

South Africa equity and quality reforms: possible lessons¹

Luis Crouch²

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Abstract

In the period 1995 to 2002 South Africa managed to make major policy changes in education. Almost everything about the education sector has changed. This paper focuses on policies aimed at resource distribution. It documents significant improvements in certain measures of resource inequality. It documents that, against perhaps excessively optimistic expectations, responses in learning outcomes have not followed automatically, but have instead required much managerial pressure and oversight. Things appear to have started to improve, at least on some measures, though much remains to be done in this area.

¹ This paper was published in a different and earlier version as Chapter 3 in Rotberg (2004; <http://www.rowmaneducation.com/Catalog/SingleBook.shtml?command=Search&db=^DB/CATALOG.db&eqSKUdata=1578861462>).

² Corresponding Author: Currently Research Vice President, [RTI International](http://www.rti.org); lcrouch@rti.org. The author was technical advisor to the Department of Education, South Africa, from 1995 to 2002. The comradely and technical quality of the interactions with officials in the department and various NGOs is gratefully remembered and acknowledged, as is the funding by USAID during the period 1995 to 2002. The opinions and conclusions expressed here are of course the author's own and are not to be associated with any institutions with whom the author has worked.

Introduction

Over the last few decades, the most profound education reforms attempted anywhere in the world have been instituted in post-apartheid South Africa. The following points highlight the magnitude of South Africa's education reforms:

- a) Reshuffling approximately 19 racially based administrative ministries (or departments)³ into nine geographically based, decentralized ministries in nine new provinces (with a national policy-setting ministry). Each province has inherited four to five and sometimes as many as six of the previous ministries, where personnel, payroll, school resourcing, etc. have had to be merged and unified.
- b) Shifting pro-rich and racial education funding (where whites traditionally had per-learner expenditures 10 times greater than Africans⁴) to one where distributed resources are pro-poor and based on income rather than race.
- c) Preventing spontaneous privatization and flight of the increasingly nonracial⁵ middle class to private schools, i.e., attempting to maintain public schools as a center of community life.
- d) Making large-scale reforms in curriculum and teaching methods in order to remove apartheid content and ideology as well as to modernize pedagogy.
- e) Working across all key subsectors to make them accessible to all, including those that were previously only for the privileged. These subsectors include schools from grades 1 through

³ Determining how many systems or ministries of education existed in apartheid South Africa is in itself a bit of an interesting counting game. There were 10 homelands, and each one had its own education system. These were independent states that were generally not recognized as nation states by the worldwide community, although they had some operational independence in education matters. Then there were four racially based systems that operated in the apartheid republic itself: one for Africans, one for the so-called coloured group, one for Indians, and one for whites. (This racial terminology is still used by the new government because it is sociologically useful in understanding the ongoing dynamics of social change.) If one notes that the white system operated with some decentralized independence in the four old provinces, that is another four. Overseeing everything was a general policy ministry without much administrative implementation mandate. That would make 19 ministries, probably the maximal count that can be produced.

⁴ The racial terminology which came to be used during apartheid has continued to be used, for example, by Statistics South Africa (see Statistics South Africa 2001) because of its importance for statistical and analytical purposes. However, whereas during apartheid each person was nonvoluntarily assigned to a racial category, today one is generally asked to self-classify (e.g., in census returns), and one can generally opt not to self-classify at all. This paper adopts the practice of Statistics South Africa of using *white* for those of European ancestry, *African* for those of African descent, *coloured* for those of mixed ancestry but often associated with Malay ancestry, and *Indian* for those whose ancestry is in South Asia. *Black*, in the common parlance of the anti-apartheid movement, generally refers to all but whites.

⁵ In this paper the term *nonracial* rather than *multiracial* is generally used, as is common within South Africa itself. Much has been written on the meaning of this term; and the debate continues, since the term has no official definition even within the ANC. For an international audience, a former US Ambassador to South Africa has put it this way: "South Africa's new politics is a novel practice of non-racialism. Having ended legal apartheid, the ANC government is committed to nation-building that goes beyond racial to national claims. This vision of non-racialism is uniquely South African and should not be confused with what is often called multi-racialism in the American context. For black South Africans, apartheid was multi-racial. It brought racial distinctiveness to new heights. Even the term multicultural was a euphemism for apartheid's notion of separate development..." (Joseph, 1998). The political and ideological uses of the term, and the implications of various definitions for practical policy, are debated in South Africa: it is by no means a term with a universally accepted definition. What is clear, though, is that the terms of the debate are quite different from those common for dealing with race and ethnic relations in Europe or the United States. (See also Kotzé, 2000.)

12, Early Childhood Development, Further Education and Training (mostly technical colleges not requiring a secondary leaving certificate), Adult Education and Training, inclusive education or education for learners with special needs, and a tertiary sector of universities and technikons (essentially degree-granting polytechnic institutes).

