

Student Retention & Graduate Destination

Student Retention & Graduate Destination: Higher education & labour market access & success

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Published by HSRC Press
Private Bag X9182, Cape Town, 8000, South Africa
www.hsrcpress.ac.za

First published 2010

ISBN (soft cover) 978-0-7969-2309-7

ISBN (pdf) 978-0-7969-2310-3

ISBN (e-pub) 978-0-7969-2311-0

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Copyedited by Lee Smith
Typeset by Robin Taylor
Printed by Logo Print, Cape Town, South Africa

Distributed in Africa by Blue Weaver
Tel: +27 (0) 21 701 4477; Fax: +27 (0) 21 701 7302
www.oneworldbooks.com

Distributed in Europe and the United Kingdom by Eurospan Distribution Services (EDS)
Tel: +44 (0) 20 7240 0856; Fax: +44 (0) 20 7379 0609
www.eurospanbookstore.com

Distributed in North America by Independent Publishers Group (IPG)
Call toll-free: (800) 888 4741; Fax: +1 (312) 337 5985
www.ipgbook.com

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Acknowledgements

The Student Retention and Graduate Destination project began in the Human Resources Development research programme on 1 April 2004. This project continued in the Education, Science and Skills Development research programme, culminating in case study reports of seven institutions. The chapters for this monograph were written by the authors of the case study reports. The monograph therefore reflects the contribution of a number of individuals during the life of the project, whom I acknowledge below:

- Dr Andre Kraak, former Executive Director of the research programme, for his vision regarding the importance of this project and for ensuring that it was housed in the Human Sciences Research Council (HSRC).
- Michael Cosser, for his commitment to the study during the development of the project's research proposal, survey questionnaires and the dummy tables used for capturing the study's quantitative data.
- The Project Committee, with members Dr Andre Kraak, Dr Glenda Kruss, Dr Andrew Paterson, Michael Cosser, Mariette Visser and Matselane Tshukudu, who monitored the project management processes and provided project oversight.
- Mariette Visser provided the data management expertise and analysis of the data from the Department of Education's Higher Education Management Information System (HEMIS).
- The research team, for conducting research and compiling case study reports for various higher education institutions. They are: Percy Moleke, for the former Pretoria Technikon; Mahlubi Mabizela, for the University of Fort Hare; Trish Gibbon, for Stellenbosch University; Gill Scott, for the University of the Witwatersrand; Mignonne Breier, for the University of the Western Cape; and Michael Cosser, for the former University of the North. Moeketsi Letseka conducted research and compiled the case study report for the former Peninsula Technikon.
- Dr Haroon Borat, Director of the Development Policy Research Unit at the University of Cape Town, conducted an econometric macro-methodological analysis of the study's data.
- Special acknowledgement is made of the late Charlton Koen, whose critical comments on the methodology of the HSRC's research in general, and on the methodology of the project in particular, were invaluable.
- Matselane Tshukudu, the Project Administrator, provided the financial and administrative support for the project and ensured that the study's milestones were delivered on schedule.
- Meshack Aphone and Milton Mokoni, of HSRC Operations, showed diligence and tireless commitment in ensuring the postal delivery of the 34 548 questionnaires.
- Members of the project's Reference Group guided the implementation of the project: Hanlie Griesel (representing the then South African Universities Vice-Chancellors' Association, now evolved into Higher Education South Africa); Ronnie Khundrasani (then with the Council of Technikon Principals); Noxolo Ntintili (University of Fort Hare); Yuraisha Chetty (University of the Witwatersrand); Dr James Garraway (former Peninsula Technikon, now part of Cape Peninsula University of Technology); Larry Pokpas and Louis Dippenaar (University of the Western Cape); Prof. Molefe Ralenala (University of the North, now part of the University of Limpopo); Prof. Amanda Lourens (former Pretoria Technikon, now part of Tshwane University of Technology); and Prof. Johann Groenewald (University of Stellenbosch).
- The Vice-Chancellors of the seven participating institutions for signing the Memoranda of Understanding and for granting the HSRC permission to access their institutions' raw unit data from the HEMIS unit in the Department of Education. They are Professors Derrick Swartz (University of Fort Hare), Chris Brink (University of Stellenbosch), Brian O'Connell (University of the Western Cape),

Marcus Balintulo (Peninsula Technikon), Loyiso Nongxa (University of the Witwatersrand), Mahlo Mokgalong (University of the North) and Reggie Ngcobo (Pretoria Technikon).

- The Vice-Chancellors of the University of the Witwatersrand, Fort Hare, Peninsula Technikon, University of the Western Cape and Stellenbosch for the opportunity they afforded the research team to hold report-back seminars at their institutions between June and August 2007. The seminars created space for dialogue with key role-players in the management of the universities' academic affairs and for considering strategies for addressing the key issues identified in the study as the main causes for student attrition.
- Nasima Badsha, former Deputy Director-General in the Department of Education, for her reciprocity in granting the HSRC permission to access the seven institutions' raw unit data. sJean Skene, Director of HEMIS, diligently attended to all our data queries, and Prof. Ian Bunting proffered advice on the deployment of HEMIS data for planning and administering the study's survey.
- The co-funders of the study, namely the Council on Higher Education and the Ford Foundation, for their generous funding towards the production of this monograph.

Moeketsi Letseka, Project Manager
June 2008

Postscript

Moeketsi Letseka left the HSRC in July 2008. I would like to thank him for his contributions towards the Student Retention and Graduate Destination project and to the manuscript for this monograph.

The completion of an academic manuscript is a long and arduous process. I would like to thank Michael Cosser, one of the initiators of the original project, for his effort, time and commitment in ensuring the completion of the manuscript.

My thanks go also to Mignonne Breier and Mariette Visser, also part of the research team from the start of the project, for their work on the completion of this manuscript.

*Dr Vijay Reddy, Executive Director, Education, Science and Skills Development research programme
July 2009*

Acronyms and abbreviations

BCM	Business, Commerce and Management
CCDU	Counselling and Careers Development Unit (Wits)
CLTD	Centre for Learning and Teaching Development (Wits)
DoE	Department of Education
EAP	economically active population
FET	further education and training
FTE	full-time equivalent
HBI	historically black institution
HEI	higher education institution
HEMIS	Higher Education Management Information System
HSRC	Human Sciences Research Council
HWI	historically white institution
NSFAS	National Student Financial Aid Scheme
Pentech	Peninsula Technikon
PtaTech	Pretoria Technikon
SCE	Senior Certificate Examination
SES	socio-economic status
SET	Science, Engineering and Technology
SU	Stellenbosch University
UCT	University of Cape Town
UFH	University of Fort Hare
UNorth	University of the North
UP	University of Pretoria
UWC	University of the Western Cape
Wits	University of the Witwatersrand

Introduction

Michael Cosser and Moeketsi Letseka

This monograph comprises seven chapters commissioned by the principal investigator (Moeketsi Letseka) of the Student Retention and Graduate Destination Study, which was conducted between 2005 and 2006 by a team in the erstwhile Human Resources Development research programme of the Human Sciences Research Council (HSRC).

In this introduction we discuss the antecedents of the study that gave rise to this volume, describe the study itself, and outline the organisation of the monograph.

Background to the study

The Student Retention and Graduate Destination Study was conceived in response to multiple concerns that South Africa's higher education throughput rates were too low (Cloete & Bunting 2000; DoE 2001a; *Sunday Times* 6 August 2000¹). The *National Plan for Higher Education* (DoE 2001a) expressed concern that, at 15%, South Africa's 'graduation rate'² was one of the lowest in the world, and noted further that there were wide disparities in the graduation rates of black and white students, and that the evidence suggested that the average graduation rate for white students tended to be more than double that of black students.³ The Department of Education (DoE) posited that at some institutions the graduation rate ranged from 6% at the low end to 24% at the high end.

The *National Plan* set target graduation rates that distinguished between contact and distance programmes and among different types of qualification. For example, it set a target graduation rate of 25% for three-year undergraduate programmes through contact delivery and a 15% target for the same type of programme through distance education. The document noted that few institutions

1 F Meintjies, 'Higher education registers a fail mark overall'.

2 At the time of publication of the *National Plan*, graduation rates were arrived at by calculating the number of graduates divided by the headcount enrolments for any particular year. In the absence of cohort studies tracing a group of students from first year to graduation, which would provide an accurate picture of the throughput rate, graduation rate remains a proxy for throughput. For further information, see Subotzky (2003).

3 In this monograph we disaggregate figures by race and gender to show the extent of transformation. With our history of enforced racial segregation, it is important to see whether the racial profiles in higher education are changing. To do this, we unfortunately need to continue to make use of the racial classifications that were used to separate and discriminate against people during apartheid. We use the terms 'African', 'coloured', 'Indian' and 'white' to denote the different population groups, because these are the most commonly used in the data sources. Where we wish to refer to all population groups other than white, we use the term 'black'. It should be noted, however, that the terminology is becoming increasingly problematic as more South Africans of all races assert their right to be called 'Africans' and many refuse to classify themselves on a racial basis at all.

TABLE I.1 *National benchmarks for graduation rates, 2001 and 2004 (%)*

Qualification type	Graduation rate (contact)		Graduation rate (distance)	
	National Plan 2001	Adjusted 2004	National Plan 2001	Adjusted 2004
Undergraduate				
Up to 3 years	25	22.5	15	13.5
4 years or more	20	18.0	10	9.0
Postgraduate				
Up to honours	60	54.0	30	27.0
Masters	33	30.0	25	22.5
Doctoral	20	NS	20	NS

Source: DoE (2001a, 2004a)

Note: NS = Not specified

had met the proposed benchmarks. If they had, the higher education system would have been producing about 40 000 more graduates than it was at the time (2001). Subsequently, the rates were found to be unrealistically high and were reduced by two-and-a-half percentage points for three-year undergraduate qualifications and by six percentage points for honours level qualifications (DoE 2004a). Table I.1 sets out both the old and new target rates.

Although the DoE lowered its target graduation rates somewhat, improved throughput remains a priority, to the extent that the new funding framework links funding to the number of graduates an institution produces. (For a discussion of its implications, see Breier and Mabizela [2007].)

Student success

Another way to assess student progress is to calculate success rates. These rates take into account full-time equivalent (FTE) student enrolments rather than headcount enrolments.⁴ When these data are disaggregated by race, Africans and coloureds are the worst affected. According to the DoE, in the period 2001–04, the success rates of white undergraduates averaged 84%, Indians 80%, coloureds 74% and Africans 69% (DoE 2001b, 2002, 2003, 2004b). Table I.2 provides the full profile.

The graduation and success rates are motivating factors behind the DoE's concern about student dropout. However, they are arguably too crude a measure to be taken seriously: only longitudinal cohort studies can give an accurate picture of student throughput. Graduation rates, moreover, are severely affected by enrolment patterns. Rapid increases in enrolments lead to corresponding drops in graduation rates, which are not necessarily related to actual throughput. Conversely, graduation rates improve when enrolments decline.

4 FTEs are calculated by (a) assigning to each course a fraction representing the weighting it has in the curriculum of a qualification and (b) multiplying the headcount enrolment of that course by this fraction. Success rates are determined by (a) calculating FTE-enrolled student totals for each category of courses, (b) calculating FTE degree/diploma credits for each category of course using the same credit values, and (c) calculating the percentage of FTE credits in relation to FTE enrolments (i.e. FTE enrolments divided by FTE credits multiplied by 100 = success rate percentage). The benchmark for success rates is not clear, with estimates ranging from 75% to 80% for contact postgraduate and undergraduate combined (DoE 2005: 37–38; Subotzky 2003: 378).

TABLE I.2 Undergraduate success rates of contact students in all public higher education institutions, by race, 2001–04

Year	African	Coloured	Indian	White	Average
2001	65	75	78	85	74
2002	70	74	81	86	77
2003	70	71	80	85	76
2004	70	75	79	84	75

Source: DoE (2001b, 2002, 2003, 2004b)

Student attrition

Concern with dropout rates has become a worldwide phenomenon. Education policy-makers, tertiary education role-players, businesses and employers the world over are working towards developing best practices for conceiving and implementing acceptable student retention policies, maintaining acceptable graduation and throughput rates, and reducing high dropout rates. The dropout rate in the UK, for example, is estimated to be 22% (Grimston 2008), while UK universities are under pressure to increase participation in higher education to 50% for under-thirties by 2010/11 (House of Commons Public Accounts Committee 2009). The attrition rate in Australia in 2002 was 19% for domestic students and 18% for international students (DEEWR 2002). In the United States, approximately 58% of first-time students seeking a bachelor's degree or its equivalent and attending a four-year institution full-time in 2000/01 completed the degree or its equivalent at that institution within six years (National Center for Education Statistics 2007).⁵

If student attrition is a worldwide phenomenon, the problem is acute in South Africa. In 2005, the DoE's Directorate on Higher Education Planning reported that of the 120 000 students who enrolled in higher education in 2000, 36 000 (or 30%) dropped out in their first year of study. A further 24 000 (or 20%) dropped out during their second and third years of study. Of the remaining 60 000 (or 50%), fewer than half (22%) graduated with a generic bachelor's degree within the specified three-year period (DoE 2005).

One of the key factors contributing to student attrition in South Africa has been shown to be school leavers' under-preparedness for higher education study (Moll 2004; Nyamapfene & Letseka 1995; Slonimsky & Shalem 2006). While a sub-standard schooling system goes some way towards accounting for student under-preparedness, the other key factor influencing attrition is financial difficulty. The DoE acknowledges this dual influence by attributing high dropout rates 'to *financial and/or academic exclusions* and students in good academic and financial standing not remaining in the public higher education system' (DoE 2001a: 17, emphasis added). The Student Retention and Graduate Destination Study was initiated to provide a clearer understanding of the roles of these and other factors in shaping the trajectories of students into, through and out of higher education institutions and into the labour market.

⁵ This graduation rate was calculated as the total number of completers within the specified time to degree attainment divided by the cohort of students who first enrolled in the 2000/01 academic year. This indicator focuses on the cohort of first-time, full-time students seeking a bachelor's degree or its equivalent who began attending a four-year institution in 2000 and who completed the degree or its equivalent four, five and six years later.

Aims and objectives of the study

Seven institutions were selected for inclusion in the study: the University of Fort Hare (UFH), the University of the Western Cape (UWC), Peninsula Technikon (Pentech), Stellenbosch University (SU), the University of the Witwatersrand (Wits), the University of the North (UNorth) and Pretoria Technikon (PtaTech).

From a programmatic perspective, the study sought to investigate those factors that influence students' 'choices' of fields of study in order to enhance our understanding of the reasons for study differentiation. The use of inverted commas around 'choices' reflects a recognition that, for many students, their choices of fields of study are constrained by a range of factors often beyond their control: their socio-economic status (SES) and subsequent inability to finance certain programmes of study; the quality of their school education; the range of school subjects open to them when they made their subject 'choices' – or often, more correctly, when they were streamed into pursuing certain subjects – in Grade 9; and the extent and nature of the career guidance open to them.

The study sought to investigate in two ways the factors that influence the pathways of students as they progress through the higher education system into the labour market: by tracing a cohort of students into the labour market, asking them to retrace their learning and career trajectories from the moment of their school subject choices to their present destinations; and by understanding, through visits to the seven selected higher education institutions, the dynamics that promote or hinder student movement from first registration to dropout or to graduation.

The students traced were of two kinds: those who graduated with a notional three- or four-year qualification in 2002, and those who left the higher education system in 2002 without achieving a qualification. This design assisted the research team to ascertain which factors enable students to complete a qualification as well as the factors that *disenable* them from completing a qualification. By considering the differential labour market situations of these two groups of students, the study sought, at the simplest level, to assess what value the achievement of a higher education qualification adds in terms of enhancing the employability and improving the employment situations of students.

Labour market outcomes aside, however, a major focus of the study was on those factors that enable not only graduation but also the achievement of milestones along the way to graduation – in other words, the factors that facilitate student retention.

Underlying the study was the conviction that an understanding of the factors influencing student pathways would assist policy-makers and planners to devise interventions to increase the participation rate in higher education, which would lead, in turn, to increased graduation output.

Methodology

The project comprised three phases:

1. Institutional profiles of graduates and non-completers from the seven institutions constructed from the unit record data on students, obtained with the permission of the institutions involved from the DoE's Higher Education Management Information System.
2. Profiles of individual students obtained from two surveys – one distributed to non-completers from the seven institutions, the other distributed to graduates from the seven institutions.
3. Case studies of the seven institutions.

