incredibly expensive education systems like that of the United States. There are structural barriers to building an efficient system of student loans in South Africa, such as the over indebtedness of many households, but relatively cost effective state student loan systems have been established in many countries, and would be an option in South Africa.

The problem is that student loan systems breakdown in the face of either weak graduation rates or low quality degrees. As is explored in the quality section below, both of these are a problem in South Africa, and both are likely caused by a basic education system that often fails to equip students for the foreign world of university study. Banks and state entities cannot offer an aggressive system of student loans to a university populace that has a low chance of graduating, because graduating and entering into profitable employment is what makes those loans sensible propositions in the first place.

Second, in an even more direct sense, a broken basic education system stops students from gaining access to universities. Even amongst those students that did gain access to universities, few will be able to get into high-paying and economically essential fields such as science and engineering. For those students who cannot get into any university at all, the options for alternative sources of further education are bleak, with technical training remaining underdeveloped, or simply ignored by students in an education environment that tends to see anything outside of university as sub-standard.
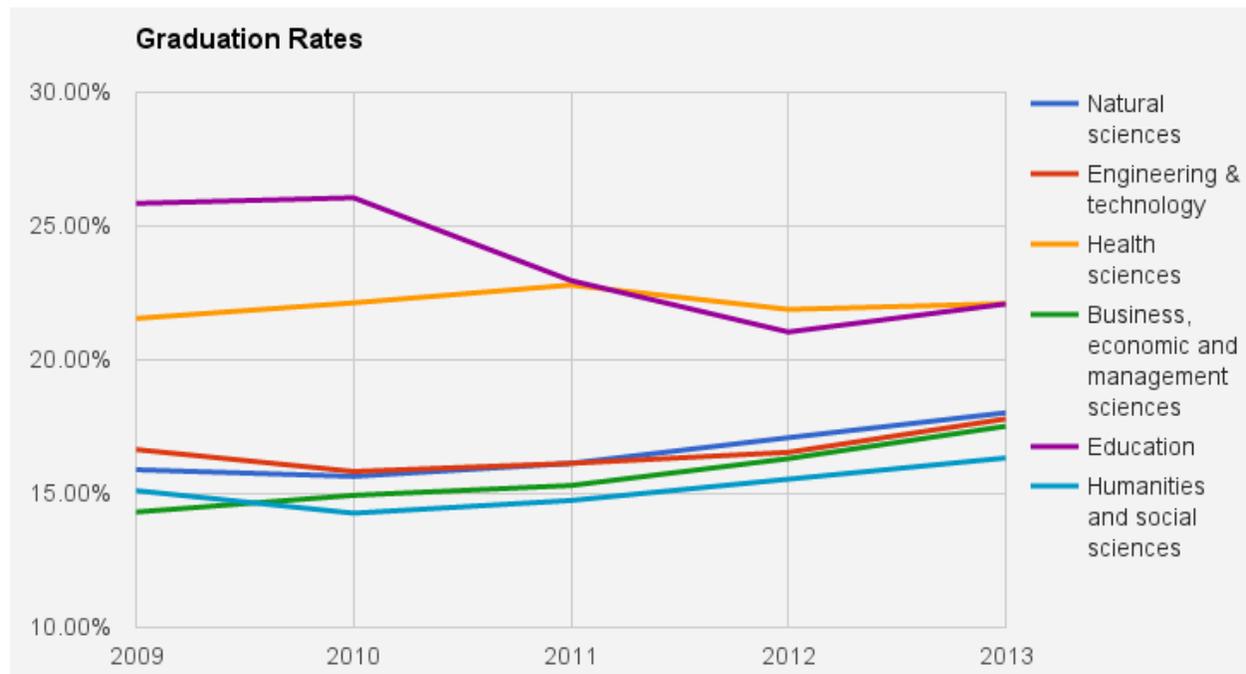
Quality

In general, educational quality is not a major problem for South African universities. South African universities are generally well respected, for both research findings and the quality of the education they offer to graduates. Eight South African universities are ranked in the QS Top Universities ranking,[viii] with the University of Cape Town ranking an impressive 171, while five universities appear in the top 500 of the Times Higher Education Ranking.[ix]

The problems of quality are more nuanced, and speak less to any abstract notions of academic rigour, and more to the ability of universities to empower students with the skills they need to succeed in the workplace.