In short, the South African system is attempting a set of reforms that is much larger in scope than what was attempted in the desegregation of school systems in the United States. South Africa's system is starting from a much greater level of inequality, where the poor and disadvantaged are the majority rather than the minority. Simultaneous with its equity and justice agenda, South Africa is attempting a modernization and quality agenda, all the while trying to prevent the sort of white-flight privatization of education common in American cities. South Africans themselves sometimes seem unconscious of the magnitude of the goals they have set themselves.

Equity reforms

The distribution of income and of social opportunity in South Africa is among the most unequal in the world, comparable to that in Brazil. This inequality is substantiated by the Gini coefficient, the most widely used indicator of inequality in the distribution of income or of any other commodity.⁶ This coefficient for income or expenditure distribution in South Africa has been variously measured, with a benchmark for the recent past and present approximating 0.60 (Hoogeveen & Özler, 2004). Two other useful coefficients are the zero-order entropy coefficient, also known as the Theil mean logarithmic deviation, and the mean absolute deviation.⁷ The former, in stylized terms, is also 0.60 while the latter is about 0.80 (Hoogeveen & Özler, 2004; author's own estimate). These three coefficients provide a means for comparing educational inequality.

There have been significant, even dramatic, improvements in equity in South Africa since 1994. There has been improved equity in inter-provincial allocations, but improved equity in intra-provincial allocations has been even more important. A discussion of how South Africa's equity and quality reforms were achieved will be preceded with a presentation of evidence that there were indeed improvements. Basic data showing the changes in inter-provincial distributions are shown in Table 1.

⁶ The Gini coefficient is a measure of inequality that ranges from 0 (for total equality where everyone has the same income or wealth) to 1 (for total inequality where one person controls a nation's entire income or wealth). For benchmarking purposes, very unequal countries such as Brazil or South Africa have Gini coefficients for their income distributions around 0.55 to 0.65, whereas Nordic countries, for example, typically have Gini coefficients around 0.25. This coefficient can be applied to just about any wealth-like concept, such as educational inputs or outputs. For example, the Gini coefficient for the distribution of educational attainment in Korea improved from about 0.55 to 0.30 from the 1960s to the 1990s. For an explanation of the Gini coefficient and the various other coefficients, visit

http://utip.gov.utexas.edu/web/Tutorials_Techniques/Introduction%20to%20Inequality%20Studies.ppt.

⁷ These two other coefficients are also summary indicators of inequality. The mean logarithmic deviation is useful because it can be disaggregated into "within" and "between" components, such as the income inequality within races and between races. The ratio of the average deviation to the mean is simply the ratio of the absolute value of each observation's difference from the mean, over the mean. It is an intuitively appealing measure of how much each actual observation (province, person) differs from the average, standardized for units.

The provinces listed – the new provinces – did not exist in 1991/92. At that point there were only the four traditional provinces as well as 10 self-governing territories or bantustans. However, unpublished data exist from legacy administrative information systems (SANEX) on the proportion of learners from various ex-Departments. These data allow one to construct a good approximation of what the per-learner public expenditure would have been in 1991/92 had the new provinces existed. The notable thing is that the reduction in inequality since the early 1990s has been a remarkable 67% (see last column in Table 1). In 1991/92, provincial deviation from the mean (coefficient of absolute variation) was 31% of the mean; by 2001/2002, this had been reduced to only 10%. (It should be noted that the same variable, applied to either average provincial family expenditure or the average provincial income of school catchment areas, is generally more than twice as unequal today.) There was some reduction in inequality to 1995/96, but a stronger reduction has been noted since then. Thus the story on inter-provincial inequality is one of considerable achievement.

Table 1. Reductions in Inter-Provincial Inequality in Education Spending

(Current RAND per-learner public expenditure in “public ordinary schooling”)				
	1991/92	1995/96	1997/98	2001/02
Eastern Cape	1034	1897	2450	3333
Free State	1473	2091	2913	3638
Gauteng	2054	2883	3638	3763
Kwazulu Natal	1117	1971	2353	3066
Limpopo	1109	1256	2737	3095
Mpumalanga	1177	1761	2380	3243
N Cape	2234	3765	3944	4500
North West	1255	2110	3072	3896
Western Cape	2530	3509	3390	3870
Simple mean	1554	2360	2986	3600
Mean absolute deviation ⁸	479	684	466	370
Coefficient of absolute variation	0.31	0.29	0.16	0.10
Reduction in inequality from 91/92		0.06	0.49	0.67
Reduction in inequality from 95/96			0.46	0.65

Sources: 1991/92 data: Buckland & Fielding, 1994. Other years: South Africa National Treasury, 2001, Annexure C. (1997-2000); South Africa National Treasury, 2002, Annexure C. (2001-2004), for financial data, and National EMIS Directorate for enrollment data.