As the second phase indicates, the project traced two cohorts of students: those who left the seven higher education institutions during or at the end of 2002 without achieving a qualification, and those

who left the institutions during or at the end of 2002 *with* a notional three- or four-year qualification. The first survey was administered to *all* non-completing students from the seven institutions, the second to *all* students who obtained one of the following six qualifications in 2002:

- a three-year undergraduate degree (e.g. BSc, BA);
- a four-year professional degree (e.g. BA Social Work, BSc Engineering);
- a one-year postgraduate certificate (e.g. Higher Diploma in Education);
- a one-year honours degree (following a bachelor's degree);
- a three-year National Diploma; or
- a four-year Baccalaureus Technologiae.

In the case study phase, each of the seven institutions was profiled according to the following categories:

Part 1: An institutional perspective

Section 1: Pathways into the institution

Section 2: Pathways through the institution

Part 2: An individual perspective: students who left the institution without achieving a qualification

Section 1: Personal profile of respondents

Section 2: Pathways into the institution

Section 3: Pathways through the institution

Section 4: Pathways from the institution

Part 3: An individual perspective: students who graduated from the institution

Section 1: Personal profile of respondents

Section 2: Pathways into the institution

Section 3: Pathways through the institution

Section 4: Pathways from the institution

As this design suggests, the case studies were framed around three temporal junctures: transition from school to higher education; passage through higher education; and transition from higher education to the labour market. A client report on the seven case studies (Letseka & Cosser 2009) is available from the Ford Foundation, co-funder of the project.

Response profile

In the Student Retention and Graduate Destination Study, questionnaires were sent to 34 548 students who at the end of 2002 had left the seven institutions included in the study. Of these, 14 195 had graduated and 20 353 had left prematurely. There was a 15% response rate (or 2 163 respondents) among the graduate cohort and 16% (or 3 328 respondents) among the non-completers. The realised sample makes analysis at lower levels of disaggregation difficult because of reduced cell sizes – a difficulty alluded to in Chapters 1 and 7 of the monograph.

Broadly, the implication of small cell sizes is that one cannot generalise with any confidence to the entire graduate and non-completer populations of the seven institutions. The authors of Chapters 1 and 7 draw the reader's attention to this limitation.

Organisation of the monograph

As indicated, the Student Retention and Graduate Destination project had its genesis in concerns expressed by the DoE about student success in higher education. The case studies of the seven

institutions included in the project (Letseka & Cosser 2009) provide clear indications, from first-hand observation, of the capacity of the various institutions to create a learning environment conducive to such success. But the case studies present evidence of student performance in a disparate way. To supplement and deepen the case studies, analyses that step back from individual cases to investigate key issues in the student retention–graduation–destination nexus affecting one, some or all of the institutions under investigation are required. This is the justification for this volume.

The monograph is organised around two central themes: student *access* – to higher education, to the labour market, and to employment; and student *success* – whether students drop out of higher education or stay in the institution and graduate. The shift between *access* and *success* does not, however, disrupt the temporal logic behind this organisation. The monograph – like the study from which it derives – follows students’ trajectory from school into higher education, through higher education, and into the labour market.

In Chapter 1, Michael Cosser sets the tone for the remaining chapters. He foregrounds the congruity of influences upon students’ aspirations and enrolments in the seven institutions included in the Student Retention and Graduate Destination Study, the significant differences between non-completer and graduate responses, the extent to which students from different institutions differ in certain critical ways in their responses, and the disjunction between higher education aspirations and preferences on the one hand and student enrolments on the other. He argues that the school-to-higher education transition is not a linear process, but that the various disjunctions between aspiration and actualisation reveal an inherent volatility in the youth-to-adulthood transition as young people move from one phase of school to the next and from school into and through the higher education system. The key reason for the failure to realise ambition, he contends, is the strong correlation between SES and choice in the South African context – the higher the SES of students, the greater their ability to exercise choice (of subjects at school, of higher education institution, and of higher education study field) and map out their career trajectories and destinies. Financial constraints and poor academic performance, in a mutually reinforcing way, preclude large percentages of students from studying at their institutions of first choice: they cannot do so because they cannot meet the admission requirements and, if they could, they would not be able to afford the fees.

From issues of access in Chapter 1, the focus shifts in Chapter 2 to a study of success – or, more accurately in this instance, of its antithesis. Some of the key factors contributing to students’ dropping out of higher education without obtaining a qualification were shown by the Student Retention and Graduate Destination Study to be lack of finance, academic failure, insufficient or no career guidance, personal and family deprivation, and institutional culture. Against this backdrop, Moeketsi Letseka, Mignonne Breier and Mariette Visser examine poor students’ struggles for access and success in the seven institutions included in the study. Tracing the poverty levels of students who drop out back to the apartheid policies of the previous regime and its key legacies – a Gini coefficient that makes South Africa one of the most unequal societies in the world and an education system that is dysfunctional for Africans – they show the effects of poverty as going beyond access to such basic needs as food, shelter and clothing to encompass perceptions of helplessness, vulnerability, voicelessness, social exclusion and abandonment by the authorities. Since impecuniousness manifests itself as the primary cause of student attrition, Letseka et al. investigate the capacity of the National Student Financial Aid Scheme to support – and ultimately to retain – financially needy but academically capable students within the higher education system.

The attention shifts from the seven institutions that are the focus of Chapter 2 to a historically advantaged institution in Chapter 3. Wits has had to counter imputations of racism and come to terms with the reality of racially skewed success rates (Mangu 2006; McKinney 2007). As Nongxa (2004)

observes, even those institutions (like Wits) which considered themselves to be at the forefront of transformation have to recognise either that their student profiles have barely changed or, if they have, that they now have racially delineated differences in their success rates. In this chapter, Gill Scott and Moeketsi Letseka explore the implications of transformation and the effects of institutional culture on student dropout at Wits. They show that while student enrolment patterns at the institution have been steadily changing since the late 1980s (in 2002/03, black students made up nearly two-thirds of the student body), the same cannot be said of the academic staff complement, which in 2002 was still predominantly (79%) white. The perceived overemphasis of lecturing staff on content and theoretical underpinnings at the expense of study skills – however patronising this might be in some quarters (though the chapter does not provide data in support of this possibility) – patently invokes feelings of exclusion among students from previously disadvantaged communities and promotes a sense that the academic culture in the institution is inherently alienating.

In Chapter 4, Mignon Breier confirms that the vicious cycle of financial disadvantage and academic underperformance which originated under apartheid continues to hold sway at UWC. Drawing on interviews with senior managers conducted as part of the case study of the institution, she notes the abject poverty – manifested in barely concealed physical hunger – which is the daily lot of a sizeable number of students at the institution, linking it to the low SES of respondents to the Student Retention and Graduate Destination surveys conducted earlier. Poverty, she shows – and not the individual cost-benefit analysis Tinto (1987, 1993) claims students undertake in deciding on whether to stay the distance – is the primary reason for student dropout; and precisely for this reason, many students do not so much drop out as ‘stop out’ in order to earn the money needed to finance their continued studies at the institution. A large proportion of non-completer respondents, Breier reveals, indicated that they had re-registered for further study since leaving in 2002, mostly for diplomas or certificates. This suggests that students ‘downscale’ their academic ambitions after dropping out – but whether for academic or financial reasons (the lower qualifications are obviously more quickly achievable) is not clear.

Breier’s telling comparisons between UWC and SU show the stark contrasts in SES between students of the two institutions. Trish Gibbon, in Chapter 5, tackles the uncomfortable tension between the success for which SU has increasingly become known – success based largely on the relative advantage of the predominantly white student body to whose SES Breier drew attention in Chapter 4 – and the conspicuous lack of diversity which has become the institution’s nemesis. In 2004, the former vice-chancellor of SU, Chris Brink, posed a critical question – ‘Whose place is Stellenbosch, anyway?’ (Brink 2004) – which opened up the cultural identity and ownership of the institution for debate. This debate centred around two axes: the university’s decision to award an honorary doctorate, posthumously, to Bram Fischer, a scion of Free State Afrikaner aristocracy but also a communist who had deliberately and publicly walked out of the ‘laager’ to join forces with the ‘*swart gevaar*’ (black threat) and the ‘*rooi gevaar*’ (red threat); and the distinction between the language Afrikaans, which crosses the boundaries of colour, culture and religion, and Afrikanerdom, the traditional preserve of white Afrikaners. If SU wanted, Brink (2004) argued, to be an agent for Afrikaans – a language spoken by far more black people than white – Stellenbosch could not afford to be viewed as the sole property of Afrikanerdom. Against this provocative backdrop, Gibbon explores the success–diversity tension, concluding that any compromise in the student demographic⁶ that saw meaningful increases in the enrolment of coloured students (African students would be unlikely to want to study at SU because of the institution’s language policy) would compromise the high academic standards of the university and lead to reduced financial stability.

6 Coloured students constitute the second largest group at undergraduate level, but in 2002 they constituted less than 14% of the first-year enrolment, while African students constituted only 3% of first-year enrolments in 2002.

In Chapter 6, Percy Moleke shifts the focus from student success back to access. She provides a broad analysis of the performance of the South African graduate labour market to answer the question: 'How has the graduate labour market performed?' She then narrows her focus, drawing on the employment and unemployment experiences of graduates in the Student Retention and Graduate Destination Study to show that, notwithstanding the generally positive graduate uptake in the labour market, high levels of unemployment are found among African graduates, whose absorption into the labour market occurs at a much slower pace than that of graduates of other race groups, especially whites.

In Chapter 7, Haroon Bhorat, Natasha Mayet and Mariette Visser provide an empirical overview of the Student Retention and Graduate Destination Study dataset and a descriptive analysis of selected variables of interest: race; gender; qualification completion status; institution; field of study; home language; entry points to institution; matriculation results in specific subjects; full- or part-time study status; location of school attended (urban versus rural); funding of higher education; employment, income and education levels of parents/guardians; and sibling graduate status. They go on to conduct a quantitative modelling of three observable outcomes of the datasets – graduation, employment and earnings – disaggregated by race, gender and field of study. These analyses reveal enduring but subtle forms of inequality and exclusion in South Africa's higher education and labour market. Finally, an analysis of the determinants of graduation, employment and earnings reveals that race continues to be a significant determinant in South Africa of the probability of outcomes such as graduation and employment, and remains the key variable in the study even when controlling for institution type and field of study. However, while individuals are selected into employment on the basis of a number of characteristics, race is not a significant variable once students are actually in the labour market. Counter-intuitively, Bhorat et al. show that while socio-economic variables are important in determining graduation and success in the labour market, they are not crucial: household income and attending a rural school were found to have a significant impact on the probability of graduating, but other variables such as parental education were insignificant in the graduation multivariate analysis. Indeed, individual were more important than household variables in determining labour market outcomes such as employment and earnings.

In the final chapter (the Afterword), Cosser provides a brief environmental scan of the higher education landscape mid-2009, showing how the seven chapters outlined above contribute to current debates and ministerial policy initiatives under way in the higher education sector.

A note on the data

As indicated in the methodology section of this chapter, the data for the surveys pertain to the 2002 cohort of graduates and non-completers: those who graduated at the end of 2002, and those who left during the course or at the end of 2002 without achieving a qualification. The surveys were conducted in 2004. The case studies were conducted in 2005 and written up in 2005/06. The first drafts of the chapters for this monograph were written in 2007. Clearly, then, there has been considerable slippage between the data year (2002), the case study year (2005/06), the chapter year (2007) and the present.

The Afterword is one mechanism for dealing with this slippage, attempting as it does to tie the monograph chapters to current developments in the higher education sector. But on another level, the monograph needs no such unification: as it stands, it provides a snapshot of student access and success at one juncture in the unfolding higher education story. And as the Afterword shows, access and success and their interplay are perennial themes in this story, particularly in the light of the enduring legacy of apartheid with which the country as a whole has now to deal.

References

- Breier M & Mabizela M (2007) Higher education. In A Kraak & K Press (eds) *Human resources development review 2008: Education, employment and skills in South Africa*. Cape Town: HSRC Press
- Brink C (2004) Stellenbosch University: Whose place is it? *Izwi: Voice of HE Leadership* 2: 6–8
- Cloete N & Bunting I (2000) *Higher education transformation: Assessing performance in South Africa*. Pretoria: Centre for Higher Education Transformation
- DEEWR (Department of Education, Employment and Workplace Relations) (2002) *Higher education attrition rates 1994–2002: A brief overview*. Canberra: DEEWR
- DoE (Department of Education) (2001a) *National plan for higher education*. Pretoria: Department of Education
- DoE (2001b) *Education statistics in South Africa at a glance*. Pretoria: Department of Education
- DoE (2002) *Education statistics in South Africa at a glance*. Pretoria: Department of Education
- DoE (2003) *Education statistics in South Africa at a glance*. Pretoria: Department of Education
- DoE (2004a) *Statement on higher education funding: 2004/5 to 2006/7*. Pretoria: Department of Education
- DoE (2004b) *Education statistics in South Africa at a glance*. Pretoria: Department of Education
- DoE (2005) *Student enrolment planning in public higher education*. Pretoria: Department of Education
- Grimston J (2008) Nearly a quarter of students do not finish their university courses. What is going wrong? *Timesonline* 24 February. Available at <http://www.timesonline.co.uk/tol/news/uk/education/article3423483.ece>. Accessed on 30 June 2009
- House of Commons Public Accounts Committee (2009) *Widening participation in higher education. Fourth report of session 2008–09*. London: The Stationery Office
- Letseka M & Cosser M (2009) *Pathways through higher education to the labour market: Student retention, graduation and destination*. HSRC client report for the Ford Foundation. Pretoria: Human Sciences Research Council
- Mangu X (2006) Reflections on the revolution of our times. Public lecture in collaboration with the Public Intellectual Life Research Project, University of the Witwatersrand, Johannesburg. 11 October
- McKinney C (2007) Caught between the ‘old’ and the ‘new’? Talking about ‘race’ in a post-apartheid university classroom. *Race, Ethnicity and Education* 10(2): 215–231
- Moll I (2004) Curriculum responsiveness: The anatomy of a concept. In H Griesel (ed.) *Curriculum responsiveness: Case studies in higher education*. Pretoria: South African Universities Vice-Chancellors’ Association
- National Center for Education Statistics (2007) Integrated Postsecondary Education Data System (IPEDS), Spring 2007, Graduation Rates component. Washington, DC: US Department of Education
- Nongxa L (2004) Institutional autonomy and academic freedom. *Izwi: Voice of HE Leadership* 3: 1–3
- Nyamapfene K & Letseka M (1995) Problems of learning among first year students in South African universities. *South African Journal of Higher Education* 9(1): 159–167
- Slonimsky L & Shalem Y (2006) Pedagogic responsiveness for academic depth. *Journal of Education* 40: 35–58
- Subotzky G (2003) Public higher education and training. In Human Sciences Research Council (ed.) *Human resources development review 2003: Education, employment and skills in South Africa*. Cape Town & East Lansing: HSRC Press & Michigan State University Press
- Tinto V (1987) *Leaving college: Rethinking the causes and cures of student attrition*. Chicago & London: The University of Chicago Press
- Tinto V (1993) *Leaving college: Rethinking the causes and cures of student attrition* (second edition). Chicago & London: The University of Chicago Press

CHAPTER 1

Uniformity and disjunction in the school-to-higher-education transition

Michael Cosser

Introduction

At every stage of their progression from school into, through and out of higher education, students make choices to go down particular roads and/or they have their pathways determined for them by a variety of factors: gender, physical ability, race, family background (parental/guardian education, employment situation and income) and schooling (location, quality of teaching, and so forth). In reality, all students' pathways are shaped by a combination of choices and constraints. Previous research (Cosser with du Toit 2002; Cosser with du Toit & Visser 2004), however, has shown that there is a strong correlation between high SES and choice in the South African context – the higher the SES of students, the greater their ability to exercise choice and therefore to map out their own destinies. This finding suggests that, for many, student 'choice' is often a misnomer.

Along the road of choice or constraint, the branching points (Boudon 1974) with which learners are confronted are regular features of the journey: as Grade 12 learners 'choose' to study further beyond school; as they 'choose' higher education over other further learning options (private further education and training [FET] institutions; FET Colleges);⁷ as they 'choose' one study programme over another; as they progress from one year of higher education study to the next; as they apply for jobs either in or outside their fields of study; and so forth. The school-to-higher-education transition, as this interweaving of choice and constraint, of aspiration and actualisation suggests, is hardly the linear process we often make it out to be, with a series of single-track choices: proceeding to higher education, studying in a particular field, and completing a study programme within a set number of years. Students plan to proceed to higher education and are thwarted by their academic performance in Grade 12; they plan to study in one field and then find they are constrained from enrolling in their first-choice programmes by their performance at school or by the availability of places for study; they change study direction midstream; their financial situations change and they are forced to drop out of higher education. There are frequently disjunctions between aspiration and actualisation.