Graduation rates

Expanded enrollment counts for little unless it actually produces graduates. Media reports offer a number of estimates for graduation rates, ranging from 15%[x] to 46%[xi]. In truth, it is difficult to identify the exact dropout rate for university students, since (unlike in basic education) university students take variable lengths of time to graduate, and may switch universities or majors, or temporarily depart from their studies. Nevertheless, one can get a broad sense by comparing enrolment numbers with graduation numbers, as can be seen in Figure 11.
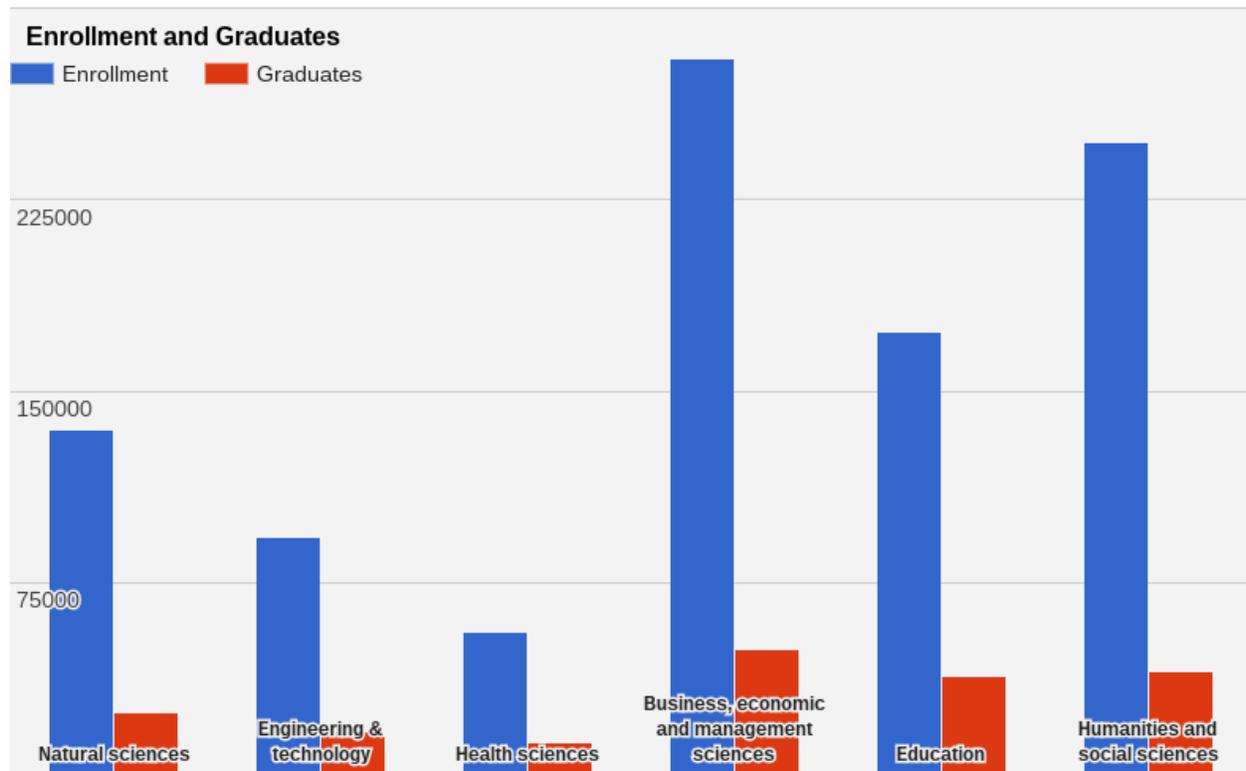
Figure 11: Graduation rate

Rates of graduation are low across the board, and are notably lower for subject areas that tend to attract greater enrollments - such as humanities and business sciences. It is notable that health sciences have amongst the highest ratio of enrollment to graduation, which is arguably testament to the extremely strict standards applied to qualification for a medical degree. This speaks to an often discussed tension between efforts to expand enrolment and efforts to maintain quality: lowering entry standards may expand access to university, but high standards within the university will mean many of those students don't actually obtain degrees.