It is unfortunately impossible to perform a similar analysis for intra-provincial allocations, i.e., allocations to schools. Accounting systems for tracking expenditure down to the school level are only now being developed. However, one can approximate the analysis by focusing on two key inputs: the distribution of the learner-educator ratio and the distribution of the learner-classroom ratio. These two factors account for 90% of the total budget (recurrent and capital). This analysis relies not on yearly administrative records but on two episodic censuses – the 1996 and 2000 *School Register of Needs* (South Africa Department of Education, 1996, 2000b) – which

⁸ Measures such as the Gini coefficient would not have been appropriate in this context as these data exist only at the provincial level. The mean absolute deviation provides a simple and intuitive measure of inequality useful in this highly aggregated context.

measured the allocation of key inputs school by school. These census data give some idea of the improvements in input distribution, as the years 1996 and 2000 fall within the period when most equalization was taking place between and within provinces. As a caveat, it should be noted that the census-taking methodologies used in the two years were not strictly comparable, though it is unlikely that the data would be very wrong for such easily countable entities as classrooms, educators, and learners. The basic results are shown in Table 2.

Table 2. Changes in Total and Intra-Provincial Inequality in Teacher and Classroom Provision

		Primary Teachers	Secondary Teachers	Primary Classrooms	Secondary Classrooms
1996	Gini	0.142	0.188	0.214	0.216
	Entropy: Intraprov	0.030	0.049	0.062	0.064
	Entropy: Interprov	0.004	0.010	0.012	0.015
2000	Gini	0.109	0.153	0.207	0.221
	Entropy: Intraprov	0.022	0.043	0.064	0.070
	Entropy: Interprov	0.002	0.005	0.006	0.011
% Change 1996 to 2000	Gini	-23%	-18%	-3%	3%
	Entropy: Intraprov	-27%	-10%	2%	9%
	Entropy: Interprov	-63%	-54%	-50%	-28%

Source: calculated by the author from Student Register of Needs databases (South Africa Department of Education 1996, 2000b).

Equality in teacher allocation improved quite dramatically. The improvements in inter-provincial equality were the most notable, even though inter-provincial inequality was already smaller than intra-provincial inequality. However, improvements in intra-provincial equality of teacher allocation – in the range of 20% or so in just four years – are quite notable, especially since equalization has continued after 2000 and allocations are becoming pro-poor in 2003. Inequality in classroom allocation was higher than teacher allocation in 1996, and the situation appears not to have improved, except, significantly, in the case of inter-provincial inequality. Thus, while teachers represent the majority of the total cost of education (and are arguably a more important input in the production of learning than classrooms), the story of equalization, thus far, is not a total success on every indicator – just on the most important ones. The reasons for this will become clearer below.

The story on the most easily measurable and costliest indicators is quite good. Other, less measurable indicators are significant because they convey a sense of justice and entitlement or are instrumental in the learning process. These are items such as quality of classroom space and items of equipment more directly related to learning. Unfortunately, between 1996 and 2000, the definitions of these variables changed sufficiently so that one should not make comparisons over time in their distribution. Nonetheless, using 2000 data for comparison, the distribution in quality of infrastructure and provision of per-learner equipment was much worse than the distribution of educators in 1996. For example, the Gini coefficients for quality of infrastructure and for equipment in 2000 were 0.20 and 0.36, respectively, abstracting from level of schooling.⁹ The distribution of equipment is obviously a serious concern.

⁹ Calculated by the author from South Africa Department of Education, 2000b.

Furthermore, particularly in the case of quality of infrastructure, there is the issue of poverty in some absolute sense. Poverty in this sense entails schools being below a certain standard, the summative measure of all substandard schools to that standard (the total poverty gap), and the geographical distribution of poverty to political units in the country. Most absolute poverty (as measured by the cost of bringing truly wretched schools up to some absolute standard) is highly concentrated geographically and easily traceable to particular apartheid homeland administrations. For example, while the old homeland of KwaZulu had 22% of the reporting¹⁰ schools at the primary level, it had 35% of the poverty gap in equipment. Similarly, although the old homeland of Transkei had only some 4.7% of the schools reporting data on infrastructure, it had 21.1% of the infrastructure poverty gap. These are evidently issues that require work.¹¹

Finally, equity in the distribution of the education system outputs is not nearly as high as in the distribution of inputs. This is, of course, to be expected. After all, educational results are not produced solely by school inputs but are highly influenced by family socioeconomic status and social capital.¹² If such environmental factors as parental literacy and income are very unequally distributed, one would expect that educational results would also be. However, there has been considerable improvement in actual educational results, even though this improvement started long before the end of apartheid. Furthermore, given that until 1994 public allocation to schooling emphasized rather than combated parental income inequality (since the rich got more public inputs than the poor), it is surprising to note that the distribution of basic results is not much worse than the distribution of income and – by some measures – is more equal. Because schooling results are distributed a little better – or no worse than – than income, there is reason to believe the education system is playing a role in improving equality of distribution of income for the coming generation.

