

Princeton University

Conference on Global Studies of Discrimination

May 18-19, 2007
219 Aaron Burr Hall

Friday, May 18, 2007

Breakfast: 8:30 – 9:00am

Session I: 9:00 – 11:00am

- **Dorren McMahon**, University College Dublin
“Immigrant Discrimination in Ireland: Lessons for Europe's New Immigrant Receiving Countries”
- **Jens Peter Thomsen**, Aarhus University
“The Education Effect: Socialization or Economic Privileges?”
- **William Darity**, University of North Carolina, Chapel Hill
“Under Our Skin: The Impact of Skin Tone on Life Outcomes”
- **Danielle Cireno Fernandes**, University Federal of Minas Gerais
“Occupational Segregation by Race and its Consequences: Perceptions of Discriminatory Practices, Income Differential and Return to Investment in Human Capital”

Discussant: **Kamal Sadiq**, University of California, Irvine

Break: 11:00 – 11:30am

Session II: 11:30am – 1:00pm

- **Jeremy Seekings**, University of Cape Town
“Racial and Class Discrimination in Assessments of Desert in Post-Apartheid Cape Town”
- **Surinder Jodhka**, Jawaharlal Nehru University
Katherine Newman, Princeton University
“The Language of Globalization: Meritocracy, Productivity and the Hidden Traces of Caste”
- **Justine Burns**, University of Cape Town
“Race and Trust in a Segmented Society”

- **Gary Orfield**, University of California, Los Angeles
“Multiracial Transformation, Segregation, and the American Supreme Court: Lessons from the Civil Rights Revolution and the Conservative Reaction”

Discussant: **Linda Krieger**, University of California, Berkeley

Lunch: 1:00 – 2:30pm

Session III: 2:30 – 4:00pm

- **Victoria Esses**, University of Western Ontario
“The Dehumanization of Refugees”
- **Susan Fiske** (with Tiane Lee), Princeton University
“Immigrants: Who ‘Belongs Here’ and Why”
- **Thomas Pettigrew**, University of California, Santa Cruz
“Who Opposes Immigration? Comparing German with North American Findings”
- **Carlos Costa-Ribeiro**, Instituto Universitario de Pesquisas do Rio de Janeiro
“Inequality of Educational Opportunity in Brazil: Race, Class and Gender”

Discussant: **Kay Deaux**, City University of New York

Break: 4:00 – 4:30pm

Wrap up session 4:30 – 5:30pm

- Kay Deaux
- Linda Krieger
- Kamal Sadiq
- Colin McKenzie

Saturday, May 19, 2007

Breakfast: 8:30 – 9:00am

Session IV 9:00 – 10:30am

- **Michael Cosser**, Human Sciences Research Council of South Africa
“Race and Opportunity in the Transition from School to Higher Education in South Africa”
- **Antonio Sergio Guimaraes**, University of Sao Paulo
“Entrance and Grade Performance of Disadvantaged Groups into Prestigious Universities in Brazil: Blacks at the University of Sao Paulo from 2000 to 2006”
- **Crain Soudien**, University of Cape Town
“Structural Discrimination in South African Schooling”
- **Jorge Neves**, Federal University of Minas Gerais
“Social Classes, Occupational Structure, and Racial Inequality in Brazil”

Discussant: **Philip Moss**, University of Massachusetts, Lowell

Break: 10:30 – 11:00am

Session V: 11:00am – 1:00pm

- **Nadya Guimaraes**, University of Sao Paulo
“On the Threshold of Discrimination: Measuring Gender/Race Inequalities and Discrimination in Sao Paulo Labor Market”
- **Koyo Miyoshi**, Keio University
“Male-Female Wage Differentials in Japan.”
- **Devah Pager**, Princeton University
“Discrimination in Low Wage Labor Markets”

Discussant: **Mary Anne Case**, University of Chicago

Lunch: 1:00 – 2:30pm

Session VI: 2:30 – 4:30pm

- **Ashwini Deshpande**, Delhi University
Katherine Newman, Princeton University
“Pathways Beyond Higher Education: Role of Caste in Employment Patterns Among High Skilled Workers”
- **Kunihiko Kimura**, Tohoku University
“Trends of Sex Discrimination in Japan, 1965-2000: The Gender Gap in Wage and the ‘Marriage Bar’”
- **S. Madheswaran**, Institute for Social & Economic Change, India
Paul Attewell, City University of New York
“Caste Discrimination in the Indian Urban Labour Market: An Econometric Analysis”
- **Thomas Weisskopf**, University of Michigan
“Reflections on Globalization, Discrimination, and Affirmative Action”

Discussant: **Miguel Centeno**, Princeton University

Break: 4:30 – 5:00pm

Wrap up session 5:00 – 6:00pm

- Mary Anne Case
- Miguel Centeno
- Devah Pager

RACE AND OPPORTUNITY IN THE TRANSITION FROM SCHOOL TO HIGHER EDUCATION IN SOUTH AFRICA¹

Michael Cosser²

Abstract

While South Africa is well into its second decade of democracy, higher education opportunities in the country remain different for different race groups. Black African learners are not represented in the first-year higher education enrolment profile (the intake of learners who proceed to higher education directly from school) in relation either to their representation in the general population or to their aspirations for entry into higher education. This much emerges from a triangulation of the findings of two surveys of Grade 12 learner aspiration for higher education study, conducted in 2001 and 2005, with analyses of the Higher Education Management Information System (HEMIS) enrolment profiles of 2002 and 2006. That the 2001-2002 aspiration-enrolment disjunction is replicated in the 2005-2006 study, moreover, confirms the slow pace of educational transformation in the new democratic order. The key conclusion drawn from the juxtaposition of these two studies is that discrimination, while not overt, remains entrenched in South African educational pathways by virtue of the differential opportunities available to learners of different races – opportunities that are a function largely of socio-economic status (SES) and of the differential horizons for action which SES opens up for learners.

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Introduction

From within and outside its borders, South Africa is perceived to have achieved a miraculous transformation from *apartheid* rule to a democratic order. In many ways this perception is accurate: South Africa has a constitution and bill of rights that entrench rights for all, and the lot of many of its citizens has been improved in the thirteen years since the transition to democracy. In the educational arena, the new dispensation has seen the establishment, amongst other things, of a single, co-ordinated schooling system (Republic of South Africa, 1996; 1998), the restructuring of the further education and training (Republic of South Africa, 2006) and higher education systems (Republic of South Africa, 1997) and the passing of legislation that paves the way for the transformation of the adult basic education and training (ABET) (Republic of South Africa, 2000) system. The South African Qualifications Authority (SAQA) Act objectives of “creat[ing] an integrated national framework for learning achievements” and of “accelerat[ing] the redress of past unfair *discrimination* in education, training and employment opportunities” (Republic of South Africa, 1995: clause 2; emphasis added) appear indeed to have been realised.

While the *framework* for educational transformation is clearly in place, however, the extent to which actual transformation on the ground has been achieved is debatable. One way of assessing whether transformation *has* occurred is to ascertain whether the various pieces of legislation that have been enacted, both severally and in combination, translate into enhanced educational opportunity – particularly, in the context of the “redress of past unfair discrimination” quoted above, opportunity for learners of all races to pursue, with equal opportunity, educational pathways of their choice in the pursuit of qualifications. Against this backdrop, this paper examines the school-higher education transition point to ascertain the extent to which Grade 12 learners of all races have been able to fulfil their aspirations of proceeding to higher education and of studying in their chosen areas. The paper explores the extent to which discrimination lives on in the education arena – specifically, the differential opportunities open to learners of different races as they proceed to higher education as measured by enrolment rates in higher education institutions the year after school and the extent to which aspirations are translated into enrolments.

The paper begins by setting out the parameters within which the notion of discrimination in learning pathways can be considered. It proceeds to discuss the methodology behind and the findings of a 2001 baseline study of the higher education aspirations of Grade 12 learners across all nine provinces of South Africa and to compare these aspirations with the higher education enrolment profile for 2002. This transition is then juxtaposed with a second such passage four years' later: the findings of another baseline study of the aspirations of Grade 12 learners for higher education study – this time pertaining to the 2005 cohort – are compared with the higher education enrolment profile for 2006. The paper concludes with a discussion of the implications of the findings of both transition point studies for analyses of discrimination in access to higher education in South Africa.