This chapter focuses on learner *aspirations* for higher education and on student *enrolments* within higher education, juxtaposing the two to show the inherent volatility of the youth-to-adulthood transition as young people move from one phase of school to the next and from school into and through the higher education system. The progression of students from all seven institutions involved in the Student Retention and Graduate Destination Study forms the subject of the investigation.

7 That learners would choose to enter study programmes at the same level at, or even at lower levels than, National Qualifications Framework level 4 may seem illogical; but the fact that learners do so – a 2002 study showed that 81% of learners who achieved an N2, N3 or National Senior Certificate at a technical college had already achieved a Grade 12 certificate (Cosser 2003) – indicates that the practice is not uncommon.

The common formats and, in most instances, questions deployed in the Student Retention and Graduate Destination questionnaires allow a conception of student pathways that does not distinguish in any strongly contrasting way between retention and graduation: graduates are students who have been retained long enough within the higher education system to complete their qualifications, and are therefore merely further along the continuum than their non-completing counterparts. The analysis that follows therefore juxtaposes the responses of non-completers and graduates.

The analysis of the findings dealing with aspiration and enrolment is presented in this chapter against the backdrop of the findings of other HSRC studies into student choice behaviour conducted over a seven-year period (2001–07).

Findings from the Student Retention and Graduate Destination Study

The Student Retention and Graduate Destination Study follows the trajectories of students from seven institutions, from their selection of subjects in Grade 9 for the Senior Certificate Examination, through the senior phase of their schooling, into higher education, through higher education, and into the labour market. The survey instrument makes this tracking process explicit: the section headings move from 'Passage through school' to 'Transition from school to higher education' to 'Passage through higher education' to 'Transition from higher education to the labor market'. Though the following analysis is located within this framework, the focus is on the transition from school to higher education – the passage through the senior phase of school constituting the first phase of that transition.

Passage through school

Choice of subjects for the FET phase

Table 1.1 shows whether students chose, or were steered into taking, their subjects for the FET phase of their schooling.

At the aggregate level, there is no difference between non-completers and graduates: two-thirds of both sets of students *chose* their subjects for the FET phase of schooling rather than had their subject choices foisted upon them. At a disaggregated level, however, SU and Wits stand out as having higher percentages of non-completers who chose their subjects than do the other institutions. This profile is consistent with the SES of students at these institutions: while half of SU and Wits non-completing students (53% and 50% respectively) came from a low socio-economic background and 25% in each

TABLE 1.1 *Students' means of selection of subjects for their FET phase of schooling (%)*

Subject selection	UFH		UNorth		Pentech		PtaTech		SU		UWC		Wits		Total	
	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G
Chose	63	58	67	74	67	72	64	60	78	87	66	57	78	75	67	68
Steered	37	42	33	26	33	28	36	40	22	13	34	43	22	25	33	32

Source: Unless otherwise indicated, the data in all tables in this chapter are derived from HSRC (2005)

Note: UFH = University of Fort Hare; UNorth = University of the North; Pentech = Peninsula Technikon; PtaTech = Pretoria Technikon; SU = Stellenbosch University; UWC = University of the Western Cape; Wits = University of the Witwatersrand; NC = non-completers; G = graduates

TABLE 1.2 *Socio-economic status of non-completers and graduates of the seven institutions (%)*

SES	UFH		UNorth		Pentech		PtaTech		SU		UWC		Wits		Total	
	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G
Low	82	66	82	61	74	72	66	65	53	19	79	75	50	40	70	56
Middle	12	28	12	21	18	19	21	19	22	32	15	16	25	28	18	23
High	6	6	6	18	8	9	13	16	25	49	6	9	25	32	12	21
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

were of a high SES, considerably more students from the other institutions came from low socio-economic backgrounds (Table 1.2).⁸

The institution with the next highest percentage of low SES students is PtaTech (66%), followed by Pentech (74%), UWC (79%), and UFH and UNorth (both 82%).

The graduate profile shows that 87% of SU students *chose* their subjects. Once again this is consistent with the SES of students at this institution: fewer than a fifth of SU graduates came from a low socio-economic background (compared with 75% of students of a low SES from UWC), while nearly half (49%) of SU graduates came from a high socio-economic background. There appears, then, to be a high degree of correlation between SES and subject choice at school, even among graduates. On closer inspection, however, this statement is negated by the high percentage of subject choosers (74% and 72%) at UNorth and Pentech respectively – institutions with relatively high percentages of graduates of low SES (61% and 72% respectively). We can conclude from these analyses that subject choice at school is more highly correlated with SES among non-completers than among graduates of the seven institutions.

However, the fact that two-thirds of non-completers and graduates *chose* their subjects for the FET phase of schooling masks some large differences between the two groups within institutions. The percentages of UFH, PtaTech and UWC non-completers who chose their subjects are far higher than the percentages of graduates of these institutions who chose their subjects, while the percentages of UNorth and SU graduates who chose their subjects are far higher than the percentages of non-completers of these institutions who did so. There is no discernible pattern here; a detailed analysis of the schools that students attended – beyond the scope of this investigation – might hold some explanatory power.

An analysis of the variables influencing respondents who chose their subjects in Grade 9 reveals the following:

- Only six of fifteen variables presented to students as possibly having influenced their subject choices did in fact exert a positive influence on their subject choices in Grade 9. In order of significance (by average of the non-completer and graduate totals for each variable), these are:
 - interest in the subjects themselves (average 4.2);
 - good performance in these subjects in previous standards/grades (average 4.1);
 - opportunities of eventually finding a job (average 3.9);
 - interest in the particular combination of subjects (average 3.8);

8 See Chapter 2 for an explanation of the formula for determining SES.

TABLE 1.3 *Students who had a specific career in mind when they chose their subjects for matriculation (%)*

Specific career in mind	UFH		UNorth		Pentech		PtaTech		SU		UWC		Wits		Total	
	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G
Yes	87	79	81	82	75	74	76	72	63	43	74	61	67	52	76	64

- ability to follow a practical course of study (average 3.6); and
- ability to follow a theoretical course of study (average 3.4).
- There is a strong degree of uniformity of response across the seven institutions. In other words, those who *chose* their subjects concur, for the most part, regarding the influences upon subject choices. The exception is ‘Good performance in these subjects in previous standards/grades’ – on which variable UFH and UNorth students (non-completers and graduates alike) were more strongly influenced than were students of the other institutions. This finding is consistent, in the case of non-completers, with the higher percentage of low SES students at these two institutions.
- There is a remarkable degree of uniformity of response between non-completers and graduates. With regard to two variables, however – ‘Opportunities of eventually finding a job’ and ‘Ability to follow a practical course of study’ – non-completers were more strongly influenced than were graduates in all institutions except UNorth. Such a finding, however, is probably attributable to the very non-completion status of this group, for whom finding a job and deployment of practical skills may well have been superimposed, in non-completers’ reflection upon their current (2002) status, upon their subject choice in Grade 9.

Among those students who chose their subjects for the FET phase of schooling at the end of their Grade 9 year, 76% of non-completers and 64% of graduates had a specific career in mind when they did so (Table 1.3).

Counter-intuitively – and ironically – those who did not complete their higher education were more career-oriented when choosing their FET subjects in Grade 9 than were those who eventually graduated. However, this is not the case at UNorth, where there is no difference between non-completers and graduates. A correlation with SES, moreover, shows that in the case of institutions with a higher percentage of low SES students (UFH, UNorth, Pentech, UWC and PtaTech), far higher percentages of non-completers had a specific career in mind when choosing their FET subjects than did those at the two institutions with far lower percentages of low SES students (SU and Wits). This finding merely reinforces the counter-intuitiveness of the non-completer–graduate differentiation.

Among those students who were *steered* into subject selection in Grade 9 (Table 1.4), the highest percentage at the aggregate level (an average of 46% across the non-completer and graduate categories) were constrained by whether their schools actually offered the subjects they would have wanted to choose, followed by students’ marks in those subjects (average 30%) and the availability of qualified teachers in particular subjects. This problem was less pronounced for UNorth students than for students at the other six institutions.

There are no significant differences between non-completers and graduates in terms of the effect of the listed variables upon their subject choice constraints. Only at UNorth was there a notable difference – graduates having been less influenced than non-completers by the availability of qualified teachers in particular subjects.

TABLE 1.4 Variables determining steering of students into subject selection for FET phase of schooling (%)

Variable determining subject selection	UFH		UNorth		Pentech		PtaTech		SU		UWC		Wits		Total	
	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G	NC	G
My marks in these subjects	33	27	33	41	32	29	30	28	30	30	34	32	33	30	31	29
The subjects that were offered by the school	48	52	39	38	47	47	47	49	45	42	44	49	42	42	45	47
The availability of qualified teachers in particular subjects	14	13	18	11	11	8	14	13	14	9	12	11	13	13	14	12
Other	5	8	10	10	10	16	9	10	11	19	10	8	12	15	9	12
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Transition from school to higher education

Variables influencing the decision to proceed to higher education

Only three of the fifteen listed variables presented as possible factors influencing students to enrol in a higher education institution had any influence on them: 'An interest in studying in a particular field' (average score of 4.3 across non-completers and graduates); 'Needing to go to university or technikon to improve your chances of getting a job' (average score of 4.3); and 'University or technikon education enabling you to earn more money one day' (average score of 4.0). These findings are entirely consistent with those from a 2001 HSRC study of Grade 12 learners (Cosser with du Toit 2002). That study found that the same three variables had influenced learners to want to proceed to higher education. In the present study, however, interest in studying in a particular field is of the same importance as enhancing employability, whereas in the 2001 study, enhancing employability was relatively far more significant an influence than intrinsic interest in a field of study.

Higher education institution of choice

An analysis of students' first choice of higher education institution, when they were still contemplating proceeding to higher education, reveals that the five institutions to which the highest percentages of students across the seven institutions that are the subject of the present study wanted to go were, in rank order, Wits – 11.3% (average across non-completers and graduates); the University of Cape Town (UCT) and PtaTech – both 10.5%; SU – 9.3%; and the University of Pretoria (UP) – 8%.

If we disaggregate these data by graduate and non-completer preferences we see that, among graduates, the top five choices were SU (14%), Wits (13%), UCT (11%), PtaTech (10%) and UP (7.8%). Among non-completers, the top five choices were PtaTech (11%), UCT (10%), Wits (9.5%), UP (8.1%) and the Medical University of South Africa (7.5%). The two Gauteng-based institutions included in the study – Wits and PtaTech – are, together with UP and UCT, among the top five first-choice institutions of respondents to the study.

TABLE 1.5 *Translation of institutional preference into enrolment*

Institution	First choice of institution		Actual enrolments by institution in 2002			
	NC	G	NC		G	
	N	N	N	Enrolment rate	N	Enrolment rate
University of Fort Hare	101	29	319	3.2	85	2.9
University of the North	75	26	604	8.1	101	3.9
Peninsula Technikon	50	56	255	5.1	281	5.0
Technikon Pretoria	212	120	1 447	6.8	832	6.9
Stellenbosch University	88	158	176	2.0	338	2.1
University of the Western Cape	86	58	257	3.0	246	4.2
University of the Witwatersrand	186	150	270	1.5	280	1.9
Total	798	597	3 328	4.2	2 163	3.6

Note: The enrolment rate here is the number of students enrolled in an institution divided by the number of students who wanted to enrol in that institution.

There are, however, differences between non-completers' and graduates' first choice of institution. The differences are small in the case of five institutions – UWC (1%), PtaTech and UFH (both 2%), UNorth (3.4%) and Pentech (8%) – but rather larger in the case of Wits (14%) and SU (23%). Slightly higher percentages of non-completers than of graduates wanted to study at UFH and UNorth, while far lower percentages of non-completers than of graduates wanted to study at Wits and SU.

The extent to which institutional preferences were realised in enrolments in the same institutions is difficult to calculate, given the inordinately high percentages of students who either failed to respond or did not indicate their first choice of institution for higher education study: 41.4% of non-completers and 46.6% of graduates did not indicate their first choice of institution. The other difficulty presented by this calculation is that this low response rate translates into cell sizes which in eight cases in Table 1.5 are below 100, which renders percentage calculations inaccurate. The profile in Table 1.5 should be taken, then, as indicative only.

From Table 1.5 we see, at the aggregate level (across the seven institutions), that just over four times as many students enrolled in the seven institutions as had wanted to do so. Among non-completers, the largest differential is at UNorth, where eight times as many students enrolled as had wanted to enrol, the smallest at Wits, where one-and-a-half times as many students enrolled as had wanted to do so. Among graduates, the largest differential is at PtaTech, where nearly seven times as many students enrolled as had wanted to, the smallest again at Wits, where nearly twice as many students enrolled as had wanted to. The smallest differentials are at Wits and SU. The largest differential between non-completers and graduates is at UNorth (a difference of 4.2); the differentials in the case of the other institutions are small.

Presented with a list of three possible reasons why they did not study at the institution of their choice, 47.6% of non-completers and 43.7% of graduates said it was too expensive, 40.7% of non-completers and 41.8% of graduates said they could not meet the admission requirements, and 11.7% of non-completers

and 14.5% of graduates said the institution did not offer the programme of study they wanted to pursue. Financial constraints and poor academic performance thus precluded large percentages of students, as the above analysis has shown, from studying at their institutions of choice.

Notwithstanding the large percentage of respondents who did not indicate their first choice of institution, we are still in a position to assess the extent to which a range of variables influenced the preferences of those who did so. The only two variables that had any significant influence on students' first choice of institution are the reputation of the institution (average score of 4.3) and the reputation of the school/faculty/department in which the student wanted to study (4.0). These findings are consistent with the 2001 survey findings (Cosser with du Toit 2002), as well as with the findings of a similar aspiration survey conducted in 2005 (Cosser 2009a), where the top two influences are identical.

The reputation of the institution is most influential for Wits non-completers (4.6) and graduates (4.5) – and significantly above the average scores across the seven institutions (4.3 for both non-completers and graduates). The profile for the reputation of the school/faculty/department is much flatter across the seven institutions. There is very little difference between non-completers and graduates in terms of their assignment of scores to the different influences.

Choice of study programme

An analysis of students' first choice of programme for higher education study when they were still at school reveals the following. Across all seven institutions, the five most preferred programmes among non-completers were, in order of preference, Business/Commerce, Computer Science, Health Sciences, Engineering and Law. Among graduates, the five most preferred programmes were Health Sciences, Business/Commerce, Engineering, Computer Science and Education. This juxtaposition shows that four of the top five preferences are shared by non-completers and graduates, though the order differs. If we combine students' individual programme preferences into fields of study and compare these with actual enrolments in 2002, the picture in Table 1.6 emerges.

For ease of interpretation, the differentials between field of study preferences in Grade 12 and enrolments in 2002 are outlined in Table 1.7.

From Tables 1.6 and 1.7 we see that:

- The profiles are similar for non-completers and graduates: a considerably lower percentage of students enrolled in Science, Engineering and Technology (SET) than wanted to do so; the Business/Commerce profile is flat; about 10% more students enrolled in Education than had planned to do so; and between 10% and 16% more students enrolled in the Humanities than had wanted to do so.
- Though the broad pattern of a decrease in Science enrolments in relation to preferences for study in this field and an increase in Humanities enrolments in relation to preferences for study in this field holds for both non-completers and graduates, the extent of difference is noteworthy. At the aggregate level, we see that the differential between preference for and enrolment in the Sciences is higher among non-completers than among graduates (24.5% versus 19.8%) and, concomitantly, that the differential between preference for and enrolment in the Humanities is higher among non-completers than among graduates (15.5% versus 9.5%). In other words, there is a closer correlation between preference and enrolment among graduates than among non-completers – higher percentages of graduates than of non-completers end up studying in their fields of choice.

Ranking the institutions in terms of the SET–Humanities differentials allows us to simplify the interpretation even more (Table 1.8).