The generational story is told in Table 3. The table shows the number of grades achieved by successive population cohorts, as measured in the 1999 October Household Survey (Statistics South Africa, 1999). The differences are large: every five years, on average, another 0.6 grades are added to the average grade-achievement of learners. Better yet, as the inequality coefficients show, the inequality of achievement is narrowing dramatically.

¹⁰ Not necessarily of all schools, as the census was not 100% complete for every item.

¹¹ The standards were defined as half of the median of simple multifactor indices of quality of school infrastructure and provision of equipment per learner. The indices were developed by the author.

¹² In South Africa this appears to explain some 30% of variation in school results, as will be seen below.

Table 3. Grade achievement of various cohorts by 1999

Age	Grades of Schooling			
	Mean	Std Error ¹³	Gini	0-order entropy
20-24	9.87	.03	.14	.14
25-29	9.57	.04	.19	.27
30-34	8.89	.04	.23	.39
35-39	8.24	.05	.27	.54
40-44	7.38	.06	.33	.77
45-49	6.88	.08	.38	.96

Source: calculated by the author from the 1999 October Household Survey (Statistics South Africa, 1999).

This is good news indeed. Yet, even as late as the 1990s, only 60% of each cohort was making it to grade 12, and only 50% of these were passing the all-important “matric” (secondary school leaving) national exams,¹⁴ which means that only about 30% of each cohort were achieving twelve grades and entering life with a “pass” to offer the labor market (Crouch & Mabogoane, 1997a). Also, only 10% to 15% were passing with “exemption” or “endorsement,” which allows access to higher education.

On the other hand, as shown in Table 4, the inequality of distribution in the pass rates is decreasing; furthermore, it is lower than that of the distribution of income. Note that this table is only a distribution of the pass rates among schools, not the distribution of the actual average marks or grades among students. Nonetheless, it is clear that the situation has improved. (Note that during the same period, 1997-2001, the average pass rate improved from about 50% to about 60%.)

Table 4. Changes in the Distribution of Educational Results: Matric Exams

	Passes		Exemptions	
	Gini	0-order entropy	Gini	0-order entropy
1997	.36	.54	.50	1.60
1998	.32	.25	.64	1.70
2001	.25	.14	.63	2.19

Source: calculated by the author from Exams unit data (South Africa Department of Education, 1997c, 1998, 2001).

¹³ This is the usual standard error, i.e., the standard deviation of the sample mean. The Gini and 0-order entropy or mean logarithmic deviation coefficients were explained in a previous footnote.

¹⁴ The exam is officially termed the Senior Certificate Examination, but is popularly and almost universally known as the *matric* exams, the 12th (last) year of secondary school also being called the matric grade. The matric pass rate thus measures the proportion of 12th graders that are successful in the secondary school leaving exam.

Since only some 60% of the learners even make it to grade 12 (taking into account all provinces and all racial groups), a Gini coefficient of only 0.25 in the distribution of matric exam pass rates can still yield a distribution of passes based on population cohorts that is worse than the distribution of income. This is because the coefficient ignores all those who never made it to grade 12, when in some sense they should be considered not to have passed the exam. A simulation was done to see what would happen to the above Gini coefficient if one added sufficient schools with zero pass rates to make up for the learners who never even make it to grade 12. The result of the simulation showed that the distribution of pass rates is no worse – and probably better – than the distribution of income. But note that the distribution of “exemptions” (a mark high enough to allow entrance to tertiary education), even considering that those who take the exam are already a selection, is worse than that of income as measured by the Gini coefficient and much worse as measured by the 0-order entropy coefficient. If one includes those who never make it to grade 12, then the distribution of exemptions would be considerably worse than the distribution of income. (Of course, it is not just the degree of schooling that determines one’s income success later in life: while passes and exemptions measure success in schooling, South Africa is liable to the “sheepskin effect”).¹⁵ Nevertheless, these indicators do inspire cautious optimism about total grade achievement and pass rates – though less about exemption rates – while also suggesting that more needs to be done to equalize quality and achievement.