Discrimination in the divergence of learning pathways

While 1994 cannot be held up as the year in which all structural racism in South Africa ceased, it is undeniable that, with the formal demise of the *apartheid* state in that year, institutions of higher learning in South Africa increasingly began opening their doors to students of all races (Bunting, 2002a). The participation rate of black African students in higher education in 1993 was 9% (as against 75% black African representation in the general population), that of white students 70% (as against 13% white representation in the general population) (Bunting, 2002b) – percentages that reflect directly the state policy of promoting white student access to higher education in favour of access for black African students. Access *per se* is not the subject of this paper, however; rather, the paper is centrally concerned with the ways in which discrimination is manifested in the traversal of learning pathways that issue in differential racial uptake in higher education institutions.

Defining discrimination

Denotations of “discrimination” are not necessarily particularly helpful in delineating the meaning of the term in the context of learning pathways. Standard definitions of the term rely on the notion of prejudice – as, for example, Princeton’s on-line Wordnet denotation: “unfair treatment of a person or group on the basis of prejudice” (<http://wordnet.princeton.edu/perl/webwn?s>); or Merriam-Webster’s on-line

dictionary denotation: “prejudiced or prejudicial outlook, action, or treatment” (www.m-w.com/dictionary). In fact the primary denotations of “discriminate” as “know apart” (in the sense of “recognise or perceive the difference”), “distinguish” and “separate, single out” (in the sense of “treat differently on the basis of sex or race”) (<http://www.wordreference.com/definition>) are, ironically, nearer the mark: the effect of discriminatory treatment can be seen, in a higher education context, in the first-year enrolment profile of higher education institutions, where the races are easily distinguished and racial differences in uptake are easily perceived.

More useful than these standard definitions is the distinction between *policy and practice* on the one hand and *historical effect* on the other. As Agüero (2005) points out, however sweepingly, in his review of the literature on measuring discrimination, during the *apartheid* era in South Africa and before the Civil Rights movement in the United States there were laws that separated groups of the population. In South Africa, clear distinctions were drawn, and actual geophysical divisions created, between four major races: black Africans, coloureds, Indian / Asians, and whites. In the U.S., many racial groups (now officially delineated as black or black African Americans, American Indians / Asians or Alaskan Natives, Asians, Native Hawaiians or other Pacific Islanders, and whites) as well as the ethnic group Hispanics (who may be of any race) have historically faced severe discrimination: pervasive and open denial of civil, social, political, educational, and economic opportunities (Blank, Dabady and Citro, 2004). The practice of the *apartheid* and pre-Civil Rights Movement eras, then – a practice epitomised in the discourse of employment advertisements that appeared in the U.S. during those times (Darity and Mason, 1998) – was to discriminate on the basis of race.

The apparent disappearance of such *direct* evidence of discrimination hardly implies that discrimination has ended, however; rather, its historical effects are now seen in the differential opportunities open to different race groups. Large differences in outcomes among racial and ethnic groups continue to exist in employment, income and wealth, housing, education, criminal justice, health, and other areas. Although many factors may contribute to such differences, their size and extent, as Blank, Dabady and Citro (2004) asseverate, suggest that various forms of discriminatory treatment persist in U.S. society and serve to undercut the achievement of equal

opportunity. The same, of course, is true of South African society, where the systematic implementation of *apartheid* policies over a forty-five-year period (1948-1993) entrenched differential opportunity, the legacy of which will be seen for years to come.

Discrimination, according to this conception, is not a phenomenon that occurs at one point in time in a particular process or stage of a particular domain – an episodic view – but a dynamic *process* that functions throughout the stages within a domain, across domains, across individual lifetimes, and even across generations (Blank, Dabady and Citro, 2004). For example, discrimination against prior generations may diminish opportunities for present generations *even in the absence of current discriminatory practices*. Longitudinal data are essential to the identification of initial and subsequent incidents of discrimination and the measurement of the effects of discrimination over time.

Measuring racial discrimination in learning pathways

In the context of learning pathways, discrimination has to do with the ways in which differential opportunities for progression are available to different race groups. Accordingly, this paper, in comparing two transitional moments (the transition of Grade 12 learners to higher education between 2001 and 2002 and between 2005 and 2006), attempts to measure the extent to which racial transformation of higher learning opportunity has taken hold in South Africa – more specifically, between the first and second decades (1994-2003; 2004-) of democratic rule in the country. The unit of measurement is the percentage of students of the four major race groups enrolled in higher education institutions *in relation to their aspirations for higher education*. In other words, the paper explores the extent to which the aspirations of Grade 12 learners to enter higher education are realised in the year following the articulation of their aspirations as measured by their uptake in higher education institutions and in the programmatic areas of their choice.

Limitations of the approach

Establishing that discriminatory treatment or impact has occurred and measuring its effects on outcomes, as Blank, Dabady and Citro (2004) point out, requires very careful analysis to rule out alternative explanatory factors. Measuring discrimination through an analysis of the differential enrolment patterns of students of different race groups in higher education institutions in relation to initial learner aspirations is, against this cautionary, hardly definitive. But it is a first step in the process of establishing whether racial difference in aspiration and enrolment and in the relationship between these two phenomena is attributable more to historical discrimination than to factors non-racial in nature. Further research, then, will need to delineate more carefully how racial discrimination can be measured and its effects on opportunities for learning isolated.

Methodology

In 2001, a team of researchers at the Human Sciences Research Council (HSRC) undertook a study of Grade 12 learner aspiration to enter higher education (HE). A predominantly closed-ended survey was distributed to a random sample of learners stratified by province and by school pass rate in the 2000 Senior Certificate Examination.³ A return of 12 204 questionnaires from learners in 288 schools was achieved, the representativeness of the response profile allowing for generalisation of the findings to the entire Grade 12 learner population.

In the year following the aspiration survey, an analysis of HEMIS data⁴ was undertaken to establish the enrolment profile of students in HE institutions and in the programmes they offer.

In 2005 the research team was again afforded the opportunity, with funding from the Royal Netherlands Embassy for a teacher education programme, to mount a similar study. This time 20 659 survey returns were obtained. Once again, the response profile was sufficiently representative of the general population of Grade 12 learners to allow for generalisation of the findings to that population.

³ The sampling procedure and the methodology deployed are described in detail in the published report on the project (Cossier with du Toit, 2002).

⁴ HEMIS is the official Department of Education system for the annual collection of data on enrolments and graduations from all HE institutions in South Africa.

In 2007, analysis of HEMIS data on student enrolments in 2006 once again afforded the research team the opportunity to establish the first-time entry profile of students who were in Grade 12 the previous year.

Since race is a variable that features prominently in both transition studies, it is possible, both separately (for each transition study) and in combination, to compare:

- black African, coloured, Indian / Asian and white learner responses to questions about aspiration to proceed to higher education
- the HE aspiration and enrolment profiles of the four race groups, both individually and in relation to each other; and
- from an analysis of the HEMIS data, the subject enrolment profiles of the four groups.

Accordingly, all three types of comparison are made in the paper.

Findings of the surveys

This section of the paper presents the pertinent findings of the two surveys and of the concomitant analyses of the HE enrolment profiles for the years following the surveys upon which the subsequent analysis of discrimination is based. The presentation takes the form of a comparison of the two transitional moments.

The 2001-2002 transition study

The 2001 aspiration survey

The percentage of learners in the 2001 aspiration survey who intended entering HE within three years of the survey date (i.e., in 2002, 2003 or 2004) – if we factor out those who were unsure (14%) – was 84%. Sixteen percent, then, had no such plans. A disaggregation of these data by race shows that 86% of black Africans, 70% of coloureds, 92% of Indian / Asians and 81% of whites planned to proceed to higher

education within three years of the survey date. These are very high figures by any standard.

The percentage of learners planning to proceed to HE the next year (i.e., in 2002) was 82.8% of those who planned to enter HE. A disaggregation by race reveals that 84.1% of black Africans, 75.8% of coloureds, 87.8% of Indians / Asians, and 73.0% of whites who planned to enter HE wanted to do so in 2002.

The percentage of learners wanting to enter HE in 2002 *as a percentage of the total response profile* was 65.3%. A disaggregation by race shows that 57.9% of black Africans, 40.0% of coloureds, 67.6% of Indians / Asians, and 49.1% of whites wanted to proceed to HE in 2002.