A number of factors may cause student struggles to graduate - including financial constraints, difficulty in navigating the university environment and its unique culture, and a basic education system that doesn't adequately prepare students for the pressures of higher study. In some cases, large class sizes and overstretched academic staff exacerbate these underlying problems, as they simply don't have the capacity to provide adequate support to struggling students.

Supply and demand

Concerns have also been expressed on the suitability of current university enrollment for the demands of South Africa's economic development. In particular, the weakness of STEM (science, technology, engineering and mathematics) skills has been highlighted as a major impediment to both economic development and student success. This weakness is almost certainly driven by poor primary education in maths and science, with some assessments suggesting that the 2014 national average maths mark amongst Grade 9 learners was as low as 10.8%. While small knowledge deficits can perhaps be overcome with strategies such as bridging courses for new university students, an absolute dearth of knowledge in this field cannot be overcome with anything other than structural change in the basic education system.

Figure 12: Enrolment and graduates

The scale of the imbalances in choice of degree is clear in the enrollment figures shown in Figure 12, in which engineering and technology account for less than 10% of total enrolments.

While the gap is much smaller for graduates, this isn't a promising sign, and perhaps indicates that some students are being streamed into fields like business sciences as a means to expand enrollment.

FET colleges and technical skills development

The breakdown of enrolments can be compared to the Department of Higher Education's list of 100 scarce skills. Unsurprisingly, the list is dominated by various types of engineers, highlighting the central mismatch in skills production. But also noticeable are a number of skilled trades that feature on the list, such as welder, fitters and turners, carpenters and joiners, and a range of others. This highlights perhaps the central weakness on the quality side of higher education: the state of technical skills development and the FET colleges.

Technical skills development should be an easy, powerful means of transformation. Technical training would allow those failed by current basic education programmes to still gain important skills that could give rise to profitable careers, while also filling an important gap in the country's skills supply. And yet technical skills development remains chronically underutilised. There are many reasons for this, including the breakdown of old systems during reforms, and in particularly the absorption of specialist training institutes into universities, and the conversion of technical colleges into full universities, without adequate protections being put in place to secure the technical side of things. A weak apprenticeship system, without adequate recognition from educational authorities, compounds this problem. Finally, deep structural problems in the FET system mean that the disruption of old models haven't been replaced by a functional alternative.

Possible interventions

Fixing lower and higher education at the same time

While the analysis above has revealed any number of deep structural problems in the education system, the key factor is the weakness of the basic education system. A certain number of problems are always expected in higher education, but well capacitated students are put in a position to overcome them. A student that has had 12 years of extensive mathematics training in basic education doesn't need the same level of support at higher education level, and can overcome weaknesses on their own if need be. Basic education thus better equips students to make it to graduation, while improving graduation rates is the key to broadening the reach of debt-based financial solutions. Plus, it goes without saying that improving the rates of students who reach matric and get adequate marks to get into university will weaken the most pronounced barrier to accessing higher education.

Analysing how to fix basic education is well beyond the scope of this paper, and really well beyond the scope of any analysis, requiring real change in how we conceptualise education and large political shifts by education unions and the Department, amongst others. Nevertheless, from the perspective of higher education, two interventions could help.

First, the education of teachers needs to be restored to pride of place in our higher education system. While it's easy to focus on short-term shortages in technical skills in areas like science and technology, a focus on equipping teachers to perform at basic levels helps fix the structural barriers to filling those technical skills that are most in need. Many of the barriers to teaching - such as the reduced status in which society holds this vital profession and the low wages and poor working conditions on offer - are well beyond what our education system can do. But we can simplify and strengthen the role of education departments in universities. With the loss of the independence of teacher training colleges, educational campuses have found themselves locked in a trade-off with other resource-seeking departments. And while enrollments have been expanding in education, graduation rates are declining, even as other fields improve. Weak graduation rates should pose questions about both the quality of support offered to students and the financial sustainability of teaching departments.