All this begs the question: will redistributing resources lead to a redistribution of achievement? Unfortunately, research on the determinants of educational achievement in South Africa is inconclusive. To some degree it depends on whether one considers managerial quality a resource. The author’s own analysis suggests that if one takes the high school leaving exam as a measure of achievement and makes comparisons across the entire set of schools, environmental and parental poverty and socioeconomic status, as well as managerial tradition (i.e., which apartheid department formerly ran the school) together explain about as much of inter-school variation as does the variation in traditional resources (Crouch & Mabogoane, 1997b). In particular, the correlation between some of the variables that exercise the public imagination about inequality (because they are so visible and so clearly deficient, such as physical infrastructure) appear relatively uncorrelated with achievement. But other resources do definitely appear to matter, such as equipment, pedagogical process inputs, and teacher education. (One should note that access to decent infrastructure is a matter of dignity and justice rather than a critical determinant of output.) Furthermore, to the degree that resources can make up for parental poverty (e.g., by allowing schools to devote more teacher attention to children whose parents cannot help with homework), resources do matter because poverty itself matters.¹⁶

On the other hand, in evaluating results of pilot project schools in poor areas (i.e., schools with a narrow spectrum of achievement), by measuring achievement at grade 3 levels, one finds little correlation between achievement and resources. In fact, there is little correlation between achievement and anything else, as if achievement were more or less random or depended on

¹⁵ For example, having completed 12 grades as opposed to 11 confers much more extra income than having completed 11 grades as opposed to 10, which would not make sense if income is accruing truly in proportion to learning and/or years of education.

¹⁶ For evidence on these issues, see the discussion and data in the section on efficiency, below.

variables that education systems tend not to measure (Crouch, Vinjevoold, 2001). While somewhat expected – since the range of variation in both outputs and inputs would be smaller in poorer schools than in the whole range of schools – this cannot be the main explanation, because there is still some variation in both results and inputs, even in schools that appear equally poor.

How are these improvements being achieved?

Education in South Africa is relatively decentralized. The Constitution makes education a “concurrent” matter. Implementation is largely a provincial matter, governed by provincial legislation. For example, it is the provincial governments that employ schoolteachers. National education legislation prevails over provincial legislation when it is a matter of correcting inter-province issues and when national standards and policies are needed to preserve uniformity. The national level sets policy, but implementation is up to the provinces. Furthermore, a province’s education budget is determined largely by its own legislature and cabinet. The budget is financed largely via grants and transfers from the national government. These transfers do not stipulate how much each province must spend on education: they are multisectoral block transfers driven by a formula (the “Equitable Shares Formula”). This process of revenue sharing has been relatively successful, although not without criticism. Unlike apartheid financing, equity is generated by making the formula largely population-driven. Importantly, the formula does not produce absolute amounts of funding, nor is it based on a sense of “adequacy” or “costed norms” approach to meet needs. The Equitable Shares Formula simply produces shares of revenue that are then divided among claimants in what is hoped to be an equitable manner.¹⁷

The reasons for using the Equitable Shares Formula are complex and have been subject of much debate, but the present national government favors this approach. Education is an important nominal driver of the allocation, in that it carries a weight of 41% in the total allocation of shares. Thus, one could take 41% as the nominal proportion of its revenue share that a province “should” spend on education. Although they vary, internal provincial allocations to education on average come fairly close to this proportion. Each province’s share of the total allocation is driven by each province’s share of education need. In turn, education need is driven by the average of school-aged population and enrollment. Population is used as a driver, in addition to enrollment, to minimize incentives for repetition and to encourage efficient flow-through (coordinated with a national educational policy that normalizes flow-through). Thus, provincial spending per learner can vary largely depending on the following conditions:

- a) The gap between population and enrollment
- b) How much internal revenue each province has, in addition to what it derives as a share of national revenue (which in most cases is less than 10% of total provincial revenue)
- c) How much of its total revenue it chooses to spend on education versus other social and economic needs

¹⁷ An “adequacy” or “costed norms” approach would attempt to provide each school with the inputs adequate to provide a given standard of education. These concepts generally originate in developed countries, where the poor are a minority. The appropriateness of such an approach to the South African context is a debatable issue. The tendency might arise to define adequacy in a manner that would be fiscally unsustainable, leading to promises that cannot be fulfilled. The current approach simply takes the total budget available, which is fairly high as a proportion of GDP, and divides it up in a pro-poor manner. It is very much a shares approach rather than an absolute amounts approach.

This approach was applied in a phased manner, starting from a baseline that was historically driven.

Only one of the drivers in the formula is related to poverty, namely a “backlogs” component that has a weight of only 3% and is used to give more funding to provinces with particularly poor infrastructure (school and other). While most of the other components in this formula are driven simply by population, there is a driver, with a weight of 8%, that returns revenue to each province in proportion to the degree of national output the province generates. Thus the formula returns to each poor province a share of revenue much larger than the share of national income generated by it (for example, though Limpopo generates only 3% of national income, it receives 14% of the shared revenue). The Equitable Shares Formula allocation process ends up being redistributive even though this is not an explicit aim of the formula. Furthermore, there have been special allocations outside the formula, for example, for school construction and improvement.