The following table juxtaposes these aspiration figures:

Table 1: Grade 12 learner aspiration to proceed to HE within three years and in 2002, by race, 2001

Category of aspirant HE student	Black African	Coloured	Indian / Asian	White	Total
Planning to enter HE within three years (% of total)	85.4	69.5	91.7	81.3	84.1
Planning to enter HE in 2002 (% of those planning to enter HE)	84.1	75.8	87.8	73.0	82.8
Planning to enter HE in 2002 (% of total) ⁵	57.9	40.0	67.6	49.1	56.1

More than half (56.1%) of all respondents to the survey, the last row indicates, planned to enter higher education the year after Grade 12.

While comparisons between South Africa and the U.S. may be spurious, given that blacks constitute a minority in the US and that the race group dynamics in the two countries may differ, it is nonetheless interesting to observe that, broadly speaking, this finding bears out comparative longitudinal research conducted by Schneider & Stevenson (1999), which reveals that the rise in educational expectations in the United

⁵ These percentages do not factor out those aspirant students who were unsure about entering HE in 2002.

States over the last 40 years (as measured by the percentages of learners expecting to obtain a first degree – rising from 30% of learners in 1955 to 70% in 1992) is not confined to any particular group of students. Similarly, research conducted by Hossler, Braxton and Coopersmith (1989) and by Paulsen (1990) reported that ethnicity has little or no effect on the educational aspirations of learners. However, as the South African profile demonstrates, the percentage of *coloureds* intending to enter HE within three years of the survey date is significantly lower than the percentages for each of the other three race groups, while the percentage of Indian / Asians wanting to proceed to HE is notably higher than that for black Africans and Whites.

From an institutional perspective, 34% of black Africans, 44% of coloureds, 73% of Indians / Asians and 66% of whites wanted to study at a university rather than a technikon. (The HE system in 2001 was characterised by a binary division between universities and technikons, the former catering predominantly for undergraduate and postgraduate degrees and the latter predominantly for certificates and diplomas.) The greater aspiration for technikon study amongst coloureds and black Africans reflects the (fairly realistic) reach of their dreams – universities being open only to those with university exemption grades, technikons being open to those with or without such exemption.

A disaggregation of learner preference for specific HE institution by race reveals that the five most preferred institutions were as follows:

Table 2: Five most preferred institutions for HE study, by race, in descending order of preference, 2001

Black African	Coloured	Indian / Asian	White
Technikon Pretoria	Cape Technikon	University of Natal	Other institutions
Technikon Witwatersrand	University of the Western Cape	Technikon Natal	University of Pretoria
Technikon Vaal Triangle	University of Stellenbosch	University of Pretoria	University of Stellenbosch
University of Pretoria	Other institutions ⁶	University of South Africa	University of Cape Town
Technikon Natal	University of Cape Town	University of the Witwatersrand	Technikon Pretoria

As this table reveals,

⁶ "Other institutions" refers to private higher education institutions and institutions abroad.

- Technikon study was most popular amongst black Africans, featuring only once in the top five most popular institutional choices of the other three groups but four times for black Africans.
- The top institutional choice of black Africans and coloureds was a technikon.
- “Other institutions” – that is, institutions outside of the public HE system – constituted the first choice of white learners – 14.9% wanting to study at such institutions, 13.4% at the University of Pretoria.
- A technikon was the second choice of Indians / Asians but the fifth choice of whites.

This profile reflects a class-based citizenship picture in which whites, under *apartheid*, were first-class citizens, Indians / Asians second-class citizens, coloureds third-class citizens, and black Africans fourth-class citizens, institutional preference being least constrained for white learners and most constrained for African learners (with Indian / Asian and coloured learner preferences falling between these two) – in line with their assessment of the admission opportunities open to them.

From a field of study perspective, learners’ preferences in 2001 were as follows.

Table 3: Preferred field of study in HE, by race, in descending order of preference by total, 2001

Field of study	Black African	Coloured	Indian / Asian	White	Total
Business, Commerce & Management Studies	26.9	26.2	26.9	26.4	26.8
Manufacturing, Engineering & Technology	16.9	15.1	14.5	11.0	16.3
Health Sciences & Social Services	14.3	17.3	22.9	12.4	14.6
Physical, Mathematical, Computer & Life Sciences	10.1	10.5	14.8	13.3	10.6
Human & Social Studies	6.7	4.0	3.0	2.2	6.1
Services	5.5	5.9	3.8	8.3	5.7
Law, Military Science & Security	5.4	9.0	4.4	6.5	5.6
Agriculture & Nature Conservation	6.0	2.2	2.1	4.1	5.5
Culture & Arts	3.8	4.4	3.0	7.5	4.0

Communication Studies & Language	2.2	2.1	1.2	2.2	2.2
Education, Training & Development	1.0	1.6	2.2	4.7	1.4
Physical Planning & Construction	1.1	1.8	1.2	1.4	1.2
Total	100.0	100.0	100.0	100.0	100.0

The noteworthy findings, for the purposes of this paper, are the following:

- More black Africans than other race groups – on a downward continuum from black African to coloured to Indian / Asian to white – want to study in the field of Manufacturing, Engineering & Technology
- The percentage of Indian / Asian learners (22.9%) choosing Health Sciences & Social Services is significantly higher than the percentages of the other three groups doing so, and nearly double that of whites.
- The percentage of Indians / Asians choosing to study in the area of the Humanities⁷ (13.8%) is significantly lower than the percentages of the other three groups choosing to do so (black Africans = 19.1%; coloureds = 21.1%; whites = 23.1%), indicating greater interest in the professions.
- Interest in studying in the field of Education, Training & Development (ETD) can be plotted on a continuum, at the one pole of which is black African learner interest, at the other pole white learner interest – coloured and Indian / Asian learner interest falling between the two poles.
- Indian / Asian interest (86.2%) in the two study areas identified in the *National Plan for Higher Education* (Department of Education, 2001) as critical for national development – Business & Commerce⁸ and Science, Engineering and Technology (SET)⁹ – is higher than that of black Africans (80.8%) and coloureds (79.0%), which in turn is higher than that of whites (68.6%); and
- The percentages of learners who do not know which area they want to study in are highest for whites and lowest for black Africans, on a sliding scale. More

⁷ Humanities comprises Human & Social Studies, Law, Military Science & Security, Culture & Arts, Communication Studies & Language, and Education, Training & Development.

⁸ Business & Commerce comprises Business, Commerce & Management Studies and Services.

⁹ SET comprises Manufacturing, Engineering & Technology, Health Sciences & Social Services, Physical, Mathematical, Computer & Life Sciences, Agriculture & Nature Conservation, and Physical Planning & Construction.

than three times as many whites as black Africans are unsure about their study area – possibly because

- they are on average wealthy enough to assume they will go on to study and are not therefore pressurised to make the choice at the time of the survey
- their marks are good enough so as not to limit their future options in terms of field of study; and / or
- their perceptions of the effect of affirmative action upon their employment options may have caused them to waiver on the issue of choice of study direction.

Analysis of 2002 HE enrolments

An analysis of the Department of Education HEMIS data-set of enrolments for 2002 (Department of Education, 2002a; 2002b) reveals that 61 476 of the 449 371 learners (Department of Education, 2003) who sat for the Senior Certificate Examination in 2001 enrolled in a HE institution in 2002 – that is, 13.7% of the cohort. A total of 34 181 (or 55.6%) of these learners enrolled in a university, 27 295 (or 44.4%) in a technikon. This finding runs counter to the greater preference for technikon over university study recorded in the 2001 survey outlined earlier (see also Cosser with du Toit 2002: 75), in which 61.3% opted for university study, 38.7% for technikon study.

The 2001 survey revealed, as we saw above, that 84% of Grade 12 learners planned to enter HE within three years of the survey date. Four-fifths (83%) of those who planned to enter HE wanted to do so in 2002, the year after matric. The very small percentage of learners – 13.7% – who actually entered HE is in line with the low enrolment trend observed in the years prior to 2002, in which, on average, 14% of those sitting for the Senior Certificate entered HE the year after completing Grade 12 (Subotzky, 2003: 359).