As a first step, if teaching is going to remain integrated within broader universities, then it must be given a protected place within the campuses, assured of the required resources. While education schools will need to have qualified lecturers, with experience and theoretical knowledge of pedagogy, lecturers from other schools on the campus should be integrated where possible into teaching at the schools of education. The semi-independence of education campuses should not act as a barrier to education students and teachers gaining access to the broader resources of the rest of the university.

Importantly, however, education campuses should make an active effort to draw on the vast pool of humanities students currently working their way through campuses. While the humanities are a vitally important field of study, the current rate of enrolment is out of kilter with the opportunities on offer. And yet many of these students are talented, passionate to make a difference, and in need of opportunities. Some of their skills sets - in subjects like philosophy and English - equip these students for the demands of teaching. If structural problems in the teaching profession can be resolved, the over-enrollment of students in humanities will have created a reserve of talented potential teachers, who can make a huge difference in improving basic education.

Second, beyond teacher training, universities need to expand investment in bridging courses, that help students to catch-up on skills they might be missing to make it in university. This could be integrated into student's first year of study, but a more ambitious effort would be to shift the start time for South African universities, moving the first semester start date from January to September. This would put our university system in line with global standards, while also providing a buffer period between matric graduation and the start of formal higher education, which could be used to properly equip students for the challenges ahead. As an alternative and a supplement to this, universities could offer limited college credits to high school students enrolling in bridging courses during high school. This is a common policy in places like the United States, which has a dual impact on graduation rates, of better preparing students for university and giving them a buffer of additional credits that can help students overcome courses they might fail during their university career.

Fixing higher education is impossible without fixing basic education, but higher education can improve the supply of talented teachers and help students make the transition to university life. Both would be powerful drivers of educational quality, and will help overcome the access inequalities that are so deeply entrenched in our system.

Finance

Finance is politically unavoidable, with Fees Must Fall adopting barriers to access from finance as their central pillar of complaint. In truth, however, while finance is a barrier, it isn't the central barrier (basic education is), and many of the proposed solutions simply aren't reasonable options for South Africa. Free education is a great ideal, but currently there is simply no space in the budget. And if there was enough space, it would have more of an impact elsewhere. Free education for universities is, from an equality perspective, a regressive action. It may improve equality within the university system, but it does so at a cost to the 95% of the country who don't get a higher degree, many of whom are the most vulnerable. Even if we wanted to spend huge sums of money supporting university students, that would best be achieved by investing in basic education. There could be a policy of cost containment for tuition, but if that is adopted, then efforts need to be made to assure that does not impact the quality of education, particularly at the technikons and formerly black universities, which are relatively more reliant on government support.

The reality of finance is that it almost certainly will have to be covered by fixing and improving the system of student debt. The most aggressive approach here would be the creation of a fund to provide students with debt, with very long repayment rates, and potentially with repayment only being required if the student graduates. The latter condition would assure students without degrees aren't stuck with debt piles they simply cannot manage, and it will create a clear financial incentive for governments to improve graduation rates at universities. This is the system used in countries such as Holland and many places throughout the European Union, and while many of these systems have recently faced large cuts to the benefits they can offer, they nevertheless have been relatively effective for many years.

Less ambitious would be to improve the current systems. Key amongst that would be private sources of finance. Government could offer to underwrite student loans offered by private banks, which would encourage them to offer more debt, even when the prospects for repayment remain uncertain. More powerful would be to offer differentiated underwriting based on need: in which students from poorly performing schools will have more of their debt underwritten by government, actively encouraging banks to lend to those most in need, and least equipped to deal with the university system. Finally, and most obviously, NSFAS needs to be fixed. It doesn't necessarily need a lot more money, but in needs a more flexible and approachable system. High schools should train their students in the complexities of NSFAS and help them navigate the system. Other support structures, such as at university funding offices, should be deepened and better capacitated.

Managing inequality and instability

Fixing basic education and the financing barrier would go a long way to reducing the barriers identified by Fees Must Fall, but it would be naive to believe that we could eliminate inequalities in the education system. South Africa is so deeply and systematically divided that the fault lines at play in the rest of society will always transfer through to education. These inequalities now have a sensitive and activist interest group that will take action if the current imbalances persist. Policies that fix their structural roots are long-term and indirect, and are unlikely to be enough to calm so much anger. Universities will have to put in place more short-term and direct interventions to be seen to be taking direct action.