It is largely the application of this approach that has been responsible for the improvement in inter-provincial variation in per-learner expenditure, begging the question of what politico-economic factors have enabled the application of this formula. While a detailed explanation would take us too far afield, the following two points are significant: a national government with a strong majority and mandate at national level to carry out redistribution; and a modern approach to crafting fiscal formulae that are clear, simple, transparent, and well studied so as to avoid perverse incentives. (While focusing on shares rather than absolute amounts has increased transparency and reduced debates, this focus on shares – rather than adequacy – has been the target of some criticism.)

As noted, intra-provincial equity has also improved. While the improvement in allocations to the poor provinces has permitted poorer provinces to improve local distribution by leveling up – rather than leveling to the median or mean – the reason for this cannot have been driven by the inter-provincial allocations. The reason lies, instead, with the national government, which has issued policies that regulate intra-provincial resource distribution, thus issuing provinces with a mandate that forces them to redistribute internally out of a fixed bottom line but does not result in an unfunded mandate affecting total expenditure on schooling.¹⁸

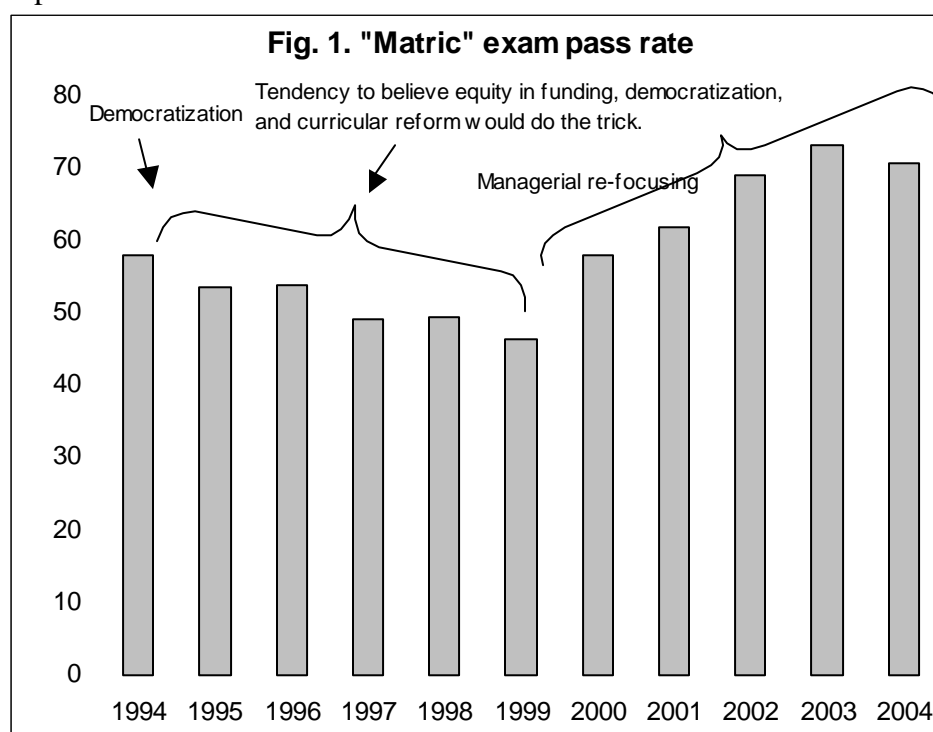
Necessary efficiency and quality reforms

As was noted above, it was logical, given the history of South Africa, that equity reforms would be tackled first. However, it was not long before it was noticed that there are serious quality and efficiency problems with South African education, not just equity problems. Of course, the two are not necessarily unrelated. If one apartheid system had 10 times as much administrative and support assistance per teacher as another system (an equity problem), it is logical to expect efficiency to differ in the new provinces that inherited these disproportionate apartheid systems,

¹⁸ An unfunded mandate occurs when a higher level of government imposes some functions or service standards (e.g., a pupil-teacher ratio) but does not fund the lower-level government to pay for the needed inputs and (even worse, but not needed to define a mandate that is unfunded) does not allow the lower-level government the local tax-raising capacity to pay for it.

with one province having many fewer capable administrators per teacher (and hence per student) than another. While equity and curricular issues have been tackled in South Africa, the efficiency reforms have been slower to start, and there is still considerable debate about their nature.