A disaggregation by race reveals that the ratio of black African to coloured to Indian / Asian to white learners who entered HE institutions in 2002 straight from school was 53.2% : 7.7% : 8.6% : 30.5%. Since the Department of Education does not provide examination statistics by race (an omission about which Blank, Dabady, and Citro

[2004] would have much to say in the North American context), it is not possible to compare these figures with Department of Education data. However, a comparison with the representation of these four race groups in the general population – where, in 2001, the ratio was 79.0% : 8.9% : 2.5% : 9.6% (Statistics South Africa, 2003) – reveals that black African and coloured students were under-represented in the first-year intake, while Indian / Asian and white students were over-represented. The differentials in the case of three of the race groups – black Africans, Indians / Asians and whites – are large. *Racial equity, therefore, is far from having been achieved in the first-year intake into HE in 2002 of learners who were in Grade 12 in 2001.*

As we saw above, 83% of Grade 12 learners who planned to proceed to HE within three years of the survey date wanted to do so in 2002. A disaggregation of this percentage by race reveals that 84.0% of those wanting to enter HE in 2002 were black Africans, 5.5% were coloureds, 3.8% were Indians / Asians, and 7.3% were whites. The aspiration-enrolment translation rate is based upon the following set of correlations (to which have been added the relative percentages of the four race groups aged 20-24 in 2001):

Table 4: Aspiration to enter HE in 2002, enrolments of students who were in Grade 12 in 2001, and representation in the general population aged 20-24 in 2001, by race

Category	Black African	Coloured	Indian / Asian	White	Total
Aspiration to enter HE in 2002	83.5	5.5	3.8	7.3	100.0
Enrolment in HE in 2002	53.2	7.7	8.6	30.5	100.0
General population aged 20-24 in 2001	82.5	8.2	2.4	6.9	100.0

As the table shows, there is a strong correlation between the percentages of learners of the four race groups who aspired to enter HE in 2002 and the distribution of 20 to 24-year-olds within these race groups in the general population – which indicates, if nothing else, the representivity of the HE aspiration response profile. So, for example, while 83.5% of learners who aspired to enter HE in 2002 were black Africans, black Africans made up 82.5% of the population of the country aged 20-24 in 2001.

However, the enrolment profile is profoundly out of step with this correlation. Thus, for example, only 53.2% of enrolments in HE institutions in 2002 were black African, in relation to black Africans' 82.5% representation in the general population of 20 to 24-year-olds. And at the other end of the spectrum, 30.5% of enrolments in HE institutions in 2002 were white, in relation to whites' 6.9% representation in the general population of 20 to 24-year-olds.

The 2002 tracer study survey departed from the 2001 baseline study in deploying a different template to capture field of study preferences. Instead of using the 12 SAQA fields to delineate the fields of learning, as in the aspiration survey, the tracer study survey used the Department of Education programmatic grid – upon which the HEMIS database is based – to capture field of study information.

An analysis of HEMIS data reveals that large differences exist between the four population groups with regard to their programme areas and fields of enrolment.

Table 5 indicates the enrolment profile for the four race groups.

Table 5: Enrolments within Department of Education programme areas, by race, 2002

Programme area	Coloured		White	
	No.	%	No.	%
Natural and mathematical sciences	796	16.9	3 637	19.4
Engineering and other applied sciences	576	12.2	2 393	12.7
Health sciences	262	5.6	1 132	6.0
Business / commerce	1 280	27.2	3 869	20.7
Education	109	2.3	1 207	6.4
Social sciences and applied humanities	854	18.1	4 384	23.3
Humanities	835	17.7	2 162	11.5
Total	4 712	100.0	18 784	100.0

The three key findings about programmatic enrolment, as revealed by this table, are the following:

1. **Business / commerce** is the most subscribed programme for black Africans, coloureds and Indians / Asians, by a fairly large margin, but not for whites, for whom the Social sciences is most subscribed.
2. The **Social sciences** is the second most subscribed area for black Africans, coloureds and Indians / Asians – though only marginally for Indians / Asians and not by very much for black Africans and coloureds.
3. **Education** is the least subscribed programme for black Africans, coloureds and Indians / Asians, but not for whites – for whom the **Health Sciences** is the least subscribed programme area. Many more whites enrolled in Education programmes than did black Africans, coloureds or Indians / Asians, as the headcount numbers show.

Aggregated to the three broad Department of Education fields of study, the picture is as follows:

Table 6: Enrolment distribution in three DoE fields of study, by race, 2002

Field of study	Africans	Coloureds	Indians	Whites	Total
Humanities	25.4	38.1	27.5	41.1	31.4
Business and commerce	40.0	27.2	27.6	20.6	32.0
SET	34.6	34.7	44.9	38.3	36.6
Total	100.0	100.0	100.0	100.0	100.0

The aggregation in Table 6 reveals the extent of the differences between the four population groups with regard to enrolment choices. While a quarter of black African and Indian / Asian students enrolled in the Humanities in 2002 in relation to the other two fields, two-fifths of white and coloured students did so. And while one-fifth of white student enrolments and a quarter each of coloured and Indian / Asian enrolments in relation to enrolments in the other two fields were in Business and commerce, a much higher proportion – two-fifths – of black African enrolments in relation to enrolments in the two other fields were in Business and commerce. Interestingly, nearly half of Indian / Asian enrolments were in SET, the ratios of SET

enrolments to Humanities enrolments for coloureds and whites being skewed towards the Humanities, but for black Africans towards SET.

Only a year after the publication of the National Plan for Higher Education (Department of Education, 2001), then, there had already been a shift in first-year enrolments, black African students being “clustered” not in the Humanities but in Business and commerce.

A comparison of the four population groups according to their enrolment choices reveals the following:

Table 7: Distribution of enrolments in Department of Education programme areas by race, 2002

Programme area	Coloured		White	
	No.	%	No.	%
Natural and mathematical sciences	796	7.7	3 637	35.0
Engineering and other applied sciences	576	6.5	2 393	27.1
Health sciences	262	8.1	1 132	34.8
Business / commerce	1 280	6.5	3 869	19.7
Education	109	5.6	1 207	62.0
Social sciences and applied humanities	854	7.2	4 384	36.9
Humanities	835	15.2	2 162	39.5
Total	4 712	7.7	18 784	30.5

The three key findings to emerge from this table are the following:

1. Two-thirds of those students enrolled in Business / commerce in 2002 are black African.
2. Nearly two-thirds (62%) of those enrolled in Education are white.

3. White enrolments are proportionally much higher than black African, coloured and Indian / Asian enrolments in relation to the representation of these population groups in the general population of South Africa. In late 2001, the ratio of black Africans to coloureds to Indians / Asians to whites in the general population was 79.0% : 8.9% : 2.5% : 9.6% (Statistics South Africa, 2003). Moreover, in the 15-19 age group the ratio was 82.2% : 8.5% : 2.2% : 7.1%, and in the 20-24 age group 82.5% : 8.2% : 2.4% : 6.9% – these two age groups being the two from which Grade 12 school-leavers were drawn. As these age differentials show, black Africans make up a larger proportion of the population in the younger age cohorts than they do across the entire spectrum of age categories. *From the above table, then, we can deduce that black Africans and coloureds are under-represented in the student enrolment cohort in all seven programme areas, while Indians / Asians and whites are over-represented in all seven areas.* While HE institutions have made great strides in redressing racial imbalances in student enrolments, then, these figures suggest that there is still a lot more work for them to do in ensuring that HE enrolments reflect the broader demographics of the country.

A comparison of Grade 12 learner preferences in 2001 for study in specified areas and their actual enrolment choices one year later (in 2002) is disaggregated by race group in the following table:

Table 8: Grade 12 study preference in 2001 and first-year programme enrolment in 2002, by race

Programme area	2001 preference (%)				2002 enrolment (%)			
	African	Coloured	Indian	Asian	African	Coloured	Indian	Asian
Natural and mathematical sciences	10.1	10.1	14.8	14.8	15.1	15.1	19.2	19.2
Engineering and other applied sciences	24.0	24.0	17.8	17.8	15.5	15.5	15.2	15.2

Health sciences	14.3	22.9	4.0	10.5
Business and commerce ¹⁰	32.5	30.7	40.0	27.7
Education	1.0	2.2	1.7	1.5
Social sciences and applied humanities	8.8	5.9	17.1	19.5
Humanities	9.3	5.7	6.6	6.4
Total	100.0	100.0	100.0	100.0

This profile shows that:

- There are no significant differences between the four race groups with regard to the relationship between preference for the Natural and mathematical sciences and enrolment in this area: in every case more students enrolled in this area in 2002 than had wanted to in 2001.
- Higher percentages of black African and coloured learners than of Indian / Asian and white learners planned to enroll in Engineering and other applied sciences programmes than did so.
- Higher percentages of black African, coloured and Indian / Asian learners than white learners planned to enroll in the Health sciences than did so.
- A higher percentage of African learners enrolled in Business / commerce than had planned to do so – in contradistinction to the profile for the other three groups, where lower percentages enrolled than planned to do so. The differential is particularly marked for whites: 34.7% wanted to enroll in this area; only 20.7% did so.
- Education enrolments are higher than study preferences for three of the four groups, but only marginally so.
- Enrolments in the Social sciences are markedly higher than preference for study in this area for all four race groups.