First, is to directly target the housing system. Accommodation is vital to helping poorer students, particularly those from outside the major cities, and is also a major cost facing these students. Housing has also been a contentious issue for many student movements, with inadequate or low-quality accommodation and food triggering protests. Simultaneously, universities are under pressure to reduce the informalisation of their staff, and to 'in-source' many of those performing actions like security and sanitation. The residence system is the right place to start to target all these interventions. Investment in housing creates long-term benefits for the universities (and thus shouldn't be considered a simple cost) while actively changing the livelihoods of students and creating a visible sense that things are changing. Reducing the cost of accommodation and insourcing residence staff are pure costs to the university, but they also are targeted interventions that reach the most in need, reducing inequality and improving livelihoods without having to target the entire student body. They also directly target a group of students who are highly integrated into the university, and thus well placed to protest if unrest flares up again.

Nevertheless, core interventions to finance are inevitable, even if these are simply holding off on fee increases. It's very difficult to see where universities could act here, since they are under financial pressure, most pressingly at the less well-resourced formerly-black universities. There are real concerns that unrest at privileged universities could force cuts at less privileged universities that they simply cannot afford it. There seems to be little way around it: universities will have to set aside funds to either run expanded access programmes (scholarships and the like) or will have to suppress fee increases (or even have marginal decreases). Funds for this will most likely have to come from endowments, given that an austerity minded National Treasury is unlikely to keep covering the shortfall for all universities. Government will have to at least act to help those universities that don't have large financial endowments to draw on in times like these.

The calls of anger and frustration of students must be headed. The students are absolutely best placed to identify and rally action around the terrible injustices they suffer every day. But, unfortunately, a responsible response will have to be long-term, targeting the serious structural barriers that lie behind these injustices, rather than the flashy headline items (like fees) that rally political action. Moving forward will require balancing taking action on those headline

actions, to calm the anger of students, and facilitate the hard work of structural changes that needs to happen behind the scenes.

Conclusion

On balance, there are positive signs in the question of access to higher education. The student population is growing, and is growing more diverse. But serious problems remain. Students of colour are underrepresented in the prestigious formerly white colleges, which tend to offer better student/staff ratios, have more senior teaching staff, and wield more financial resources. At a time of student protests over funding, expenses are continually increasing, and students are contributing more towards covering these costs. The basic education system makes it extremely challenging to manage these costs, and continues to drive mass exclusion from higher education. While the picture is perhaps more complex than often discussed, there certainly does seem to be major problems with access to higher education.

Beyond problems relating to access, there are substantive areas that need to be addressed. These include addressing the quality of teaching at institutions of higher learning, finding a new financing model that can serve as an instrument for managing inequality, as well as dealing with problems that affect students from poor backgrounds. This paper has shed some light on some of these areas, but there can be no question about the need for further research if the issues are to be addressed more exhaustively.

End notes

[i] http://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa%202012.pdf

[ii] Census 2011.

[iii] In the graph and all that follow, "Formerly Black" refers to Fort Hare, University of Limpopo, University of Venda, Walter Sisulu University, University of Western Cape, and University of Zululand. "Technikons" refer to Cape Peninsula, Central, Durban, Mangosuthu, Tshwane and Vaal Universities of Technology.

[iv] Council on Higher Education (CHE)

[v] "Former White, Afrikaans" represent Free State, North-West, Stellenbosch, and Pretoria.

[vi] Ref. Note that the rapid declines in "Formerly Black" funding ratios are mainly based on declining contributions to UWC, and do not represent a more general trend.

[vii] Ref

[viii] http://www.topuniversities.com/universities/country/south-africa

[ix] https://www.timeshighereducation.com/world-university-rankings/2016/world-ranking#!/page/0/length/25/country/165/sort_by/rank_label/sort_order/asc/cols/rank_only

[x] http://www.iol.co.za/lifestyle/family/kids/only-15-of-sa-university-students-graduate-1531809

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