TABLE 1.6 *Field of study preferences in Grade 12 and enrolments in 2002, non-completers and graduates*

Field of study	Institution																							
	UFH			UNorth			Pentech			PraTech			SU			UWC			Wits			Total		
Non-completers	P	E		P	E		P	E		P	E		P	E		P	E		P	E		P	E	
Science, engineering & technology	40.3	15.5		55.2	33.5		61.7	44.3		50.7	23.8		45.5	27.9		37.6	9.9		64.9	49.4		52.2	27.7	
Business/commerce	16.0	6.1		19.0	11.4		23.0	39.6		22.0	26.8		28.0	14.3		15.0	4.3		17.0	4.4		20.0	19.1	
Education	4.2	8.1		3.0	13.7		2.6	3.1		9.0	21.9		8.8	28.6		4.0	5.7		2.8	9.2		5.9	15.8	
Humanities	39.2	70.3		22.8	41.4		12.1	12.9		17.6	27.5		17.9	29.2		42.5	80.0		15.6	37.0		21.9	37.4	
Total	100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0	
Graduates																								
Science, engineering & technology	36.8	19.3		66.8	50.5		57.2	41.6		48.0	24.3		51.1	37.2		47.1	17.2		52.8	40.6		50.8	31.0	
Business/commerce	14.0	12.0		20.0	18.6		24.0	31.3		17.0	21.0		18.0	7.3		11	9.8		14.0	8.8		17.0	17.2	
Education	6.8	6.0		0.0	3.1		2.7	4.3		12.0	22.8		3.0	7.6		8.2	34.9		9.0	20.3		7.6	17.3	
Humanities	43.4	62.7		13.1	27.8		16.6	22.8		23.4	31.9		28.5	47.9		33.4	38.1		24.2	30.3		25.0	34.5	
Total	100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0	

Note: P = preference in Grade 12, E = enrolment in 2002

TABLE 1.7 *Differentials between field of study preferences in Grade 12 and enrolments in 2002, non-completers and graduates*

Field of study	Institution							
Non-completers	UFH	UNorth	Pentech	PtaTech	SU	UWC	Wits	Total
Science, engineering & technology	-24.8	-21.7	-17.4	-26.9	-17.6	-27.7	-15.5	-24.5
Business/commerce	-9.9	-7.6	+16.6	+4.8	-13.5	-10.7	-12.6	-0.9
Education	+3.9	+10.7	+0.5	+12.9	+19.8	+1.7	+6.4	+9.9
Humanities	+31.1	+18.6	+0.8	+9.9	+11.3	+37.5	+21.4	+15.5
Graduates								
Science, engineering & technology	-17.5	-16.3	-15.6	-23.7	-13.9	-29.9	-12.2	-19.8
Business/commerce	-2.0	-1.4	+7.3	+4.0	-10.7	-1.2	-5.2	+0.2
Education	-0.8	+3.1	+1.6	+10.8	+4.6	+26.7	+11.3	+9.7
Humanities	+19.3	+14.7	+6.2	+8.5	+19.4	+4.7	+6.1	+9.5

TABLE 1.8 *Ranking of institutions by SET and Humanities differentials between field of study preferences in Grade 12 and enrolments in 2002*

Field of study	Institution						
Non-completers	UFH	UNorth	Pentech	PtaTech	SU	UWC	Wits
Science, engineering & technology	3	4	6	2	5	1	7
Humanities	2	4	7	6	5	1	3
Graduates							
Science, engineering & technology	3	4	5	2	6	1	7
Humanities	2	3	5	4	1	7	6
Total for non-completers & graduates	10	15	23	14	17	10	23

Notes: 1 = lowest differential, 7 = highest differential

Table 1.8 ranks the seven institutions according to the extent of their students' shift from SET to the Humanities between preference and enrolment – the higher the total in the last row, the less the shift. According to this method, the ranking of the institutions, at the aggregate level of non-completers and graduates, is Pentech and Wits, SU, UNorth, PtaTech, UFH and UWC. Among non-completers, the ranking is Pentech, SU and Wits, UNorth and PtaTech, UFH, and UWC. And among graduates, the ranking is Wits, Pentech, UWC, UNorth and SU, PtaTech, and UFH. The three institutions displaying the lowest differences between preferences for and enrolments in SET and Humanities, then, are Pentech, Wits and SU.

An analysis of the 14 variables presented as having exerted a possible influence on students' first choice of programme for higher education study shows that five of the variables actually influenced programme preference. In rank order, these are:

- 'interest in this field of study' (average score across non-completers and graduates = 4.4);
- 'opportunities of finding a job in South Africa after qualifying in this field' (4.1);
- 'ability to use a qualification in this field to contribute towards the development of the country and its people' (4.1);
- 'ability to follow a practical course of study' (3.6); and
- 'the reputation of the school/faculty/department in which you wanted to study' (3.4).

The first three variables influencing respondents to the 2001 and 2005 aspiration studies (Cosser 2009a; Cosser with du Toit 2002) are identical, indicating a high degree of reliability in the survey findings over time.

There are, however, some significant differences between the institutions. For UFH and UNorth non-completers and graduates alike, the ability to use a qualification in the chosen field to contribute towards development is far more influential than for students of other institutions. This stands in marked contrast to the significantly lower influence of this variable for SU non-completers and graduates. Similarly, 'Opportunities of finding a job in South Africa' exerts significantly less influence on SU students than on students at other institutions.

There are also some marked differences between non-completers and graduates within institutions. 'Opportunities of finding a job in South Africa' is significantly more of an influence for non-completers than for graduates at UFH, while the ability to use a qualification in the chosen field to contribute towards development is significantly less influential for SU graduates than for SU non-completers. Similarly, 'Ability to follow a practical course of study' is significantly more influential for non-completers than for graduates at UFH and at Pentech.

Observations arising from the analysis

Four main observations can be drawn from the preceding analysis. The first is the remarkable congruity of influences upon students across institutions. The second is that there are some significant differences between non-completer and graduate responses. The third is that students from different institutions differ in certain ways in their responses. And the fourth concerns the disjunction between higher education aspirations and preferences on the one hand and student enrolments on the other. Each of these is elaborated upon in turn.

Congruity of influences on student choice behaviour

At the aggregate level, we have seen from the foregoing analysis that students, regardless of socio-economic background or higher education institution, have been very similarly influenced in the following areas: choosing their subjects for the FET phase of schooling or being steered into subject selection; choosing to proceed to higher education; their first choice of institution; and their first choice of programme of study for higher education. This consistency is itself congruous with choice behaviour in the other HSRC studies of student aspiration outlined earlier in the chapter.

The passive construction of the above formulation (students *have been very similarly influenced*) is deliberate: many of the variables cited as having exerted a possible influence on student behaviour

are, despite their supposedly volitional nature, in fact constraining. Thus, for example, the influence of needing to proceed to higher education to enhance employability might seem to invite a positive or a negative response; and indeed, in an economy where a higher education is not necessarily a passport to a job – for example, in the context of a strong vocational education system (as in Germany) – such open-endedness might be acceptable. But in the context of the high unemployment rate in South Africa and family pressure for income generation, there can only be one response: higher education enhancing employability is a significant influence on student decision-making across the board.

Differences between non-completer and graduate responses

Alongside congruity of response on the question of influences on student behaviour are some striking differences between non-completers and graduates. The very fact that graduates are completers is, of course, the key difference between the two groups as conceptualised in this study. But apart from this, we have seen significant differences between the two groups:

- The percentages of UFH, UNorth, SU and UWC non-completers who chose their subjects for the FET phase of schooling differ markedly from the percentages of graduates who did so.
- Non-completers were far more influenced than were graduates in contemplating their choice of matriculation subjects by the notion of opportunities of finding a job with a higher education qualification and by the ability to follow a practical course of study.
- Far higher percentages of UFH, SU, UWC and Wits non-completers than graduates had a specific career in mind when they chose their subjects for matriculation.
- UFH non-completers were far more strongly influenced than were UFH graduates in their first choice of programme for higher education study by the notion of opportunities of finding a job in South Africa with a qualification in the field and by ability to follow a practical course of study; Pentech non-completers were similarly more strongly influenced than were Pentech graduates by the latter possibility; and SU non-completers were significantly more influenced than were SU graduates by the notion of using a qualification in the field to contribute towards development.
- Higher percentages of graduates than of non-completers ended up studying in their fields of choice.

Institutional differences

Besides differences in response between non-completers and graduates, there are also some significant institutional differences.

With regard to subject selection for the FET phase of schooling, higher percentages of non-completers from Wits and SU than from other institutions chose rather than were steered into their subjects, UFH and UNorth students were more strongly influenced than were students at other institutions by their academic performance in previous grades, and far higher percentages of non-completers at institutions with a higher percentage of low SES students (UFH, UNorth, Pentech, UWC and PtaTech) had a specific career in mind when choosing their FET subjects than did those at the two institutions with far lower percentages of low SES students (SU and Wits). SES would seem to account for all these institutional differences.

The smallest differentials between preference for enrolment in an institution and actual enrolment in that institution occurred at Wits and SU. Expressed differently, there is a higher translation of institutional preference into enrolment at SU and Wits than in the case of other institutions; that these two institutions had the highest proportion of high SES students at the time of the survey in 2002 may account for this result. Why 'the reputation of the institution' should be more influential a variable for Wits students than for students at other institutions, however, is not so easily explainable.

From a field of study perspective, we have seen that the three institutions displaying the lowest differences between preferences for and enrolments in the Sciences and Humanities are Pentech, Wits and SU. We might account for the SU and Wits differentials by arguing that the superior schooling that is synchronous with high SES provides for above average academic performance and better career guidance in the form of information about higher education programmes; but the inclusion of Pentech in this group is, on these grounds, anomalous.

Ability to use a qualification in the chosen field to contribute towards development exerts a far stronger influence on students at UFH and UNorth (non-completers and graduates alike) than on students at other institutions, and a far weaker influence on students at SU. This finding resonates with that of the 2001 and 2005 aspiration studies described earlier (Cosser 2009a; Cosser with du Toit 2002), which found that African students, the predominant group at UFH and UNorth, are far more development-oriented than are their counterparts of other race groups. By extension, the significantly lower influence of this variable on SU non-completers and graduates is also a function of race. That 'Opportunities of finding a job in South Africa' exerts significantly less influence on SU students than on students at other institutions suggests that SU students are more confident of the employment opportunities open to them.

Differences between aspirant and actual students

The most significant differences in the study are not between non-completers and graduates or between and among respondents of the seven institutions, but between learner aspirations and student enrolments.

From an institutional choice perspective, while the statistics in Table 1.5 should, as indicated in the subsequent analysis, be treated with some caution – given the high percentages of respondents who did not indicate their choices of institution – it remains remarkable that, at the aggregate level, four times as many students enrolled in the seven institutions as had wanted to when they were still at school. At face value, this suggests a large degree of uncertainty, if not ignorance, about the higher education landscape at the pre-enrolment stage.

From a programme preference perspective, the finding that a considerably lower percentage of students enrolled in SET programmes than had wanted to do so, while larger percentages of students enrolled in Education and Humanities programmes than had wanted to do so, resonates with research conducted in 2001 and 2002 (Cosser 2009b), which shows that there is a major shift from the Sciences to the Humanities in the transition from programme preference in Grade 12 through enrolment in the first year of higher education to graduation. Without interventions to counteract such a shift, the Ministry of Education's target ratio of 40% Humanities to 30% Business and Commerce to 30% SET enrolments in the higher education system by 2011 (DoE 2001) – revised in 2006 to a ratio of 37%:33%:30% to be achieved by 2010 (DoE 2007) – will be difficult to attain.

References

- Boudon R (1974) *Education, opportunity and social inequality*. New York: John Wiley
- Cosser M (2003) Graduate tracer study. In M Cosser, S McGrath, A Badroodien & B Maja (eds) *Technical college responsiveness: Learner destinations and labour market environments in South Africa*. Cape Town: HSRC Press
- Cosser M (2009a) *Studying ambitions: Pathways from Grade 12 and the factors that shape them*. Cape Town: HSRC Press
- Cosser M (2009b) The skills cline: Higher education and the supply-demand complex in South Africa. *Higher Education*. 6 May 2009. Available at <http://www.springerlink.com/content/lv0524l6145833t2/>

- Cosser M with du Toit J (2002) *From school to higher education? Factors affecting the choices of Grade 12 learners*. Cape Town: HSRC Press
- Cosser M with du Toit J & Visser M (2004) *Settling for less: Student aspirations and higher education realities*. Cape Town: HSRC Press
- DoE (Department of Education) (2001) *National plan for higher education*. Pretoria: Department of Education
- DoE (2007) *Ministerial statement on student enrolment planning*. Pretoria: Department of Education
- HSRC (Human Sciences Research Council) (2005) *Data-set for the Student Retention and Graduate Destination Study*. Pretoria: Human Sciences Research Council

CHAPTER 2

Poverty, race and student achievement in seven higher education institutions

Moeketsi Letseka, Mignonne Breier and Mariette Visser

Introduction

With a Gini coefficient of 0.72 (Stats SA 2008), South Africa is one of the most unequal societies in the world.⁹ This inequality continues to reflect the patterns of disadvantage under apartheid, with Africans, in general, continuing to be the poorest in the country, followed closely by coloureds.¹⁰ Furthermore, although much has been done since 1994 to improve the state of black education, the decades of discriminatory provision under apartheid continue to haunt the education system, affecting the chances and success of black, particularly poor, students.

This chapter discusses the extent and effects of these legacies and their manifestations in the HSRC Student Retention and Graduate Destination Study.

South Africa: Two nations

With its vast disparities in wealth, South Africa has been described as a country of two nations. Mamdani (1999) has said that the South African reality can be summed up by two contradictory facts. On the one hand, South Africa is possibly the most highly developed economy on the continent; on the other, this development is harshly limited and distorted by a colonial context. If white South Africa were to be a country on its own, its per capita income would be 24th in the world, next to Spain. But if black South Africa were to be a separate country, its per capita income would rank 123rd globally, just above the Democratic Republic of the Congo. Mamdani's (1999) contention is that the two nations in South Africa live in two different political worlds, separated by a Chinese wall, which divides the world of the settler from the world of the native.

The 'two nations' thesis was originally coined by Sir Benjamin Disraeli in his treatment of inequalities and injustices between rich and poor in England in his 1845 novel *Sybil, or The Two Nations* (Disraeli

9 The Gini coefficient is a calculation that is used to indicate income equality in society. It can vary from 0, which would indicate perfect equality, where everyone has the same income, to 1, which indicates perfect inequality, with one household having all the income and the rest none. In its 2005/06 analysis of the income and expenditure of households, Statistics South Africa (Stats SA 2008) reported that the Gini coefficient based on disposable income (from work and social grants) for the whole country was 0.72. If social grants and taxes are excluded, the Gini coefficient for the whole country would be 0.8 rather than 0.72. By way of comparison, the United States had a Gini coefficient of 0.45 in 2007 (CIA 2009).

10 It must be noted that there is also a growing African elite and large disparities of wealth within this population group. According to Statistics South Africa (Stats SA 2008), Africans now have the highest Gini coefficient (0.63). The Gini coefficients of the other population groups range from 0.56 to 0.59.

1980). Recently it was popularly attributed to Mbeki's (1998) analysis of the split which continues to characterise South African society long after the transition to democracy. On the one hand, there is opulence and opportunity; on the other, gross underdevelopment, poverty, unemployment and homelessness. Mbeki wrote:

South Africa is a country of two nations. One of these nations is white, relatively prosperous, regardless of gender or geographic dispersal. It has ready access to a developed economy, physical, educational, communication and other infrastructure. This enables it to argue that, except for the persistence of gender discrimination against women, all members of this nation have the possibility to exercise their right to equal opportunity, the development opportunities to which the constitution of 1993 committed our country.

The second and larger nation of South Africa is black and poor, with the worst affected being women in the rural areas, the black rural population in general and the disabled. It lives under conditions of a grossly underdeveloped economic, physical, educational, communication and other infrastructure. It has virtually no possibility to exercise what in reality amounts to a theoretical right to equal opportunity, with that right being equal within this black nation only to the extent that it is equally incapable of realization. (Mbeki 1998: 71–72)

Nearly 15 years after democracy, poverty remains the greatest social problem in South Africa, not least because of its contribution to social exclusion and its link to poorer health and the HIV/AIDS pandemic (Gyekye & Akinboade 2003; Mamburu 2004). It is also associated with the 'working-poor phenomenon'. Altman (2007) has argued that, in South Africa, earnings from employment and self-employment are low relative to the cost of living. For instance, 65% of working people halfway through the first decade of the twenty-first century still earned less than R2 500 per month, the same as a decade ago. Fifty per cent of South Africans lived below the R430 per person a month poverty line. Such people, Altman argues, are still extremely poor.

Woolard and Leibbrandt (1999: 23) argue that the incidence, depth and severity of poverty are unambiguously highest in the rural areas, followed by small towns and secondary cities, and considerably lower in metropolitan areas. They show that at a poverty line (at the time of writing) of R3 509 per adult equivalent per annum, the poverty *rate* in rural areas (that is, the percentage of individuals classified as poor) was 63%, compared with 22% in urban areas taken together.