¹⁰ The SAQA field "Services" has been incorporated into this category for the purposes of aligning the 2001 survey preferences with the actual enrolment figures.

- Coloured enrolments in the Humanities are significantly higher than coloured preference for study in this area (from 8.5% to 17.7%). For the other three groups the preference-enrolment differential is not marked.

At the level of fields of study, the transition from Grade 12 preference to first-year enrolment is as follows:

Table 9: Grade 12 learner field-of-study preference in 2001 and first-year enrolment in 2002, by race

Field of study	2001 preference (%)			2002 enrolment (%)		
	African	Indian	White	African	Indian	White
Humanities	19.1	13.8	17.7	25.4	27.4	27.7
Business and commerce ¹¹	32.5	30.7	39.6	40.0	27.7	27.7
SET	48.4	55.5	44.9	39.6	44.9	44.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

This table reveals that higher percentages of students of all race groups enrolled in the Humanities than had planned to do so – especially Indian / Asian and white learners; lower percentages of students of all race groups except black Africans enrolled in Business and commerce than had planned to do so; and lower percentages of students of all race groups enrolled in SET programmes than had planned to – except that for white learners the differential is much smaller than for the other groups. These shifts confirm a broad shift from preference for study in Business and commerce and in SET to enrolment in the Humanities.

The 2005-2006 transition study

The 2005 aspiration survey

¹¹ The SAQA field “Services” has been incorporated into this category for the purposes of aligning the Phase One preferences with the actual enrolment figures.

The percentage of learners in the 2005 aspiration survey who intended entering HE (whether in 2006 or at some future date) was 53.8%. This compares with a figure of 84% in the 2001 aspiration survey.

Some of the difference may be attributable to the different ways in which the question regarding aspiration for HE study was asked in the two surveys. In the 2001 survey, learners were asked: **“Are you planning to study at a university or technikon within the next three years?”** There was no lead-up question probing whether they planned to study further or not; nor was further study disaggregated into various options (HE, further education, etc.). In the 2005 survey, however, learners were asked **“Are you planning to study further after Grade 12?”**, and subsequently, **“At which institution type are you planning to study?”** – the listed options being “A higher education institution”, “A further education and training (FET) college”, “A private FET institution”, “An agricultural college”, and “A nursing college”. A total of 59.8% of learners wanted to study at a HE institution rather than at one of the other institutional types.

In other words, the difference in response between 2001 and 2005 may be due in part to:

- learners having indicated, in the 2001 survey, that they planned to proceed to higher education when in fact they may have planned to proceed to another type of further learning (for example, an FET college); and
- a fall-off in response about aspiration to proceed to HE as a result of the question filtering process in the 2005 questionnaire.

But so large a change would suggest that other factors must have contributed to the discrepancy.

A disaggregation by race of those who indicated that they planned to proceed to HE (whether in 2006 or later) reveals that 53.5% of black Africans, 43.9% of coloureds, 65.0% of Indians / Asians and 59.1% of whites wanted to do so. A comparison with the 2001 profile, where 85.4% of black Africans, 69.5% of coloureds, 91.7% of

Indians / Asians and 81.3% of whites aspired to enter HE, shows that there has been a significant tapering off in interest in HE amongst all four race groups. The percentage change can be indicated as follows:

Table 10: Percentage change in Grade 12 learner aspiration to enter HE, 2001 and 2005, by race

Survey	Black African	Coloured	Indian / Asian	White	Total
2001 aspiration survey	85.4	69.5	91.7	81.3	84.1
2005 aspiration survey	53.5	43.9	65.0	59.1	53.8
Percentage change between 2001 and 2005	-37.4	-36.8	-29.1	-27.3	-36.0

As the table reveals, in total there was a 36% decline in aspiration to enter HE from 2001 to 2005. The greatest decline was amongst black Africans, the smallest amongst whites. The racial profile, in fact, follows the continuum stereotype discussed earlier, which places black African and white learners at opposite ends of a continuum of response.

The vast majority (93.4%) of 2005 aspiration survey aspirant students indicated that they wanted to enter HE in 2006 – that is, directly from school. A disaggregation by race reveals that 94.6% of black Africans, 93.2% of coloureds, 91.9% of Indians / Asians and 83.6% of whites wanted to proceed directly to HE.

The percentage of learners wanting to enter HE in 2006 *as a percentage of the total response profile* was 41.5%. A disaggregation by race shows that 42.1% of black Africans, 31.1% of coloureds, 50.6% of Indians / Asians and 41.0% of whites aspired to enter HE.

The following table juxtaposes these aspiration figures:

Table 11: Grade 12 learner aspiration to proceed to HE within three years and in 2006, by race, 2005

Category of aspirant HE student	Black African	Coloured	Indian / Asian	White	Total
Planning to enter HE within three years (% of total)	53.5	43.9	65.0	59.1	53.8

Planning to enter HE in 2006 (% of those planning to enter HE)	94.6	93.2	91.9	83.6	93.4
Planning to enter HE in 2006 (% of total)	42.1	31.1	50.6	41.0	41.5

The paradox in the 2005 survey is that, while lower percentages of learners of all race groups than in the 2001 survey aspired to enter HE at some point in the future, far higher proportions of aspirant students than in the 2001 survey planned to proceed directly to HE in 2006.

From a field of study perspective, learners' preferences in 2005 were as follows.

Table 12: Preferred field of study in HE, by race, 2005

Programme area	Black African	Coloured	Indian / Asian	White	Total
Natural and mathematical sciences	21.6	14.7	10.9	13.7	19.8
Engineering and other applied sciences	24.1	14.7	20.0	13.7	22.8
Health sciences	10.9	12.0	16.1	13.9	11.6
Business / commerce	24.2	23.6	27.1	19.4	23.9
Education	2.2	4.1	2.7	6.5	2.7
Social sciences and applied humanities	13.0	20.2	18.6	17.6	14.2
Humanities	4.0	10.7	4.6	9.2	5.0
Total	100.0	100.0	100.0	100.0	100.0

As we see from this table,

- While a quarter of black Africans, coloureds and Indians / Asians want to study in the Business / commerce area, fewer than a fifth of whites plan to do so. Nevertheless, Business / commerce is the programme of choice for all four groups.
- Engineering is as popular for black Africans as Business / Commerce, but for the other race groups it is either a distant second (for coloureds) or lower down the rankings.
- Natural and mathematical sciences is, relatively speaking, far more popular amongst black Africans than amongst the other race groups.

- As in the 2001 survey, a higher percentage of Indians / Asians than learners of other groups want to study in the Health sciences.
- Also as in the 2001 survey, Education is far more popular amongst whites than amongst the other race groups – three times as many whites as black Africans preferring this programme area.
- The Social sciences are more popular amongst coloured learners than among learners of the other three groups.

Analysis of 2006 HE enrolments

An analysis of the Department of Education HEMIS database of enrolments for 2006 (Department of Education, 2007) reveals that 63 149 of the 508 363 learners who sat for the Senior Certificate Examination in 2005 enrolled in a HE institution in 2006 – that is, 12.4% of the cohort. This is 1.3 percentage points lower than the enrolment rate for 2002, and is in keeping with the lower aspiration to enter higher education discussed above.