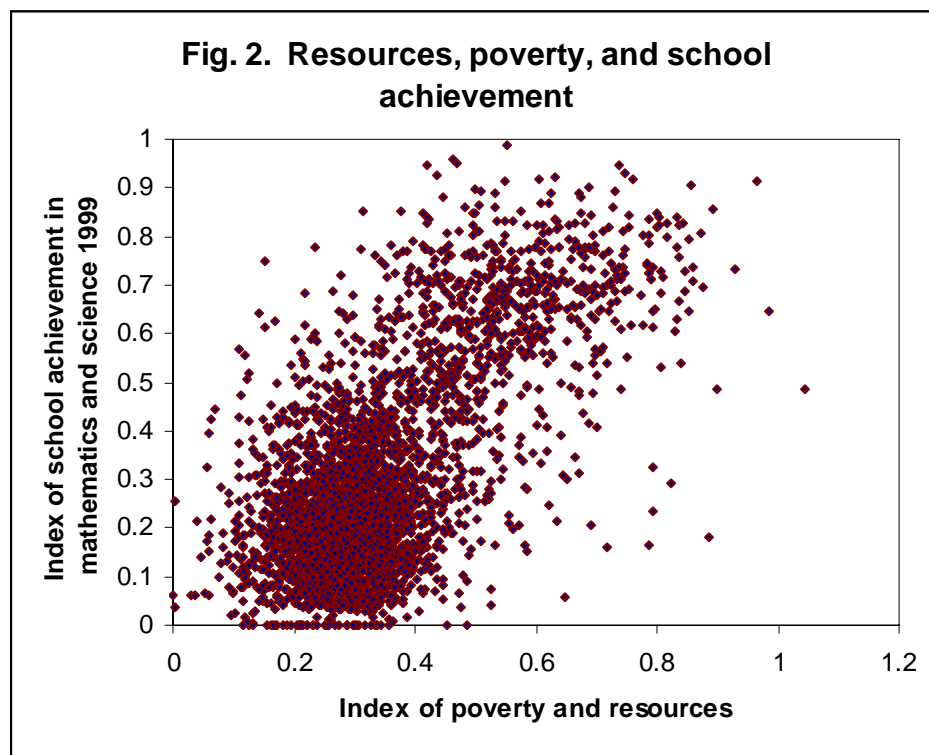
In the first few years of democratization, the most widely tracked quality indicator, the matric pass rate (or total passes) declined, as Figure 1 indicates. There are many reasons not to take the matric pass rate excessively seriously: the exam suffers from self-selection problems, data are not firmly anchored through common items year to year, students' work has influenced the grades in recent years, and the denominator (numbers sitting for the exam) has changed. (For a discussion of some of the controversies surrounding the matric exams see Mukwevho, Khosa, & Kgobe, 2004; Kanjee, 2005; and Schinlder, 2004.) The exam results have, at the very least, political and managerial significance, and the trends probably do signal a turnaround of some importance.



Source: 1994-2003 from Mukwevho, Khosa, & Kgobe, 2004; 2004 from South Africa Info, 2005.

After a few years of declining results, policy makers became aware that democratization, improved resource flows, and curricular change, among other factors, could not be expected to make an impact on measured learning, particularly not in grade 12 and not in just in the short-term. Furthermore, policy makers began to note considerable slack in the system: schools with equal resources serving the equally poor achieved vastly different results, due presumably to differences in the quality of management. Figure 2 illustrates that in South Africa resources and poverty do matter in school achievement, but they are not all that matters – efficiency in resource utilization matters as well. That there is a central tendency is clear, but that there is considerable deviation around the central tendency is also clear. While not necessarily presented in this

manner, this sort of information began to persuade policy makers that focused intervention on quality and management was needed.



Source: calculated by the author.¹⁹

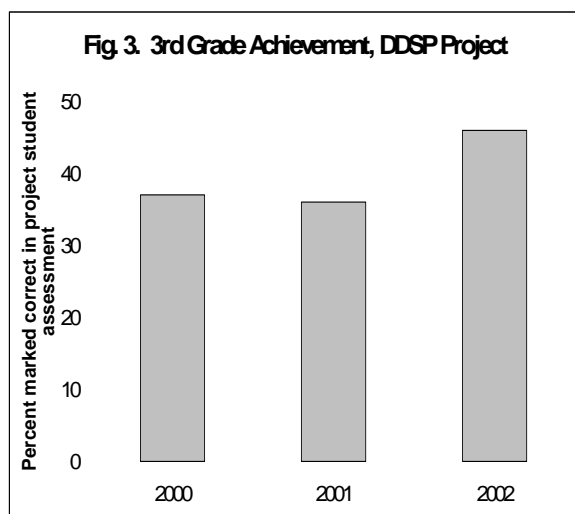
Figure 2 refers to secondary schools, with data gathered throughout South Africa. The index of school achievement or performance refers to an index of mathematics and science results in the matric exam. The index of poverty and resources, or the resource and social advantage index, comprises the following variables: income, unemployment, youth dependency, illiteracy, language spoken at home, type of water supply in the school catchment area (an indicator of public infrastructure quality), qualifications of teachers, existence of school hostels, provision of textbooks and science laboratories, teacher experience, and learner-classroom and learner-educator ratios (as indicators of resourcing). The resource and social advantage index is simply the predicted value of performance, as suggested by the named advantage indicators.