In this chapter, poverty is understood broadly as going beyond one's inability to access basic needs such as food, shelter and clothing, but also as encompassing perceptions of helplessness, vulnerability, having no voice, being socially excluded, and feeling that those in authority do not care (Alcock 2007; Walsh 2007). To that end, the chapter endorses Woolard and Leibbrandt's (1999) conception of poverty as a five-dimensional phenomenon:

- '*poverty proper*' being a lack of adequate income or assets to generate income;
- *physical weakness* due to under-nutrition, sickness or disability;
- *physical or social isolation* due to peripheral location, lack of access to goods and services, ignorance and illiteracy;
- *vulnerability* to crisis and the risk of becoming even poorer; and
- *powerlessness* within existing social, economic, political and cultural structures.

Bhorat and Kanbur (2006) write of rising unemployment, rising income poverty, and rising income inequality, all in the context of a lacklustre performance in economic growth. Their contention is that the prospect for rapid and sustained economic growth, without which poverty and well-being cannot be addressed in the long run, is itself negatively affected by increasing inequality, poverty and

TABLE 2.1 *Recategorisation of the four variables to calculate the socio-economic status variable*

Education	Income	Ordinal variable	Value (Score)
No formal education	No income	Low	1
Some primary schooling	R1–R400		
Grade 7	R401–R800		
Some secondary schooling	R801–R1 600		
Matriculation/Grade 12	R1 601–R3 200	Middle	2
Technical college certificate	R3 201–R6 400		
	R6 401–R12 800		
Technikon certificate or diploma	R12 801–R25 600	High	3
University certificate or diploma	R25 601–R51 200		
Technikon degree	R51 201–R102 400		
University degree	R102 401–R204 800		
	R204 801 or more		

Source: Unless otherwise indicated, the data in all tables and figures in this chapter are derived from HSRC (2005)

unemployment. Borat and Oosthuizen (2005: 29) show that the highest rates of unemployment are experienced by the African labour force, at almost 50% in 2002, compared to 9% for whites.

Poverty in the Student Retention and Graduate Destination Study

In the Student Retention and Graduate Destination Study, questionnaires were sent to 34 548 students from seven institutions who left their institutions in 2002. The institutions included four historically black institutions (HBIs – UFH, UNorth, UWC and Pentech) and three historically white institutions (HWIs – SU, Wits and PtaTech).¹¹ See the introduction to this monograph for a full account of the methodology. Suffice it to say here that 14 195 of the individuals targeted had graduated and 20 353 had left prematurely. There was a 15% response rate among the graduates and 16% among the non-completers. A major contribution of the study has been its analysis of the SES of the respondents.

The SES of the survey population and respondents was calculated on the basis of a combination of the following ordinal variables:

- 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.

The four variables were recategorised to form four new ordinal variables with values 1 for 'low', 2 for 'middle' and 3 for 'high' according to the categories in Table 2.1.

The four new ordinal variables for each of the recategorised variables were then used to calculate a single SES variable that assigns a SES score to each learner in the database. The SES variable was

¹¹ The terms 'historically black' and 'historically white' are used to indicate the apartheid legacy of institutions. However, at the time of writing, most of the HBIs remained largely black while the racial profiles of most of the HWIs had changed considerably.

TABLE 2.2 *Graduates by institution and socio-economic status (%)*

Institution	Low SES	Middle SES	High SES	No values*	Total
University of Fort Hare	66	28	6	0	100
University of the North	61	21	18	0	100
Stellenbosch University	19	31	49	1	100
University of the Western Cape	75	15	9	1	100
University of the Witwatersrand	40	27	32	1	100
Peninsula Technikon	72	16	9	3	100
Pretoria Technikon	65	16	16	3	100
All seven institutions	56	21	21	2	100

Note: * Excluded in the calculation of the percentage distribution of SES.

simply based on the average score of the four ordinal variables and was calculated using the following formula:

$$SES_i = \frac{(FE_i + ME_i) + (FI_i + MI_i)}{4}$$

Where:

SES = Socio-economic status

FE = Highest level of education of the father/male guardian

ME = Highest level of education of the mother/female guardian

FI = Monthly income of the father/male guardian

MI = Monthly income of the mother/female guardian

Scores within the calculated SES variable ranged from 1 to 3, where scores ranging between 1 and 1.6666666 were coded to form 'Low SES', scores between 1.6666667 and 2.3333333 were coded to form 'Middle SES', and scores between 2.3333334 and 3 were coded to form 'High SES'.

Based on this categorisation, the study found that 70% of non-completers, compared with 56% of graduates, were from the low socio-economic group while only 12% of non-completers and 21% of graduates were from the high SES group. The HBIs had the highest proportions of low SES respondents

TABLE 2.3 *Non-completers by institution and socio-economic status (%)*

Institution	Low SES	Middle SES	High SES	No values*	Total
University of Fort Hare	82	10	6	2	100
University of the North	82	10	6	2	100
Stellenbosch University	53	20	25	2	100
University of the Western Cape	79	13	6	2	100
University of the Witwatersrand	50	24	25	1	100
Peninsula Technikon	74	16	8	2	100
Pretoria Technikon	66	19	13	2	100
All seven institutions	70	16	12	2	100

Note: *Excluded in the calculation of the percentage distribution of SES.

TABLE 2.4 *Percentage distribution between graduates and non-completers, by socio-economic status and race*

	Low	Middle	High	Missing	Total
Graduates					
African	71	15	12	2	100
Coloured	69	19	3	4	100
Indian	43	36	20	1	100
White	10	38	50	2	100
Total	55	22	21	2	100
Non-completers					
African	73	16	9	2	100
Coloured	68	24	7	1	100
Indian	48	24	26	2	100
White	12	41	47	0	100
Total	68	18	12	2	100

and the HWIs, SU in particular, had the highest proportions of high SES respondents. These trends are shown in greater detail in Tables 2.2 and 2.3.

Race and poverty

The study also showed a clear concentration of African and coloured respondents in the low SES category. Following is a detailed analysis of the data.

Table 2.4 shows that, of the African respondents, 71% of graduates and 73% of non-completers were in the low SES categories, as were 69% and 68% respectively of the coloured respondents. In the Indian group, 48% of non-completers and 43% of graduates were in the low SES category while the corresponding figures for whites were 12% and 10%. It is noteworthy that there is little difference in SES between graduates and non-completers, suggesting there are other factors that might be influencing success, such as academic preparedness. The importance of personal motivation is discussed in Chapter 4.

Whites had the highest concentration in the high SES category (50% of graduates and 47% of non-completers) and coloureds the lowest (9% and 7% respectively). Twelve per cent of African graduates and 9% of African non-completers were in the high SES category. There was a different trend among Indian respondents: there was a higher proportion of Indian non-completers than graduates in the high SES group (26% compared with 20%).

The non-completers

Of the 20 353 non-completers who were targeted in the survey, 3 328 (16%) responded. Table 2.5 presents a breakdown of non-completer respondents, by race. The following broad trends emerge:

- 68% of the non-completer respondents were in the low, 18% in the middle and 12% in the high SES categories;
- Africans formed 86% of the non-completer respondents overall but 91% of the non-completers in the low SES group, 76% of those in the middle income group and 70% of those in the high SES category;

TABLE 2.5 *SES breakdown of non-completers, by race*

SES	African		Coloured		Indian		White		Total	
	N	%	N	%	N	%	N	%	N	%
Low	2 084	91	149	6.5	22	1	23	1	2 278	100
Middle	453	76	52	9.0	11	2	78	13	594	100
High	272	70	16	4.0	12	3	91	23	391	100
Missing	61	–	3	–	1	–	0	–	65	–
Total	2 870	86	220	7.0	46	1	192	6	3 328	100

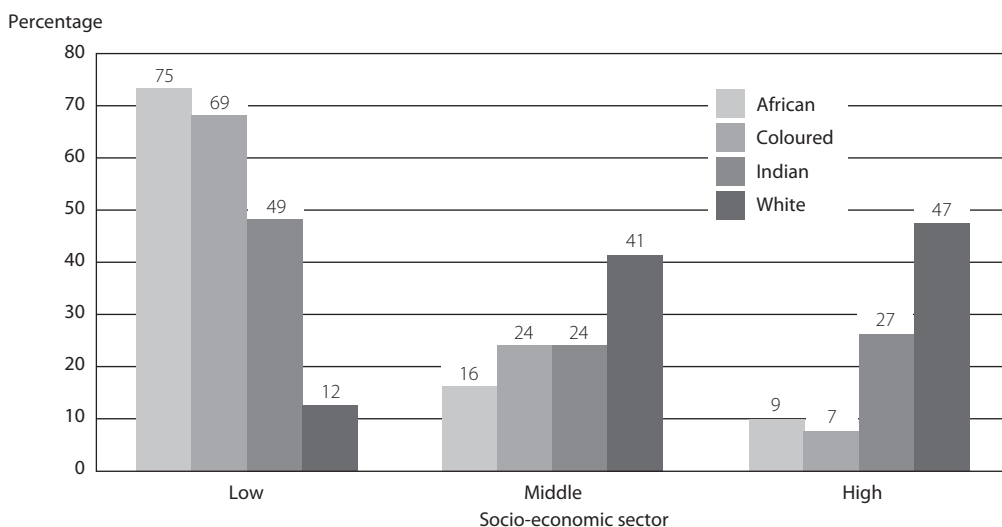
- coloureds formed 7% of the non-completers overall, 6.5% of the low SES non-completers, 9% of the middle SES non-completers and 4% of the high SES non-completers;
- Indians formed 1% of the non-completers overall, 1% of the low SES category, 2% of the middle SES non-completers and 3% of the high SES non-completers;
- whites formed 6% of the non-completers overall, 1% of the low SES category, 13% of the middle SES and 23% of the high SES.

Figure 2.1 presents another view of the non-completers' SES, showing, within population groups, the proportions in the different SES groups. For example, 75% of the African respondents were in the low SES group, 16% in the middle group and 9% in the high SES category.

The graduates

Of the 14 195 graduates targeted in the survey, 2 163 (15%) responded. Table 2.6 presents a breakdown of the graduate respondents by race:

- 55% were in the low SES category, 22% in the middle and 21% in the high SES category;

FIGURE 2.1 *Non-completer respondents' socio-economic status, by race*

Note: Missing values have been factored out.

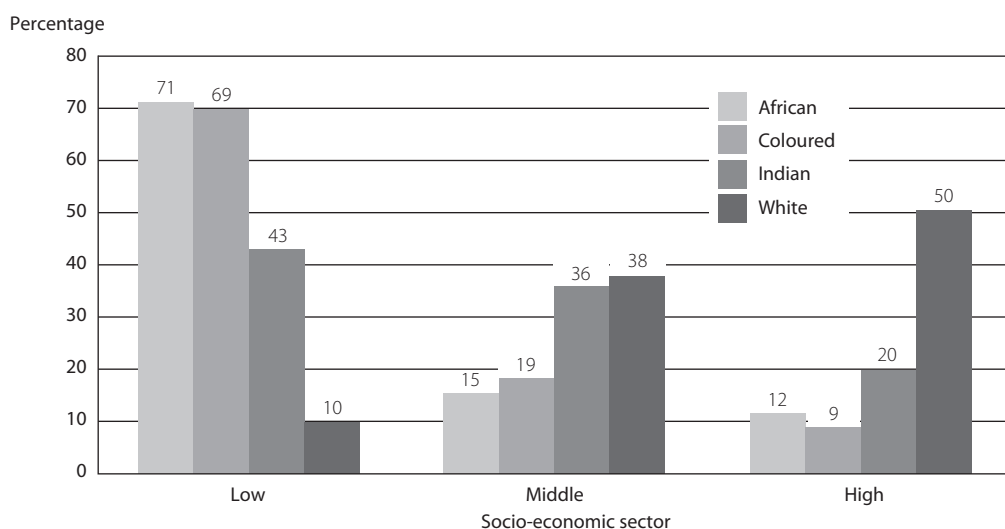
TABLE 2.6 *Breakdown of graduates, by race*

SES	African		Coloured		Indian		White		Total	
	N	%	N	%	N	%	N	%	N	%
Low	939	78	176	15	30	2.5	52	4	1 197	100
Middle	202	43	47	10	25	5.0	197	42	471	100
High	155	34	22	5	14	3.0	261	58	452	100
Missing	25	–	9	–	1	–	8	–	43	–
Total	1 321	61	254	12	70	3.0	518	24	2 163	100

- Africans formed 61% of the graduate respondents, but 78% of those in the low SES category and only 43% and 34% in the middle and high SES categories respectively;
- coloureds formed 12% of the graduate respondents, 15% of the low, 10% of the middle and 5% of the high SES categories;
- Indians formed 3% of the graduate respondents overall and 2.5% of the low, 5% of the middle SES and 3% of the high SES categories;
- whites formed 24% of the graduate respondents, but only 4% of the low SES, 42% of the middle and 58% of the high SES categories.

Figure 2.2 provides another view of the SES status of the graduates, showing, within population groups, the proportions within the SES categories.

Overall, the tables and figures suggest that non-completers are more likely to be from the low socio-economic group and African, and less likely to be from a high socio-economic group and white. Graduates are more likely to be white and from the high SES group. The trends confirm that the patterns of discrimination and disadvantage which were cemented under apartheid persist.

FIGURE 2.2 *Graduate respondents' socio-economic status, by race*

The next important consideration is how the legacies of educational discrimination have impacted on graduation and retention trends.

The apartheid legacy in education

The cardinal principles, policies and philosophy of apartheid education existed to ensure that Africans did not rise above the level of certain forms of labour (Fiske & Ladd 2004; Rose & Tunmer 1975). As Brooks (1968) argues, apartheid education was designed to restrict the productivity of black people to lowly and subservient tasks, and to render them economically non-competitive. Concomitantly, schools for whites were generously funded and sufficiently resourced, while schools for blacks were underfunded and deprived of facilities, textbooks, and a high calibre of qualified teachers. Fiske and Ladd (2004) argue that at the height of apartheid, per pupil spending in white schools was 10 times that in African schools. Even after a significant increase in spending on black pupils during the waning years of apartheid, spending on white pupils remained two-and-a-half times that spent on African pupils in urban areas and three-and-a-half times that spent on African pupils in most of the homelands.

Enslin (2003) shows that the annual per capita expenditure on the education of a white pupil during 1990/91 was R3 561 compared to R930 for the education of an African pupil. Letseka (1997) notes that, in 1993, a year before the transition from apartheid to democracy, the white minority government allocated R4 504 for the education of a white pupil, R3 625 for an Indian pupil, R2 855 for a coloured pupil, and a paltry R1 532 for an African pupil, which was less than a third of the proportion of funding allocated for a white pupil. As Lemon (2004) argues, the average white pupil benefited from educational expenditure that was nearly four times as great as that for the average African pupil. Historically privileged access to opportunity, and along with it to wealth, enabled white households to invest more than 10 times the amount an African household could invest in their children's education. Ramphela (2001) is unequivocal that whites in South Africa were raised to become citizens while blacks were denied not only the rights of citizenship, but also the kind of education that would prepare them to become morally autonomous agents. Enslin (2003) concurs, arguing that apartheid provided restricted, ethnically ascribed, second-class citizenship for blacks in separate states that were ostensibly independent.

The schooling system

Academics and administrators interviewed at some of the universities participating in the HSRC Student Retention and Graduate Destination Study were concerned that the study should address the issue of the inefficiency and poor performance of the country's schooling system. Interviewees drew attention to the very small pool of matriculants, particularly Africans and coloureds, who met the criteria for university study. Furthermore, those who did reach university were often academically under-prepared and socially ill-equipped for higher education study.

There is a considerable body of literature supporting these views. Fedderke et al. (2000) argue that South Africa's schooling system has seldom, if ever, represented human capital formation that could be described as healthy. Rather, it has been (and remains) distorted and fundamentally dysfunctional, and is not producing graduates who can go on to university. Keating argued in *The Cape Argus* (31 October 2007)¹² that many who make it to university drop out because they cannot cope with the academic demands. Fiske and Ladd (2004) show that repetition and dropout rates among black students are high and matriculation pass rates are low, with little evidence of improvement.