A disaggregation by race reveals that the ratio of black African to coloured to Indian / Asian to white learners who entered HE institutions in 2006 straight from school was 58.4% : 7.8% : 7.0% : 26.8%. A comparison with the representation of these four race groups in the general population – where, in 2006, the ratio was 79.5% : 8.9% : 2.5% : 9.2% (Statistics South Africa, 2006), and where, even more acutely, in the 15 to 24-year-old bracket the ratio was 83.2% : 7.8% : 2.3% : 6.7% – reveals, as in the case of the 2001 enrolment profile, that black African and coloured students were under-represented in the first-year intake, while Indian / Asian and white students were over-represented. The differentials in the case of three of the race groups – black Africans, Indians / Asians and whites – especially in the case of the 15 to 24-year-old age group statistics – are large. *Racial equity, therefore, remains far from having been achieved in the first-year intake into HE in 2006 of learners who were in Grade 12 in 2005.*

As we saw above, 93.4% of the 2005 cohort of Grade 12 learners who planned to proceed to HE within three years of the survey date wanted to do so in 2006. A disaggregation of this percentage by race reveals that 80.6% of those wanting to enter HE in 2006 were black Africans, 5.8% were coloureds, 5.4% were Indians / Asians,

and 8.2% were whites. The aspiration-enrolment translation rate is based upon the following set of correlations (to which have been added the relative percentages of the four race groups aged 20-24 in 2001):

Table 13: Aspiration to enter HE in 2006, enrolments of students who were in Grade 12 in 2005, and representation in the general population aged 20-24 in 2006, by race

Category	Black African	Coloured	Indian / Asian	White	Total
Aspiration to enter HE in 2006	80.6	5.8	5.4	8.2	100.0
Enrolment in HE in 2006	58.4	7.8	7.0	26.8	100.0
General population aged 20-24 in 2006	83.2	7.8	2.3	6.7	100.0

As the table shows, there is a fairly strong correlation between the percentages of learners of three of the four race groups who aspired to enter HE in 2006 and the distribution of 20 to 24-year-olds within these race groups in the general population. The correlation for Indians / Asians is weak, more than double the percentage aspiring to enter HE in 2002 than are represented in the Indian / Asian population of 20 to 24-year-olds. While in the 2001-2002 transition (see Table 4) higher percentages of all race groups aspired to enter HE than were represented in the 20 to 24-year-old population, here we see that lower percentages of black African and coloured learners aspired to enter HE than were represented in the 20 to 24-year-old population, while higher percentages of Indian / Asian and white learners aspired to enter HE than were represented in the 20 to 24-year-old population. A slippage has taken place, therefore, in black African learner aspiration for HE in relation to black African representation in the population of 20 to 24-year-olds. Thirteen years into South Africa's democracy, it is worrying that fewer black Africans and coloureds than are represented in the population want to proceed to HE. *The implication would seem to be that education capital (the educational component of social capital), which is built up over time, plays a major role in educational aspiration.*

As in the case of the 2001-2002 transition, however, the enrolment profile is profoundly out of step with this correlation for all groups other than coloureds – for whom there is a perfect correlation between representation in the population of 20 to

24-year-olds and enrolment in HE. Thus, for example, only 58.4% of enrolments in HE institutions in 2006 were black African, in relation to black Africans' 83.2% representation in the general population of 20 to 24-year-olds. And at the other end of the spectrum, 26.8% of enrolments in HE institutions in 2006 were white, in relation to whites' 6.7% representation in the general population of 20 to 24-year-olds. *That over a quarter of the enrolments of first-time entering students in school the previous year are white well into the second decade of democratic rule would seem to confirm the salience of education capital as an explanatory factor in the slow pace of education pathway reform in South Africa.*

As in the case of the 2002 programmatic enrolment profile, large differences exist between the four race groups with regard to their programme areas and fields of enrolment in 2006, as Table 14 indicates.

Table 14: Enrolments within Department of Education programme areas by race, 2006¹²

Programme area	Coloured		White	
	No.	%	No.	%
Natural and mathematical sciences	544	11.1	2 662	15.8
Engineering and other applied sciences	475	9.7	2 267	13.5
Health sciences	363	7.4	1 081	6.4
Business / commerce	1 450	29.5	4 019	23.9
Education	436	8.9	784	4.7
Social sciences and applied humanities	868	17.7	3 620	21.5
Humanities	772	15.7	2 397	14.2
Total	4 908	100.0	16 830	100.0

The four key findings about programmatic enrolment, as revealed by this table, are the following:

¹² The figures in this and the following table, based on raw data supplied by the Department of Education HEMIS section, are provisional, and may be inflated by virtue of institutional double counting of distance enrolments.

1. Business / commerce is the most subscribed programme for black Africans, coloureds and Indians / Asians, by a fairly large margin; but for whites, a similar percentage are enrolled in the Social sciences. That a third of all black African enrolments are in Business / commerce is both in keeping with the spirit of black entrepreneurship currently gripping the country and indicative of a large imbalance in the enrolment profile for this group.
2. The Social sciences is the second most subscribed area for all four race groups, though by a small margin in the case of all groups but whites (for whom Social science enrolments are closer to Business / commerce than to Natural and mathematical sciences enrolments).
3. Education is the least subscribed programme for black Africans, Indians / Asians and whites, but not for coloureds – for whom the Health Sciences is the least subscribed programme area.
4. Coloured student enrolment evinces the flattest profile of the four.

Aggregated to the three broad Department of Education fields of study, the picture is as follows:

Table 15: Enrolment distribution in three Department of Education fields of study, by race, 2006

Field of study	Africans	Coloureds	Indians	Whites	Total
Humanities	29.8	42.3	29.9	40.4	33.6
Business and commerce	33.2	29.5	29.4	23.9	30.1
SET	37.0	28.2	40.7	25.7	36.3
Total	100.0	100.0	100.0	100.0	100.0

The aggregation in Table 15 reveals the extent of the differences between the four race groups with regard to enrolment choices. While three out of ten black African and Indian / Asian students were enrolled in the Humanities in 2006 in relation to the other two fields, two out of five white and coloured students were thus enrolled. Business / commerce enrolments are on a continuum, from black African enrolment of 33.2% to white enrolment nearly 10% lower, at 23.9. While black African enrolment ranges from 29.8% to 37% – a difference of only 7.2% – the enrolment ranges for the other groups are much larger: for coloureds, from 28.2 to 42.3 (a

difference of 14.1); for Indians / Asians, from 29.4 to 40.7 (a difference of 11.3%); and for whites, from 23.9 to 40.4 (a difference of 16.1). From this perspective, the black African profile is far more balanced than that of the other three groups – though the profile for coloureds is closest to the medium-term ideal of 40% : 30% : 30% Humanities to Business / Commerce to SET espoused in the National Plan for Higher Education objective for enhancing economic development (Department of Education, 2001: 30). As in the 2002 enrolment profile, moreover, black African students remain “clustered”, to appropriate the language of the National Plan, not in the Humanities but in Business and commerce.

A comparison of the four population groups according to their enrolment choices reveals the following:

Table 16: Distribution of enrolments within Department of Education programme areas by race, 2006

Programme area	Coloured		White	
	No.	%	No.	%
1. Natural and mathematical sciences	544	5.9	2 662	28.7
2. Engineering and other applied sciences	475	5.0	2 267	23.6
3. Health sciences	363	9.4	1 081	27.9
4. Business / commerce	1 450	7.7	4 019	21.3
5. Education	436	15.1	784	27.1
6. Social sciences and applied humanities	868	7.1	3 620	29.9
7. Humanities	772	12.7	2 397	39.5
Total	4 908	7.8	16 830	26.9

The three key findings to emerge from this table are the following:

1. Just under two-thirds of those students enrolled in Engineering and in Business / commerce in 2006 were black African.
2. Just over half (52.7%) of the students enrolled in Education were black, just over a quarter (27.1%) were white. This signals a significant departure from the 2002 enrolment profile, where 62% of enrolments in Education were white and only 28.3% black African.
3. White enrolments continue to be proportionally much higher than black African, coloured and Indian / Asian enrolments in relation to the representation of these population groups in the general population of South Africa: between one- and two-fifths of enrolments are white. Mid-2006, the ratio of black Africans to coloureds to Indians / Asians to whites in the general population was 79.5% : 8.9% : 2.5% : 9.2% (Statistics South Africa, 2006). Moreover, in the 15-19 age group the ratio was 83.4% : 7.8% : 2.2% : 6.6%, and in the 20-24 age group 83.0% : 7.9% : 2.3% : 6.8% – these two age groups being the two from which Grade 12 school-leavers were drawn. As these age differentials show, black Africans make up a larger proportion of the population in the younger age cohorts than they do across the entire spectrum of age categories.

From the above table, then, we can deduce that black Africans are under-represented in the student enrolment cohort in all seven programme areas, while Indians / Asians and whites are over-represented in all seven areas. Coloured enrolment is the only profile to show unevenness in these terms – coloureds being under-represented in four of the seven programmes of study.