The South African education system is coming to grips with these issues, including activities to bolster “Culture of Learning” in schools, whole-school evaluation and improvement, and district assistance to schools in management improvement. Some provinces have increased pressure on nonperforming schools or areas, with various degrees of success. As shown in Figure 1, where a dramatic turnaround was created in the late 1990s, there is no clear, overall conclusion as to how to press the matter of quality. (However, the numbers are somewhat deceptive, as the numbers

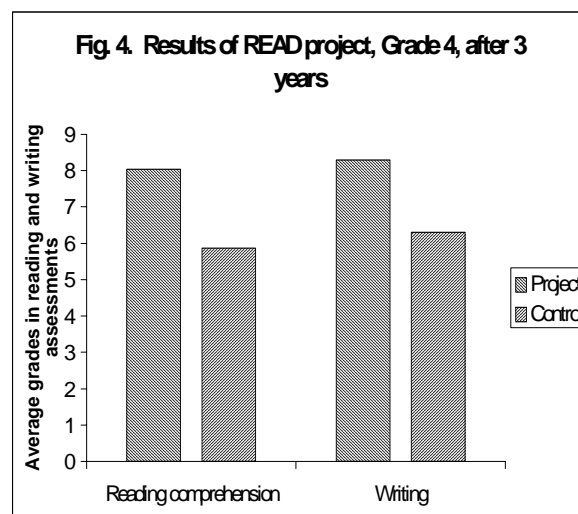
¹⁹ The data and school achievement index were provided by Helen Perry, consultant, who in turn sourced the data from official sources, in particular the EMIS and exams areas at the National Department of Education. I would like to express my gratitude to her. However, the responsibility for the analysis and any resulting errors are mine.

of exam-takers was reduced, which helped improve the pass rate, as those least likely to pass did not sit for the exam. Other data would show, however, that the total number of passes – not just the pass rate – improved (though this rate of improvement was not much better than the rate of growth of population).

An important issue is that most of these efforts target nonperformance by using the matric exam as a tracking device, already described above as an imperfect indicator. A leaving and filtering exam applied at grade 12 is hardly the most effective diagnostic device imaginable; but until very recently, there was no systemic assessment applied in earlier grades. A grade 3 assessment was applied for the first time on a nationwide pilot basis in the year 2000 and on a nationwide non-pilot basis in 2001 (South Africa Department of Education, 2003b). Because this is being done on a nationwide school sample, rather than on a universal basis, it is difficult to track specific schools with this approach. Nonetheless, the evidence provided by this assessment should help policy makers to decide on which factors they should focus. Other donor-based projects have begun to focus on learning in the early grades, with some indications of success in increasing learner performance. Schools in the USAID-funded District Development Support Program (DDSP) project, for example, have improved learner performance by a significant degree in a few years (Claassen, Makgamatha, and Kanjee, 2003), as have schools with reading interventions by the READ Trust (Hoffman, Pearson, Beretvas, and Sailors, 2003). Some of these results are shown in Figures 3 and 4.²⁰ While these are not full random-assignment experiments, they are as rigorous as anything currently available in South Africa, and they do prove that improvements in results in the order of 20% to 25% (not percentage points) are possible in a fairly short time and with large numbers of schools (DDSP worked with about 15,000 children).



Source: Claassen, et al. (2003).



Source: Hoffman, et al. (2003).

²⁰ The DDSP results refer to the average of mathematics and communication. The READ project results in writing are rescaled to the same axis as the reading comprehension test.

A recent Ministerial review on resourcing has also drawn attention to the issue of efficiency (South Africa Department of Education, 2003a). As resources come to be distributed more and more equally (or on a pro-poor basis), it is clear that performance does not track resources as closely as one might hope. Pressure from central government levels – national and provincial treasuries, provincial premiers, and the nation's presidency – to have the education system show impact in return for funds spent is likely to increase in coming years. The education system will have to respond creatively, both to moderate expectations (it may not be reasonable to expect outputs to track inputs in such a short time frame, especially when factoring in poverty and other social variables), and to tighten up management to effectively deliver more impact for the money spent.

One of the key problems affecting education in South Africa, which was not anticipated by African National Congress policy makers in the early 1990s, is the scourge of HIV/AIDS. This will place considerable human and budgetary strain on the education system. For a discussion of these issues, see Crouch (2004).

Conclusions

South Africa has taken on an educational transformation more immense than any attempted in the world in the last few decades. This transformation has been approached deliberately, consultatively, and with considerable attention to a sound legal base. The transformation is beginning to produce results, first in equity and now – slowly but increasingly certainly – in quality. There have been surprises and difficult environmental changes that have worked against earlier hopes, but these obstacles are being faced down, some better than others. The example of South Africa's innovativeness and careful dedication in reforming the equity and quality issues behind its educational system can perhaps serve as a useful lesson for other countries. South Africa—eight years after sowing the seeds of transformation—is only now beginning to reap the fruits, further example to the world that such profound reforms take years to design, more years to implement, and even more years to bear fruit.

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