12 C Keating, 'Too few SA graduates to close skills gap'.

TABLE 2.7 *Higher Grade Mathematics candidates passing, by race and gender, 2002*

Race and gender	Candidates who wrote	Pass rate distribution	Candidates who passed	Pass rate %
African				
Female	7 185	42.7	1 638	22.8
Male	9 634	57.3	2 999	31.1
Total	16 819	100.0	4 637	27.6
Coloured				
Female	742	49.1	511	68.9
Male	769	50.9	556	72.3
Total	1 511	100.0	1 067	70.6
Indian				
Female	2 231	52.9	1 614	72.3
Male	1 987	47.1	1 421	71.5
Total	4 218	100.0	3 035	72.0
White				
Female	6 334	50.0	5 632	88.9
Male	6 329	50.0	5 394	85.2
Total	12 663	100.0	11 026	87.1

Source: Reddy (2006)

The erstwhile education minister, Naledi Pandor, acknowledges this. In her budget speech of May 2007 she noted that the levels of underperformance in South Africa's education system were unacceptably high and an unjust subversion of the historic promise of freedom and democracy that had been placed before the country's people (Pandor 2007). She acknowledged the legacy of apartheid, but questioned whether it still served to explain continued failures.

Table 2.7 captures the number and percentage of Higher Grade Mathematics candidates, by race and gender, who passed in 2002. There are glaring disparities in the pass rates between, on the one hand, Africans, and on the other, whites, Indians and coloureds: the white pass rate was 87%, the Indian pass rate 72%, the coloured pass rate 71%, and the African pass rate an appalling 28%.

Similarly, Table 2.8 captures the number and percentage of Higher Grade Physical Science candidates by race and gender, who passed in 2002. Once again, and consistent with Table 2.7, the glaring disparities in the pass rates between Africans on the one hand, and whites, Indians and coloureds on the other, are unmistakable. For instance, the white pass rate was 84%, both the Indian and coloured pass rate 72%, while the African pass rate was a paltry 24%. What is worth noting, though, is that while coloureds are second to Africans in the poor SES category, surprisingly they outperformed Indians in Higher Grade Physical Science.

TABLE 2.8 *Higher Grade Physical Science candidates passing, by race and gender, 2002*

Race and gender	Candidates who wrote	Pass rate distribution	Candidates who passed	Pass rate %
African				
Female	13 319	44.2	2 654	19.9
Male	16 837	55.8	4 475	26.6
Total	30 156	100.0	7 129	23.6
Coloured				
Female	786	45.4	570	72.5
Male	945	54.6	681	72.1
Total	1 731	100.0	1 251	72.3
Indian				
Female	2 617	50.7	1 973	75.4
Male	2 540	49.3	1 736	68.3
Total	5 157	100.0	3 709	71.9
White				
Female	5 815	43.0	5 098	87.7
Male	7 706	57.0	6 206	80.5
Total	13 521	100.0	11 304	83.6

Source: Reddy (2006)

Reasons for premature departure

In the Student Retention and Graduate Destination Study, the question arose as to whether non-completers left their institutions prematurely for academic reasons.

Table 2.9 analyses the top three reasons for leaving, by institution. Academic reasons were prioritised only at SU and Wits, both HWIs. Analysis showed that at SU the overall mean score was 2.7 out of a possible score of 5. Coloureds gave this the highest mean score (3.0), followed by Africans (2.7), and whites and Indians (2.5). Coloureds and Africans also gave above average scores to academic-related issues, such as 'I battled to learn all the new terminology and think in my chosen field of study' and 'I had no induction programme to my studies, which made it difficult for me to cope from the beginning'.

At Wits the highest mean score overall (2.8) was for 'I was failing...'. Whites gave it 3.1, Africans 2.8, Indians 2.9 and coloureds 1.8. But coloureds and Africans also ranked very highly issues related to poverty: coloureds gave a mean score of 2.8 and Africans 2.9 to the variable 'I did not have the funds to pay for my studies'.

With these trends in sight, and also taking account of the fact that the majority of respondents at the other institutions – including the historically white PtaTech – were African, the data suggest that the predominant reason for leaving for both coloureds and Africans was financial and not academic. This confirms the data about SES and also other trends which emerged in the study.

TABLE 2.9 *Top three reasons for students' leaving prematurely in 2002*

Institution	Top 3 reasons		
	1	2	3
University of Fort Hare	Financial (1)	Financial (2) / Admin	Career guidance
University of the North	Financial (1)	Admin	Financial (2)/ Academic
University of the Western Cape	Financial (1)	Academic	Financial (2)
Peninsula Technikon	Financial (1)	Academic	Social
Stellenbosch University	Academic	Lost interest	Financial (1)
University of the Witwatersrand	Academic	Financial (1)	Admin/Lost interest
Pretoria Technikon	Financial (1)	Academic	Financial (2)

Notes: Financial (1) = I did not have funds to pay for my studies.

Financial (2) = I could not afford to spend three or four years on continuous study, so I left, planning to return at a later point.

Academic = I was failing some or all of my courses, and realized I was unlikely to pass at the end of the year.

Admin = I was frustrated by the way the institution's administration dealt with students.

Lost interest = I lost interest in the programme I was studying.

Career guidance = The institution did not have adequate career guidance and counselling facilities.

Social = I had a very active social life.

TABLE 2.10 *Perceptions of reasons for exclusion, by institution*

Institution	Responses to question: 'Were you excluded from your institution in 2002?'						
	Yes			Not excluded (%)	Total (%)	Total respondents	
	Financial reasons (%)	Academic reasons (%)	Financial and academic reasons (%)			To this question	At this institution
University of Fort Hare	67	2	10	21	100	296	319
University of the North	26	3	13	57	100	545	604
Stellenbosch University	8	25	14	53	100	159	176
University of the Western Cape	27	18	23	32	100	233	257
University of the Witwatersrand	16	37	17	29	100	259	270
Peninsula Technikon	29	11	13	47	100	244	255
Pretoria Technikon	28	9	11	51	100	1 313	1 447
All seven institutions	30	11	13	46	100	3 049	3 328

Note: Some percentages do not add to 100% due to rounding.

Table 2.10 presents a breakdown of non-completers' responses to the question, 'Were you excluded from the institution in/after 2002?' While the largest proportion at all institutions said they had not been excluded from their institution, at the HBIs and PtaTech, the second highest proportions left for financial reasons, followed by financial and academic reasons, and finally, academic reasons alone. SU and Wits were exceptions, with 25% of the SU respondents and 37% of the Wits respondents reporting that they were excluded for academic reasons, followed by 14% and 17% respectively for academic and financial reasons, and 8% and 16% for financial reasons.

Overall, Africans were most likely to have left for financial reasons, coloureds for a combination of academic and financial reasons, and whites and Indians for academic reasons.

Financing studies

Having established that lack of finance is likely to be the greatest reason for dropout among African and coloured students, it is important to consider how students are being financed and what can be done to assist them to remain in the higher education system. Table 2.11 shows the non-completers' responses to the question, 'Who paid for your tuition and book fees in 2002?'

It is alarming, given the high proportions of Africans and coloureds in the low SES group, that these students had to rely to such a great extent on their parents for support. Forty-three per cent of African responses indicated support from parents or guardians, while only 28% of responses indicated support from the National Student Financial Aid Scheme (NSFAS). Likewise, 38% of coloured responses indicated support from parents or guardians, compared with 20.5% from NSFAS. The corresponding figures for the other groups were: Indians (74% from parents/guardians and 2% from NSFAS), and whites (57% from parents/guardians and 3% from NSFAS).

There was a similar trend in the responses to the question, 'Who paid for your living expenses while you were studying in 2002?' (Table 2.12) A total of 55% of responses indicated parental support. Among Africans the percentage was 55%, among coloureds 51.5%, among Indians 81% and among whites 57%.

Overall, one in every four (25%) respondents indicated that they supplemented their income by working (odd jobs, part-time or full-time jobs): 33% of coloureds, 32% of whites, 24% of Africans and 19% of Indians added to their income by working.

TABLE 2.11 *Source of income for fees, all seven institutions, by race*

Source of income for fees	African	Coloured	Indian	White	Total participants
I received funding from NSFAS	898	55	1	7	961
My parents/guardians	1 385	103	39	124	1 651
I received a bank loan	62	11	1	31	105
I received a bursary	173	44	5	14	236
I received a scholarship	48	2	2	3	55
Other (please specify)	655	53	5	39	752
Total	3 221	268	53	218	3 760

Notes: Students could indicate more than one source of support.

NSFAS = National Student Financial Aid Scheme

TABLE 2.12 *Source of income for living expenses, all seven institutions, by race*

Source of income	African	Coloured	Indian	White	Total
My parents/guardians paid for them	1 742	137	43	140	2 062
The money I received for my studies covered my living expenses	318	25	–	13	356
My friends/relatives other than my parents/guardians paid for them	138	5	–	2	145
I did odd jobs	150	17	3	10	180
I had a part-time job	145	43	4	34	226
I had a full-time job	459	28	3	33	523
Other	226	11	–	12	249
Total	3 178	266	53	244	3 741

In the light of these trends, it is worth considering the role and impact of NSFAS in supporting needy students.

The National Student Financial Aid Scheme

NSFAS is a legal entity that was established in 1999 by an Act (No. 56) of Parliament. The preamble to the NSFAS Act states that its purpose is to redress past discrimination and ensure representivity and equal access; respond to the human resources development needs of the nation; and establish an expanded national student financial aid scheme that is affordable and sustainable. Jackson (2002) argues that the creation of NSFAS as a legal entity was a clear indication of political will on the part of the South African government to address past inequalities and backlogs in higher education. This is all the more so given that the state contributes 78% to the fund, 18% comes from international donors, 3% from tertiary institutions themselves, and the remaining 1% from the private sector. Jackson (2002) argues that the unashamedly socio-political objective was necessary given that the legacy of apartheid and its education system had produced a vast preponderance of white graduates and a disproportionately small number of black graduates. Apartheid had also spawned a society which showed a clear correlation between being black and being poor. Academically able students were too poor to meet the cost of higher education without substantial assistance – a point that has been illustrated at length in the foregoing discussion.

Mkandawire (2005) argues that, for much of its history, social policy has involved choices about whether the core principles behind social provisioning will be ‘universalism’ or selectivity through ‘targeting’. Under universalism, the entire population is the beneficiary of social benefits as a basic right, while under targeting, eligibility to social benefits involves some kind of means test to determine the ‘truly deserving’. It is clear that the South African government has made a conscious social policy decision through NSFAS to target academically able (predominantly black) students who are poor and for whom the cost of higher education is unaffordable.

As a targeting policy choice, NSFAS uses a compulsory standardised means test to assess eligibility for a study loan. The DoE (2005) notes that there are at least five different types of test used by higher education institutions:

TABLE 2.13 *Total NSFAS allocation to HE institutions, in Rm, 1991–2005*

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Amount	21	41	55	70	154	333	350	394	441	511	635	733	894	985	1 200

Source: NSFAS (2009)

- a calculation of gross family income linked to a predetermined maximum, i.e. students are eligible for NSFAS if their gross family income is below the maximum;
- the calculation of per capita income with a per capita maximum, which serves as a cut-off point for eligibility;
- the use of a points system linked to either gross family income or per capita income to determine eligibility and the level of aid required;
- a questionnaire and interview system linked to predetermined guidelines for eligibility in which the nuances of family circumstances are explored to determine eligibility; and
- a notional family disposable income system which calculates what each individual family needs to live on and the extent to which the remaining funds can be utilised to support the applicant's studies.

Is NSFAS enabling academically deserving and financially needy black students to meet their own and South Africa's development needs? For Jackson (2002: 84), there is no question that it is fulfilling its objectives. He argues that the 93 402 students supported by NSFAS in the 2001 academic year represent a significant proportion (more than 20%) of South Africa's higher education student population who were enrolled in contact (non-distance) institutions. He argues that while between 1993 and 1999 the proportion of black students in the higher education student population rose from 56% to 73% – a significant change in racial profile – in the same period, NSFAS made over 400 000 awards to students, 99% of whom were black. Indeed, NSFAS's allocation of funds to higher education institutions has been steadily increasing since the inception of the scheme in 1991. Table 2.13 shows that the allocation increased from R21 million in 1991 to R1.2 billion in 2005 – an increase of 5 614 percentage points over the entire period.

The largest annual increase was between 1995 and 1996 – a 116 percentage point increase. Notwithstanding the five percentage point increase between 1996 and 1997, the average increase between 1991 and 2005 was 38 percentage points per annum. The extent of this increase underscores the government's commitment to meeting the financial needs of students.

But does this steady rise mean that NSFAS is reaching out far and deep enough to the 70 per cent of students who are on the economic fringe by virtue of their SES? This does not appear to be so. A number of academically deserving and financially needy students seem to be falling through the cracks of the scheme's bureaucracy. The DoE (2005) recognises that there may be a bunching of students just beyond the cut-off point; in other words, a large number of students may not be accessing NSFAS funds because their family income falls just outside the cut-off point. The implications of this are not encouraging. First, if students on the margins of the income cut-off point were to be considered, they would qualify for very small loans. Second, unless additional funds were available, it would result in the average loan size decreasing for all recipients. Third, this is most likely to put off many prospective borderline income students from applying to NSFAS because they would not qualify. Mkandawire (2005) argues that targeting typically involves uncertainty about whether rights to the ration will in practice be met or not, especially in situations where there is a high probability of being excluded even when one is among the 'deserving poor'.

In the case study of UWC (Chapter 4), administrators and academics pointed to further factors contributing to student poverty and dropout. Their greatest concern was the fact that NSFAS loans do not cover all the costs of university study and that students are usually compelled to find other sources of income to supplement their loans. This is because NSFAS has tried to spread its available funds as widely as possible rather than funding fewer students in full.

Conclusion

This chapter has concentrated on the SES of the respondents in the Student Retention and Graduate Destination Study and on issues relating to student poverty and academic underperformance.

We have found that the HBIs had the highest proportions of students from very poor backgrounds, and in general that there were higher proportions of poor students among the non-completers than among the graduates. African students were the poorest, followed by coloured students.

Lack of finance was the most important reason given for leaving prematurely at all but two universities. At these two – both historically white (SU and Wits) – the top reason for dropping out was academic.

One of the disturbing findings is that parents were the major source of funding for tuition and living expenses, even among the population groups that were found to be the poorest. Although some were gaining support from NSFAS, this funding was clearly insufficient to cover all expenses.

The study suggests that student poverty is the most important issue to be addressed if the student dropout rate is to be remedied.

References

- Alcock P (2007) How can we understand poverty and social exclusion, and how might we combat them? Some ideas for research and policy. Paper presented at an HSRC seminar, Pretoria, 16 October
- Altman M (2007) *Evidence-based employment scenarios: Employment scenarios to 2040*. HSRC Research Paper. Cape Town: HSRC Press
- Bhorat H & Kanbur R (eds) (2006) *Poverty and policy in post-apartheid South Africa*. Cape Town: HSRC Press
- Bhorat H & Oosthuizen M (2005) *The post-apartheid South African labour market*. Working paper, Development Policy Research Unit (DPRU). Cape Town: University of Cape Town
- Brooks E (1968) *Apartheid: A documentary study of modern South Africa*. London: Routledge & Kegan Paul
- CIA (Central Intelligence Agency) (2009) *The world factbook*. Washington, DC: Central Intelligence Agency
- Disraeli B (1980) *Sybil, or the two nations* (edited by T Braun). Harmondsworth, Middlesex: Penguin Books
- DoE (Department of Education) (2005) *Review of the National Student Financial Aid Scheme (NSFAS)*. Pretoria: Department of Education
- Enslin P (2003) Citizenship education in post-apartheid South Africa. *Cambridge Journal of Education* 33(1): 73–83
- Fedderke JW, de Kadt R & Luiz JM (2000) Uneducating South Africa: The failure to address the 1910–1993 legacy. *International Review of Education* 46(3/4): 257–281
- Fiske EB & Ladd HF (2004) *Elusive equity: Education reform in post-apartheid South Africa*. Washington, DC: Brookings Institution Press
- Gyekye AB & Akinboade OA (2003) A profile of poverty in the Limpopo Province of South Africa. *Eastern Africa Social Science Research Review* 19(2): 89–110
- HSRC (Human Sciences Research Council) (2005) *Data-set for the Student Retention and Graduate Destination Study*. Pretoria: Human Sciences Research Council

- Jackson R (2002) The National Student Financial Aid Scheme of South Africa (NSFAS): How and why it works. *Welsh Journal of Education* 11(1): 82–94
- Lemon A (2004) Redressing school inequalities in the Eastern Cape, South Africa. *Journal of Southern African Studies* 30(2): 269–290
- Letseka M (1997) Research and the empowerment of teachers. In J Mouton & J Muller (eds) *Knowledge, method and the public good*. Cape Town: HSRC Press
- Mamburu DN (2004) Evaluation of the poverty relief programme in the Limpopo Province within the context of the Reconstruction and Development Programme: A social work perspective. PhD thesis, University of Pretoria
- Mamdani M (1999) There can be no African Renaissance without an Africa-focused intelligentsia. In MW Makgoba (ed.) *African renaissance: The new struggle*. Cape Town: Mafube Publishers
- Mbeki TM (1998) *Africa the time has come: Selected speeches of Thabo Mbeki*. Johannesburg: Mafube Publishers
- Mkandawire T (2005) *Targeting and universalism in poverty reduction*. Social Policy and Development Programme Paper No. 23. Geneva: United Nations Research Institute for Social Development
- NSFAS (National Student Financial Aid Scheme) (2009) *NSFAS fact sheet: Amounts awarded between 1991 and 2005*. Available at <https://www.nsfas.org.za/web/view/general/statistics/loanstatistics>. Accessed on 16 April 2009
- Pandor N (2007) *Affirming excellence and challenging mediocrity*. Department of Education Budget Vote 2007/08. 29 May. Available at <http://www.polity.org.za/article/pandor-education-dept-budget-vote-200708-29052007-2007-05-29>. Accessed on 13 July 2009
- Ramphela M (2001) Citizenship challenges for South Africa's young democracy. *Daedalus: Journal of the American Academy of Arts and Sciences* 130(1): 1–17
- Reddy V (ed.) (2006) *Marking matric: Colloquium proceedings*. Cape Town: HSRC Press
- Rose B & Tunmer R (eds) (1975) *Documents in South African education*. Johannesburg: AD Donker
- Stats SA (Statistics South Africa) (2008) *Income and expenditure of households 2005/6: Analysis of results*. Pretoria: Statistics South Africa. Available at <http://www.statssa.gov.za/Publications/Report-01-00-01/Report-01-00-012005.pdf>. Accessed on 16 April 2009
- Walsh S (2007) Uncomfortable collaborations: Contesting constructions of the poor in South Africa. Paper presented at the SANPAD Poverty Challenge Conference, Durban, 27 June
- Woolard I & Leibbrandt M (1999) *Measuring poverty in South Africa*. Development Policy Research Unit Working Paper No. 99/33. Cape Town: University of Cape Town

Student inclusion and exclusion at the University of the Witwatersrand

Gill Scott and Moeketsi Letseka

Introduction

Since 1994, the higher education sector has been the focus of policy development and structural reform intended to transform practices that constituted a part of apartheid society, in order that this sector may both contribute appropriately to the development of citizens who are enlightened, responsible and critical (in a constructive way) (Pityana 2005) and address the development needs of society. Universities were expected to be vehicles of social redress.