These figures indicate, thirteen years into democratic rule, that there remains a lot more work for HE institutions to do in ensuring that HE enrolments amongst first-time entering students straight from school reflect the broader demographics of the country.

A comparison of Grade 12 learner preferences in 2005 for study in specified areas and their actual enrolment choices one year later (in 2006) is disaggregated by race group in the following table:

Table 17: Grade 12 study preference in 2005 and first-year programme enrolment in 2006, by race

Programme area	2005 preference (%)				2006 enrolment (%)			
	African	Coloured	Indian	White	African	Coloured	Indian	White
Natural and mathematical sciences	21.6	14.7	10.9	14.7	14.7	14.7	15.3	14.7
Engineering and other applied sciences	24.1	14.7	20.0	16.7	16.7	16.7	16.7	16.7
Health sciences	10.9	14.7	16.1	5.6	5.6	5.6	8.7	5.6
Business / commerce	24.2	14.7	27.1	33.2	33.2	33.2	29.4	33.2
Education	2.2	14.7	2.7	4.2	4.2	4.2	3.4	4.2
Social sciences and applied humanities	13.0	14.7	18.6	18.6	18.6	18.6	18.7	18.6
Humanities	4.0	14.7	4.6	7.0	7.0	7.0	7.8	7.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

This profile shows that:

- Significantly higher percentages of students of all four race groups enrolled in the Humanities in 2006 than had aspired to do so in 2005.
- Significantly lower percentages of students of all four race groups enrolled in the Health sciences than had aspired to do so.
- Education enrolments outstripped aspirations for all groups bar whites.
- Higher percentages of students of all four race groups enrolled in Business / commerce than had intended to do so.
- Lower percentages of students of all four groups enrolled in Engineering and other applied sciences in 2006 than had aspired to do so in 2005 – though the percentage difference for whites is negligible.
- Lower percentages of black African and coloured students than of Indian / Asian and white students enrolled in the Natural and mathematical sciences than had aspired to do so.

- Higher percentages of black African and white students than of coloured students enrolled in the Social sciences than had aspired to do so, Indian / Asian enrolment in this programme area matching aspiration.

At the level of fields of study, the transition from Grade 12 preference to first-year enrolment (2005-2006 transition) is indicated in Table 18.

Table 18: Grade 12 learner field-of-study preference in 2005 and first-year enrolment in 2006, by race

Field of study	2005 preference (%)				2006 enrolment (%)			
	African	Coloured	Indian	White	African	Coloured	Indian	White
Humanities	19.2		25.9		29.8		29.9	
Business and commerce	24.2		27.1		33.2		29.4	
SET	56.6		47.0		37.0		40.7	
Total	100.0		100.0		100.0		100.0	

This table reveals that

- higher percentages of students of all race groups enrolled in the Humanities than had planned to do so – especially black African and white learners
- higher percentages of all groups enrolled in Business / commerce than had planned to do so; and
- significantly lower percentages of all groups enrolled in the field of SET than had aspired to do so.

These shifts indicate a broad shift from preference for study in SET to enrolment in Business / commerce and the Humanities – a profile that differs significantly from that seen four years earlier (the 2001-2002 transition), where the preference was for study in both SET *and* in Business / commerce. While Business / commerce may appear from its preference profile to have lost some of its allure, then, the enrolment profile suggests that its star remains in the ascendancy.

Discussion

What emerges clearly from the above presentation of selected findings of the two surveys and of the analysis of HEMIS data is the extent to which HE enrolment rates are out of step both with learner aspirations for HE and with the representation of the four race groups of university-going age in the general population.

From an aspiration perspective, the 2005 profile reveals that there has been a major decline in aspiration to proceed to HE not only at the aggregate level (from 84.1% in 2001 to 53.8% in 2005) but at the race-disaggregated level – from 85.4% for black Africans in 2001 to 53.5% for the same group in 2005, and from 81.3% for whites in 2001 to 59.1% for the same group in 2005. What the shift also indicates is that there has been a reversal in aspiration to enter HE from 2001 to 2005: in 2001, a higher percentage of black African than of white learners (85.4% : 81.3%) wanted to enter HE; but in 2005, a higher percentage of white than of black African learners (59.1% : 53.5%) wanted to enter HE. What factors can have contributed to this reversal?

Three possible explanations can be advanced for this shift. The first is that a greater pragmatism may have set in amongst black African learners regarding the reach of their expectations for further study – inadequate Grade 12 symbols for HE study proving to be a disincentive to admission to HE institutions. While there have certainly been improvements in the overall Senior Certificate pass rate annually for some years, black African learners continue to perform more poorly than their white counterparts, as evinced by the far larger number of formerly black African schools than formerly white (“model C” schools) with matric pass rates in the bottom two quartiles (Department of Education, 2000b, 2004). There is a positive correlation, at the other end of the spectrum, between intention to enter HE and the average Grade 11 symbols of learners. A regression analysis of the 2001 survey data revealed that the odds of learners with an A-average Grade 11 symbol indicating that they intended entering rather than not entering HE were 8.6 times higher than the odds of learners with an F-G symbol indicating that they intended entering rather than not entering HE. The odds of learners with a B-average Grade 11 symbol indicating that they intended entering rather than not entering HE were 4.5 times higher than the odds of learners with an F-G symbol indicating that that intended doing so; and so forth (Cosser with du Toit, 2002).

The second is that the reinvented role of FET colleges in addressing the intermediate-level skills needs of the country, boosted by state recapitalisation of the FET sector, together with a fairly aggressive marketing campaign that has placed the sector in the education limelight may have deflected some interest away from HE study.

And the third is that funding for HE, despite the annual increases in disbursements by the state-funded loan-cum-bursary scheme (the National Student Financial Aid Scheme, or NSFAS) for academically capable students unable to afford university fees, continues to prove a major disincentive to black African students entering HE. The 2001 survey revealed that external sources of funding for HE study (NSFAS, bank loans, bursaries, and scholarships) were more important for black Africans than for coloureds than for Indians / Asians than for whites (the mean values can be plotted on a continuum) – the corollary being that *internal* sources of funding (such as parental finance) are *less* important influences upon black Africans than upon coloureds than upon Indians / Asians than upon whites – in inverse proportion to reliance on external funding sources (for further discussion, see Cosser with du Toit, 2002). The 2005 survey confirms that the perception of the availability of financial assistance for study is highest amongst black African learners on a five-point Likert scale (3.6), and is not even significant for Indian / Asian and white learners (2.9 and 2.4 respectively – below the mid-point) (Cosser with Winnaar, forthcoming).

The influence of these factors on learner aspiration for HE would, however, as the use of the subjunctive mood in the above paragraphs indicates, need to be subjected to scrutiny through further research.

From an enrolment perspective, the 2002 and 2006 profiles show a reversal of white and black African enrolments in HE institutions – black African enrolments (relative to those of the other three groups) having increased from 53.2% in 2002 to 58.4% in 2006, white enrolments having decreased from 30.5% in 2002 to 26.8% in 2006 in relation to the enrolments of the other groups. And since the enrolments of coloured and Indian / Asian learners having remained fairly constant (from 7.7% to 7.8% for coloureds, and from 8.6% to 7.0% for Indians / Asians), we can assume that the shift has largely been between black African and white enrolments. The five percentage point increase in black African enrolments, moreover, far outstrips the 0.7 percentage

point growth in the proportion of black Africans in the general population aged 20 to 24 over this period (black Africans in this age category made up 82.5% of the population in 2001, 83.2% in 2006, while white enrolments over the same period remained constant – 6.9% in 2001, 6.7% in 2006).

While the aspiration profile is disappointing from a black African perspective, then, the enrolment profile from the same perspective is encouraging. That the percentage change in black African enrolments between 2002 and 2006 is so slow, however – on average, about one percentage point per year – underscores the extent to which discrimination persists in the learning pathway from school to HE.

I alluded earlier to the extent to which such discrimination is the product of historical legacy and an attendant dearth in the development of education capital. An examination of the socio-economic status (SES) of respondents to the 2001 and 2005 aspiration surveys points up the low base from which black Africans as a group in South Africa must perforce operate.

The SES of learners participating in the surveys was determined through the establishment of an SES indicator based upon responses to two of the questions in the questionnaires: “What is the highest level of education of each of your parents / guardians (where applicable)?”; and “How much do your parents earn per month (where applicable)?” The levels of education and income levels of both parents / guardians, where applicable, were taken into account in the calculation. The SES variable was calculated using four variables from the survey databases: education level of the father / male guardian; education level of the mother / female guardian; income level of the father / male guardian; and income level of the mother / female guardian. Categories within these variables were re-categorised into three categories of an inherent order to form ordinal variables for each – that is, variables with categories for “low”, “middle” and “high”.

The following table shows how categories for the education and income variables were re-categorised into an ordinal variable.

Table 18: Categorization of education and income variables into an ordinal SES variable, 2001

Education	Income	Ordinal Variable	Value (Score)
Primary school or less Some secondary schooling	Less than R500 R 501 – R1 000 R 1 001 – R2 000 R 2 001 – R 3 000	Low	1
Matric College Certificate	R 3 001 – R 4 000 R 4 001 – R 5 000 R 5 001 – R 7 500 R 7 501 – R 10 000	Middle	2
Technikon or university certificate or diploma Technikon or university degree	R 10 001 – R 15 000 R 15 001 – R 20 000 More than R 20 000	High	3

For the 2005 survey, the income categories were modified to take account of inflation-induced remuneration increases and a finer-grained qualification structure, as follows:

Table 19: Categorization of education and income variables into an ordinal SES variable, 2005

Education	Income	Ordinal Variable	Value (Score)
No formal education	No income	Low	1
Some primary schooling	R 1 – R 400		
Grade 7	R 401 – R 800		
Some secondary schooling	R 801 – R 1 600		
Matric / Grade 12	R 1 601 – R 3 200	Middle	2
Technical college certificate	R 3 201 – R 6 400		
	R 6 401 – R 12 800	High	3
Technikon certificate or diploma	R 12 801 – R 25 600		
University certificate or diploma	R 25 601 – R 51 200		
Technikon degree	R 51 201 – R 102 400		
University degree	R 102 400 – 204 800		
	R 204 801 or more		

The four new ordinal variables for each of the re-categorised variables were then used to calculate a single SES variable that assigns an SES score to each learner in the database. The SES variable is simply based on the average score of the four ordinal variables and was calculated using the following formula:

$$SES = \frac{\left(\sum_{\text{Father} - \text{Mother}} \text{Education} \right) + \left(\sum_{\text{Father} - \text{Mother}} \text{Income} \right)}{4}$$

Scores within the calculated SES variable ranged from 1 – 3, where scores ranging between 1 – 1.6666666 were coded to form “Low socio-economic status”, scores between 1.6666667 – 2.3333333 were coded to form “Middle socio-economic status”, and scores between 2.3333334 – 3 were coded to form “High socio-economic status”.

The national profile of Grade 12 learners in terms of these three categories shows that, in 2001, the ratio of high to middle to low SES was 5% : 17% : 78%, and in 2005, 11% : 18% : 71%.

While there are various ways in which to calculate SES using different variables, and while the recategorisation of income in the 2005 calculation may not be entirely accurate, the findings show nevertheless that there has been only a slight improvement over a four-year period in the SES profile, the proportion of learners’ families in the low SES bracket changing only seven percentage points over the period.

While one can posit SES on its own, moreover, it is also possible to cross-tabulate the SES indicator with race. The results of such a cross-tabulation are portrayed in Table 20 for the 2001 survey, Table 21 for the 2005 survey.

Table 20: Socio-economic status of 2001 survey respondents, by race

		Socio-economic status			Total	
		Low	Middle	High		
Race	African	n	7936	1207	250	9393
		% within population group	84.5	12.8	2.7	100.0
	Coloured	n	561	182	34	777
		% within population group	72.2	23.4	4.4	100.0
	Indian	n	146	143	54	343
		% within population group	42.6	41.7	15.7	100.0
White	n	210	452	248	910	
	% within population group	23.1	49.7	27.3	100.0	
Total	n	8853	1984	586	11423	
	% within population group	77.5	17.4	5.1	100.0	

A chi-square test to determine the distinction in SES between black Africans, coloureds, Indians / Asians and whites indicates that there is a statistically significant difference between these four groups.¹³

Table 21: Socio-economic status of 2005 survey respondents, by race

			Socio-economic status			
			Low	Middle	High	Total
Race	<i>African</i>	n	197 898	39 861	21 392	259 151
		% within population group	76.3	15.4	8.3	100.0
	<i>Coloured</i>	n	11 503	3 345	1 842	16 691
		% within population group	68.9	20.0	11.1	100.0
	<i>Indian</i>	n	7 888	5 145	1 466	14 500
		% within population group	54.4	35.5	10.1	100.0
	<i>White</i>	n	2 004	8 602	8 855	19 461
		% within population group	10.3	44.2	45.5	100.0
Total	n	219 294	56 953	33 556	309 803	
	% within population group	70.8	18.4	10.8	100.0	

From these tables we see – to focus on the two groups at opposite ends of the continuum – that 84.5% of black Africans fell into the low SES bracket in 2001, compared with 23.1% of whites, and that, four years later, 76.3% of black Africans fell into the low SES bracket, compared with 10.3% of whites. The percentage changes for black Africans and whites in the low SES category differ markedly: - 9.7% for black Africans; -55.4% for whites. In other words, the lot of poor white people has improved far more than that of poor black African people over a four-year period.

This finding, together with the broader finding that SES-race cross-tabulations four years apart point up the extent of the correlation between low SES and colour in South Africa, underscores the extent to which SES is likely to be a strong contributory variable in the decline in HE aspiration and in the moderate growth in black African enrolments over the four-year period in question. Again, however, further research that factors out the effects of other variables is needed to quantify the precise effect of SES on aspiration and enrolment.

¹³ The asymptotic significance is .00; and as the Phi, Cramer's V and Contingency Coefficient values suggest, the significance of these differences (.450, .318 and .410 respectively, where 0 = no association and 1 = total association) is fairly strong.

SES is a component of the class stratification the Council on Higher Education (CHE) is keen to have HE address. In one of its early publications, the Council claims that “the extent to which equity and access are actively promoted or frustrated will determine the nature and extent of social and class stratification and have a direct bearing on the nature of South Africa’s democracy, labour market and social stability” (Council on Higher Education, 2000: 27). The effect, however, is two-way: without a fairly dramatic growth in the proportions of the population in the middle and high SES brackets, access to HE for black Africans will continue to be restricted and indirect discrimination perpetuated.

Conclusion

This conclusion will not recapitulate the arguments made in this paper. Rather it will chart a way forward for further research that foregrounds the need to isolate discrimination as a key variable in pathway studies.

The methodological corollary to the statement in the penultimate paragraph of the last section – that further research which factors out the effects of other variables is needed to quantify the precise effect of SES on aspiration and enrolment – is that there is no one approach for measuring racial discrimination, no single angle from which to approach the issue. This paper has looked at two transitional moments in time involving identical cohort types (Grade 12 learners) within one domain (the school). To ascertain the nature and extent of discrimination in learning pathways, however, researchers need not only to validate findings at regular intervals (over a sustained period involving more than two investigations) to establish reliability and trends but to track the same cohorts of learners over a considerable period of time. In short, both longitudinal and panel studies are needed.

Partly towards this end, the 2001 and 2005 aspiration surveys discussed in this paper have each been followed by a tracer study – one in 2002 and the other in 2006. The HSRC plans to track the 2005 cohort beyond 2006, moreover, to ascertain learners’ destinations in 2007 and 2008. What these incipient panel studies have allowed the research team to do is to study, albeit in a limited way, the variables that have impacted on learner aspiration and decision-making. Early signs are that there is a

high degree of reliability in the variables that affected the aspirations and enrolment decisions of learners in the four surveys – a reliability which will need to be verified through further research.

In addition to sustained investigation of learner pathways, moreover, the systemic effects upon learners of possible discrimination in their learning and career environments need to be examined. This will involve, amongst other things, investigation of HE institutional access policies and practices in the context of broader HE policy and practice at the macro level.

The National Plan for Higher Education (Department of Education, 2001) highlights four key equity issues that require monitoring: differential representivity across individual HE institutions; the participation rate of black Africans in HE; the uneven distribution of enrolments across different programme areas; and wide disparities in the graduation rates of black African and white students. To this can be added a fifth: the rate at which black African students in particular, and learners of colour in general, access HE the year after school.

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