The concept of transformation is not unproblematic, however, and understandings have not necessarily been clarified by policy documents. Lange (2006) argues that the White Paper 3 suggestion of 'responsiveness to the needs of society' produced a wide range of institutional manifestations varying according to individual institutional interpretations and related to institutional histories. In addition, Kotecha (2006) argues that transformation requirements that imply the replacement of one set of conditions by another within a fixed period – a set of conditions intended to bring equity and excellence – overlook the fact that South African institutions would also respond to ideas of transformation derived from the international higher education sector.

The existence of differing understandings of transformation was mentioned by one of the Wits university interviewees for the Student Retention and Graduate Destination Study; she suggested that with the changing enrolment profile in the university came a changed understanding of transformation. Of the tertiary institutions included in the HSRC's study, Wits belongs to the category of historically white and advantaged urban universities, with an established English-speaking liberal tradition.

Changed enrolment patterns are the starting point for a consideration of the manner in which the university is dealing with cultural diversity. Racial desegregation of the universities coincided with a move to increase participation in higher education. Increased participation from a broader range of social groups and classes was identified by the National Commission for Higher Education (NCHE 1996) as one of the central attributes of a future, transformed, unitary higher education system. As a result, changing patterns of access to higher education in South Africa amount to one of the most rapid and socially significant demographic changes anywhere in the contemporary era (Bundy 2006).

However, access is more complex than enrolment, and is related to issues of institutional culture. In a review of the transition to a non-racial education system in South Africa, Jansen (2004) distinguishes between racial desegregation and social integration, proposing four levels in the 'migration' from one to the other. Racial desegregation is at the lowest level, increasing through staffing integration and curriculum integration to, at the highest level, the integration of institutional culture.

This chapter will consider information obtained from the Wits case study (Scott 2009) with respect to these four levels of integration. The focus is the extent to which Wits is dealing with the inclusion or exclusion of students from a cultural perspective different from the dominant institutional one. An examination of questionnaire responses has been supplemented with information derived from interviews with academics and administrators, as well as with quantitative data from the DoE's Higher Education Management Information System and from the institution's *Three-Year Rolling Plan: 2004 to 2006* (Wits 2003).

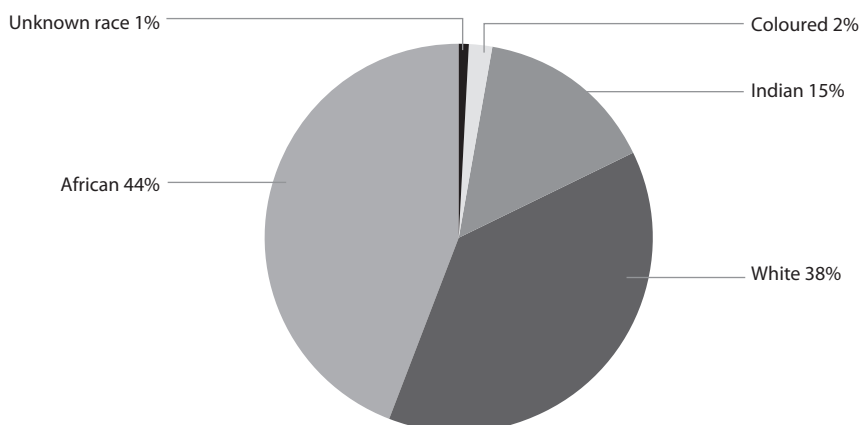
Racial desegregation

The first level, racial desegregation, has become a legislative demand in universities, whose survival depends on the extent of transformation manifested in their student composition. But racial desegregation is as much a question of social justice as it is of student demography (Jansen 2004).

Although enrolments of Wits students under consideration in the Student Retention and Graduate Destination Study are as indicated in Figure 3.1, the targeted racial profile of undergraduate enrolment for 2004 to 2006 was closely aligned to the demography of the region, and had been achieved by the time of the study. The university operated a targeted student recruitment drive through its marketing department, initiated by the vice-chancellor. The strategy targeted students with a good chance of success, with emphasis on previously disadvantaged sectors. An important aspect of the recruitment strategy was the forging of partnerships with key feeder schools. Schools producing a high ratio of matriculation exemptions were identified and corresponding enrolment statistics monitored – on the basis of numbers of students from those schools applying, qualifying and registering.

There was a strong emphasis on the previously disadvantaged among these key feeder schools. Rural schools were also specifically targeted. While the service to these schools was reportedly of the same quality as that offered to other schools, there were essential differences in the type of service offered, since the disadvantaged schools have smaller basic information capacity. For these schools, the aim was increased matriculation exemption rates.

FIGURE 3.1 Percentage distribution of headcount enrolments at Wits, by race, 2000–03



Source: DoE (2007)

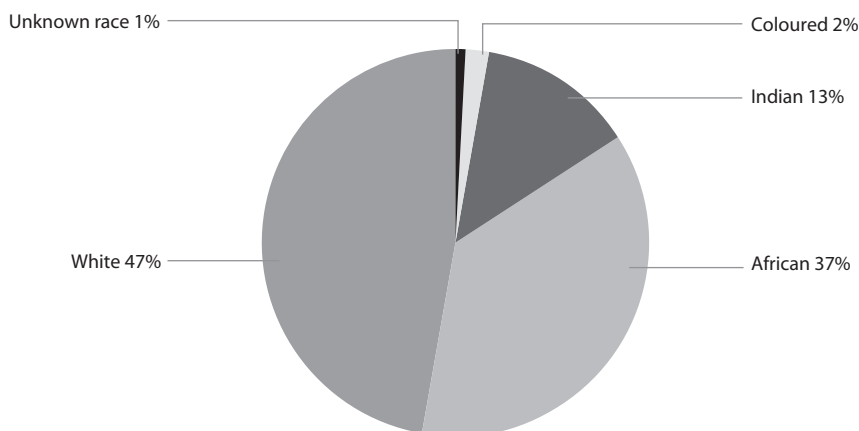
An important principle in university interactions with schools and potential students was that the university offered an information service aimed at improving the decision-making capacity of potential students as this related to their higher education. This consideration was regarded as at least as important as the marketing of the university itself, having significance for student motivation, which has been found to be a key indicator for student success (Interview with Assistant Dean for Academic Support).

Although the targeted recruitment strategy was driven from the highest level, by the vice-chancellor, support at the level of lecturing staff was uneven. While academic staff members were encouraged to participate in school career evenings that constituted a part of the engagement with key feeder schools, and many did so, participation was less than ideal. With the capping of intake numbers, and applications oversubscribed, the university was in a position to select those applicants with the best possible matriculation results, and as a consequence the need for recruitment was questioned by some.

Student admission is complicated, however, by the fact that matriculation is an insufficient indicator of potential success. Some who on the basis of their matriculation results should apparently not be admitted do succeed academically, and differences between moderately good and less good matriculation results do not produce corresponding differences in university performance. Decisions related to exclusions on the basis of matriculation results are thus difficult to defend, since they are made in the knowledge that a substantial proportion of those excluded have as good a chance of success as those who may have achieved slightly better. In addition, questions are raised regarding assumptions that can be made about levels of achievement, given variations in the quality of the learning environment across schools and considerations related to the level (Higher Grade or Standard Grade) at which a subject was taken.

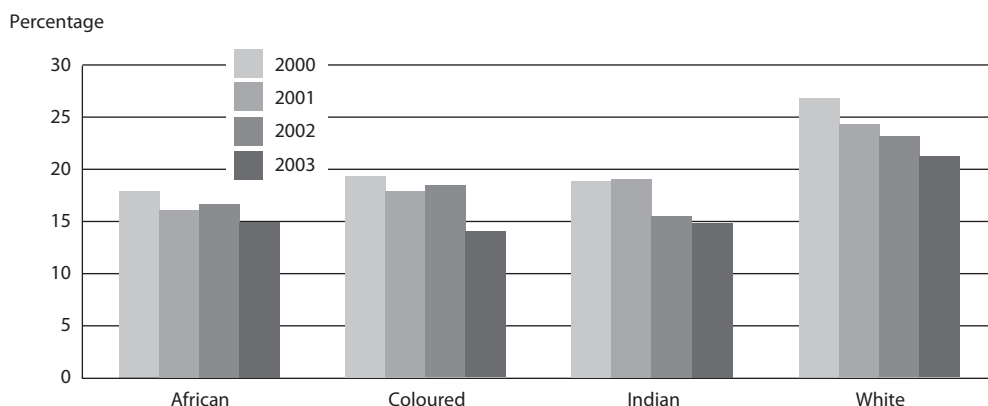
The capping of intake numbers increases the tension between the university transformation agenda and efficiency prescriptions imposed on improving throughput rates. With matriculation rates from previously disadvantaged schools likely to be inferior to those of more advantaged schools, transformation imperatives would favour greater latitude in the use of school results as an admission

FIGURE 3.2 *Percentage distribution of graduates from Wits, by race, 2000–03*



Source: DoE (2007)

FIGURE 3.3 *Graduation rates at Wits, by race, 2000–03*



Source: DoE (2007)

tool. Individual adjustment is critical at all levels – emotionally, socially, intellectually – in the transition from high school. School results are no guarantee of success.

The national disparity in graduation rates was echoed at Wits. The graduation distribution in Figure 3.2 shows a greater percentage of white than of African graduates.

Interviews with academics and administrators indicated that, as a consequence of achievement of enrolment targets, the understanding of ‘transformation’ in the university had shifted – from the prevailing situation, in which African students have a lesser chance of success than whites and women a greater chance of success than men, to one in which every student has an equal chance of success, regardless of background or individual difference. Specific graduation rates by race (Figure 3.3) show a decline for all races over the period of the study, with rates for whites better than those for other races for each of the years under consideration. The decline could be due to increases in enrolments which, between 2000 and 2003, amounted to growth of 26%.

Staff integration

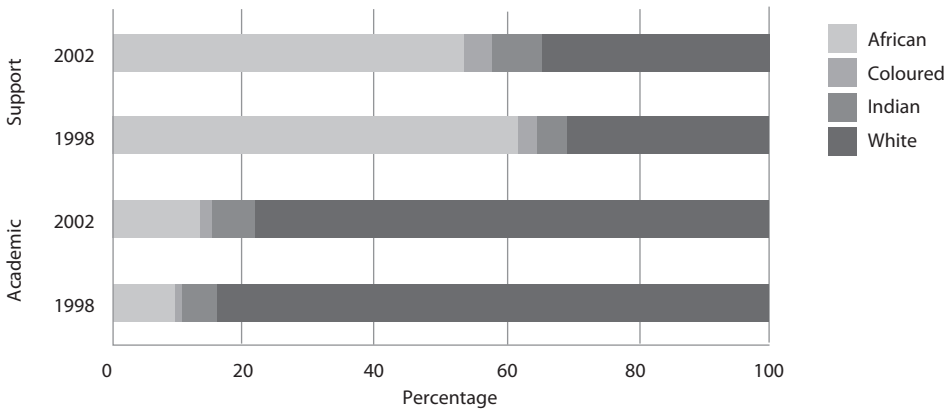
Progress made at Wits in the integration of academic staff does not match that achieved in respect of student enrolment. The demographic mismatch between staff and students is significant. This is of concern, since students ‘are without role models and mentors in academic and personal development’ (Pityana 2005: 10). The university staff profile during the period of the Student Retention and Graduate Destination Study is illustrated in Figure 3.4.

In 2002, whites comprised 79% of the university’s total academic staff, while Africans accounted for 13%. This is very much the same as the national proportions for 1995, as noted by Reddy (2004: 36), when whites made up 82% of the total university academic staff, and Africans 11%. This disparity is increased with increasing seniority, as indicated in Figure 3.5, which shows the situation for lecturing staff at Wits in 2000.

The staff racial profile for 2001 shows marginal changes in the direction indicated by targets for 2006, in which white racial predominance is slightly diminished. The targets for 2006 are illustrated in Figure 3.6.

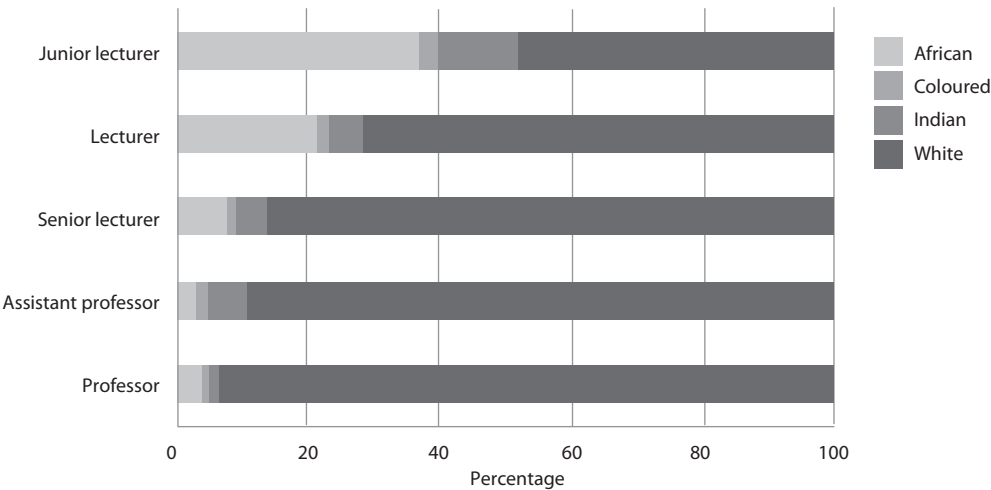
However, it should be recognised that rapid change at the senior levels of academic appointment is not readily achievable: senior academics with specialised fields of expertise and substantial experience take time to grow. In this regard, Wits is in the same boat as all universities.

FIGURE 3.4 *Wits staff composition, 1998 and 2002*



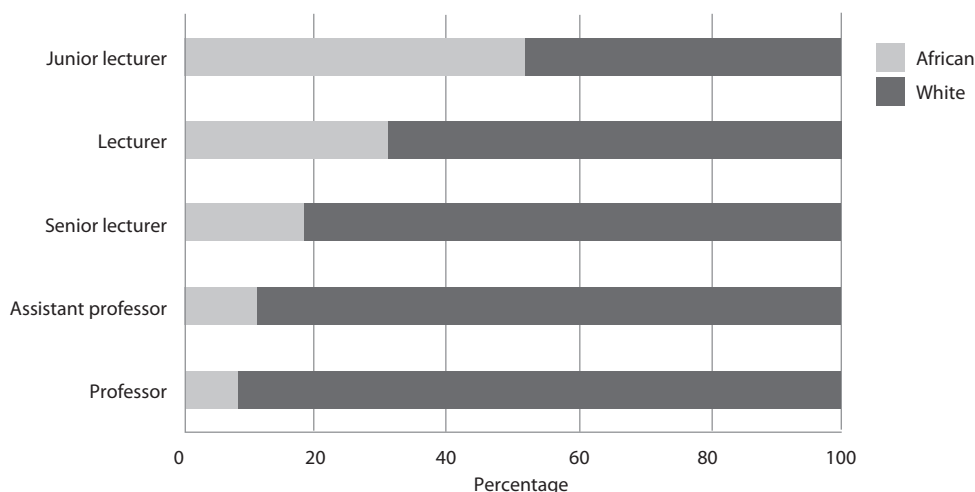
Source: Wits (2003)

FIGURE 3.5 *Full-time instruction/research staff at Wits, by rank and race, 2000*



Source: Wits (2003)

FIGURE 3.6 *Percentage African and white academic staff: Targets for 2006*



Source: Wits (2003)

Curriculum integration

At the third level in Jansen's (2004) 'migration' towards higher levels of integration is curriculum integration. The information obtained in the Student Retention and Graduate Destination Study in no way allows judgement regarding the extent to which the university curriculum reflects the 'experiences, histories, cultures and politics of marginalized, subaltern discourses as these relate to the majority of continent-wide residents' (Reddy 2004: 8). Instead, this section will focus on aspects of the university curriculum intended to provide specific student support.

Throughput and retention are of great concern at Wits. At the end of 2002, in addition to an Enrolment Planning Team, a Throughput and Retention Planning Team was established with the purpose of seeking strategies to ensure that all students had a reasonable chance of success. The university senate's Teaching and Learning Committee initiated the Success Rate Intervention intended to target courses with poor success rates in each faculty. The purpose was to reach a predictive state in which students at risk were identified early on, in order for preventive interventions to be made.

The university has a Teaching and Learning Committee in every faculty to analyse teaching and learning in the faculty, to promote teaching and learning practices, and to provide academic support for students. Academic staff with these responsibilities are supplemented in some faculties by assistant deans with Teaching and Learning, Quality Assurance, and Student Affairs portfolios. There is no central academic development unit, and so there are no central academic development policies in place. The lack of curriculum development coordination at a central level was identified as a key weakness in student support (Wits 2003).

Foundation programmes

All faculties and many disciplines within faculties have been offering foundation courses, or extended curricula, to provide access and support for students who did not achieve automatic entrance points.

Extended curricula are of different formats in the different faculties. They do not constitute just a 'slow stream', but rather combine bridging activities with the standard curriculum. The extended programmes provide identified students with an extra year for their degree, with supplemented content in the first year that combines bridging activities with the standard curriculum (Interview with Registrar, Academic). These curricula provide a strong focus on the development of academic literacy, being embedded as they are in the schools and their programmes and disciplines rather than operating from a stand-alone unit.

Many of these programmes have been threatened by reduced funding and the capping of student numbers. As a result, there has been a move in the university to mainstream academic development programme techniques and methodologies. Consideration is being given to bringing into the mainstream core curricula specialised key resources and supportive teaching and learning functions, which were developed from those strategies introduced in the 1980s as 'add-ons' supplementary to the general curricula. In this way, a greater number of students will benefit from the strategies developed in the extended programmes, regardless of matriculation points (Interview with Registrar, Academic).

From a curriculum perspective, the pressure to mainstream the supportive strategies that were a part of the extended foundation programmes would seem to indicate a shift from the idea that those students who need such increased support are in the minority, and exceptional, to the idea that selected proven support strategies are regarded as part of the menu for mainstream students.

Teaching and learning

From the point of view of lecturers, increasing pressure on academic staff to engage with development and evaluation strategies with respect to their own teaching practices indicates the intention of the university to achieve a broad shift away from practice that focuses on subject knowledge only.

Although independent and critical thinking would appear to be logically linked to a *modus operandi* in which students carry the responsibility for their own learning, many enrolled students from all types of schools are not responsible enough and need assistance in this regard. Numerous comments made during interviews related to the lack of a teaching ethic. There is concern at Wits that many students do not develop the required levels of responsibility without specific effort on the part of the university.

It was suggested in interviews that lecturers may feel that their students' lack of success is 'someone else's problem', and that this attitude is aggravated by the lack of recognition of the importance of teaching. The status of teaching as an academic function is lower in the university than other responsibilities of academic staff, particularly research and publication, which are thought to be more highly valued and more likely to result in career advancement. In an environment in which research is encouraged, academic staff experience difficulty in balancing their research work with their teaching. The most junior members of staff, or those with the least experience and the lowest status, are more likely to be given the responsibility of teaching in the foundation courses, while more seasoned lecturers offer postgraduate classes. As a counter to this, encouragement is given to academics functioning predominantly in the 'teaching track' to publish their research practice in this area.

There is also, reportedly, bad teaching, particularly where older teaching strategies have been used in the same way over long periods of time, regardless of the dramatic changes in the student cohort. Lecturers tend to overemphasise content and theoretical underpinning at the expense of a focus on study skills (Interview with Head, CLTD). It was suggested in interviews that lecturers are considered to have the ability to teach because they have been taught, and not because they have been taught how to teach.

As a consequence, the extent to which academic staff give academic support to students varies. Some staff are extremely supportive of students, others less so. The question was raised as to how prepared academic staff are for the changing nature of the student population, and to what extent university lecturers should be taught teaching methodology, which was not mandatory at the time of the study.

The Centre for Learning and Teaching Development (CLTD) at Wits has primary responsibility for academic staff development, as well as for the training of all categories of staff, including all levels of non-academic staff. Workshops are available to all groups of staff. A wide range of support is available for academic staff, including training mechanisms to help them understand the kinds of students they teach, as well as pedagogy issues such as teaching methodologies and assessment strategies, cognitive learning styles, postgraduate supervision skills, basic and advanced counselling skills, mentoring, diversity, and induction for new staff.

The CLTD, staffed part-time with students as writing consultants, initiated the Writing Centre, which provides support in writing for both students and staff. Workshops are offered, including those for academics to build writing skills into their courses. Although the Writing Centre is utilised to full capacity by students and staff, it is under-resourced (Interview with Head, CLTD). It was suggested in an interview that the existence of the Writing Centre tends to reinforce the remedial model perception of academics: that they can send students elsewhere to be 'fixed', and thus that students' lack of success is someone else's problem.

The main weakness of the CLTD programmes is that they are voluntary and dependent upon individual initiative to seek them out. The programmes are reportedly utilised more by younger staff. More senior staff are thought not to emphasise pedagogy, but rather to prioritise knowledge of their own disciplines. No tracking of CLTD programmes is done beyond participant evaluations (Interview with Head, CLTD).

Participant evaluations do, however, reveal that courses are well received. But their value may have been weakened by their lack of organisation into a coherent programme targeting long-term and sustained development. An added weakness is the lack of academic grounding in research into teaching and learning, and particularly into theories of teaching in higher education. However, a postgraduate qualification for lecturing in higher education is reportedly under consideration (Interview with Head, CLTD).

The university has a staff development policy requiring all new lecturers to be trained. Courses are on offer for new lecturers, although none are compulsory. New lecturers are supposed to be assigned mentors by department heads, although the policy is not implemented consistently. Courses are offered for mentors at different levels (Interview with Head, CLTD).

The CLTD and the senate's Teaching and Learning Committee constitute the coordinating body for drafting policy relating to teaching and learning and for disseminating exemplars of best practice in this regard. Whereas evaluation of teaching effectiveness was in the past voluntary and confidential, policy has been drafted to make evaluation mandatory, with the intention of encouraging increased uptake of development opportunities by academics. The strategy requires self-evaluation for every lecturer. Although lecturers are free to choose the evaluation method, over a three-year period a variety of strategies should be utilised (Wits 2003). In order to address challenges at institutional level, teaching, learning and assessment policies are being put in place. Attempts are being made to capture within a document the scholarly principles of the institution regarding university academic aims and values. A teaching code of practice has been drafted, in which lecturers' responsibilities with respect to supporting students' learning are defined.

By 2005, Wits staff development interventions included a series of credit-bearing workshops offered for continuous professional development, as well as credit-bearing programmes allowing for the provision of informal components to be taken up at different times according to staff members' needs.

Students

Students' ability to think critically is seen to be paramount. Interviews with senior management of the university, however, provided abundant evidence that students' assumption of responsibility for their own individual study progress is an aspect with which many students, regardless of race or school background, struggle. It was surmised that those coming from homes in which there is strict discipline tend to overreact to the lack of overt supervision in the university, and that their academic progress suffers as a consequence. Schools across the board, moreover, appear to differ in the extent to which they are effective in preparing matriculants to be responsible and successful students.

Efforts have been made by the university to conscientise students regarding their own responsibilities within the teaching and learning process. This strategy began with university partnerships with the schooling sector, where efforts were made to support the development of students' capacity to make informed choices relating to their tertiary education. The need to formalise the teaching–learning relationship as a two-way process affected by student attitudes to their responsibilities, their motivation and their learning culture has been recognised, and the drafting of a student code of conduct for the university has been planned.

The establishment of the Counselling and Careers Development Unit (CCDU) was an important strategy in the non-academic support of students' chances of success. The CCDU has a programme to sensitise first-year students to the unit's available services, and runs a course aimed at promoting adjustment to university life. Efforts are being made to formalise this course, and particularly to assign credits to it (Interviews with Registrar, Academic, and Head, CCDU).

The CCDU has an active awareness campaign targeting students who might need support, with posters displayed all over the university. A wide range of services is offered, covering therapy, advocacy, sexual harassment, a Crisis Centre, and Career Education and Employment Services.

A key weakness of the CCDU programmes, however, is their lack of academic status. The courses benefit students greatly, but are not credit-bearing (Interview with Head, CCDU). Student access to CCDU services is voluntary. Generally only highly responsible students take advantage of such services, and those that do, tend to utilise all of the available services (Interview with Head, CCDU). However, it is fairly common for students to wait until it is too late in the year for the support to be effective, or to wait for a crisis to occur before seeking out the unit. Some in this situation do not seek access to these services at all.

There was a strong feeling on the part of CCDU staff that issues of retention and prospective employability are linked to the levels of integration between support services and the academic departments. It was thought that if lecturers were to promote the CCDU programmes more vigorously, seeing their importance as complementary to intellectual endeavour, this would increase student success. Existing support across faculties in the university is therefore seen as something of a weakness. Since academic staff see students far more often than the CCDU unit does, their sensitivity to alarm signals would enable them to make prompt referrals.

Opinion in the CCDU is that there should be a compulsory fundamental credit-bearing course for student support integrated into all first-year curricula. At Wits, however, the support aspect competes with the traditional academic timetable.

Reasons for premature departure from Wits

Information obtained from the survey of students who left the university in 2002 without completing their qualification included the ranking of given factors that may have contributed to premature leaving of the institution. Analysis of the proffered factors (31 overall) shows that the factor which earned the highest mean score was 'I was failing some or all of my courses and realised I was unlikely to pass at the end of the year' (2.8 on a 5-point Likert scale), followed by 'I did not have funds to pay for my studies' (2.6). Since neither of these is above the mid-point of 3, however, neither exerted a strong influence on students.

A breakdown of the top five factors by racial group (Table 3.1) shows that only two of the variables – administrative frustrations and failing of courses – exerted any palpable influence on students' premature departure from the institution: the former influenced coloured students (3.3), while the latter influenced white students (3.1). However, neither score is high – confirming the finding of Cosser with du Toit (2002) that students are prone to be more negative in their responses to negatively worded than to positively worded questions.

Institutional culture integration

The highest identified level of social integration is institutional culture integration (Jansen 2004). Institutional culture is understood as the sum of the assumptions, beliefs and values that its members share, and is expressed through what is done, how it is done and who is doing it (Farmer 1990).

Interviews conducted for the Student Retention and Graduate Destination Study revealed a dichotomy of opinion on the influence of institutional culture on the academic performance of students. Some argued that, given the diversity of the student population at the time of the study, which reflected the demography of the city, institutional culture impacts on retention far less than it did in the past. Others argued that Wits has an alienating culture, leading to feelings of exclusion and lack of belonging, especially for previously disadvantaged individuals.

Jansen (2004: 8) emphasises the need to identify specific 'points of power' that sustain the status quo in universities if the problems of redressing racial divisions in education are to be addressed. He suggests

TABLE 3.1 *Top five reasons for premature departure from Wits, by race*

Population group	Top five reasons				
	1	2	3	4	5
African	Lack of funds (2.9)	Failing courses (2.8)	Little self confidence (2.4)	No induction programme (2.3)	Admin frustrations (2.2)
Coloured	Admin frustrations (3.3)	Lack of funds (2.8)	Lecturers inaccessible (2.6)	Active social life (2.5)	Racial prejudice (2.4)
Indian	Failing courses (2.9)	Active social life (2.5)	Admin frustrations (2.4)	Lost interest in programme (2.3)	No induction programme (2.2)
White	Failing courses (3.1)	Lost interest in programme (2.8)	Active social life (2.3)	Little self-confidence (2.2)	Got a job (2.0)

Source: HSRC (2005)

that while higher education institutions are able to create diversity and signal inclusive directions at the levels of senior management and student admission, institutional culture is largely carried 'in the locus of middle management'. This level, which includes deans and heads of department, is where decisions relating to academic appointments are taken. Middle level management in the administrative sphere has the responsibility for processes of appointment, such as the placing of advertisements, convening pre-selection meetings and selection committees, and setting appointment criteria. It has been suggested that the extent of power at this level, located in the various faculties, is such that 'the very notion of a university having a homogeneous institutional culture is subject to persuasive critique' (Reddy 2004: 8).

Conclusion

The profile across the four levels of integration at Wits in the first half of the decade varied considerably. It is clear that significant efforts have been made to advance aspects of curriculum integration in order to keep pace with the university's racially desegregated enrolment profile. Issues of teaching and learning as these relate to both lecturers and students are closely focused on improving the chances of success of enrolled students. With a significantly transformed racial profile of student participation at Wits, substantial resources have been devoted to bringing equal opportunities for success to all enrolled students.

That these support strategies are becoming part of the mainstream credit-carrying menu for students, with similar persuasive inducements for lecturers to shift their practice from one of subject knowledge presentation to increasing involvement in students' learning processes, is testimony to the transformation of teaching and learning practices at the institution.

Progress in staff integration and institutional culture integration is substantially less, however, having not been prioritised to the same extent. As a consequence, access and exclusion remain problematic for students, many of whom lack adequate role models in the university.

References

- Bundy C (2006) Global patterns, local options? *Kagisano: Ten years of higher education under democracy*. Issue No. 4. Pretoria: Council on Higher Education
- Cosser M with du Toit J (2002) *From school to higher education? Factors affecting the choices of Grade 12 learners*. Cape Town: HSRC Press
- DoE (Department of Education) (2007) *HEMIS database*. Pretoria: Department of Education
- Farmer DW (1990) Strategies for change. Quoted in JR Keup, AA Walker, HS Astin & JA Lindholm (2001) *Organizational culture and institutional transformation*. Eric Clearinghouse on Higher Education. Washington, DC: Institute for Education and Policy Studies
- HSRC (Human Sciences Research Council) (2005) *Data-set for the Student Retention and Graduate Destination Study*. Pretoria: Human Sciences Research Council
- Jansen J (2004) Ten years of race, education and democracy. In Idasa *Lessons from the field: A decade of democracy in South Africa*. Cape Town: Institute for Democracy in South Africa
- Kotecha P (2006) In name only? The case of the university. *Kagisano: Ten years of higher education under democracy*. Issue No. 4. Pretoria: Council on Higher Education
- Lange L (2006) Symbolic policy and 'performativity': South African higher education between the devil and the deep blue sea. *Kagisano: Ten years of higher education under democracy*. Issue No. 4. Pretoria: Council on Higher Education

- NCHE (National Commission on Higher Education) (1996) *A framework for transformation*. Pretoria: National Commission on Higher Education
- Pityana NB (2005) An open letter to the president of the Republic of South Africa, His Excellency Mr T.M. Mbeki. *South African Journal of Higher Education* 19(3): 415–422
- Reddy T (2004) *Higher education and social transformation: South African case study*. Pretoria: Council on Higher Education
- Scott G (2009) The University of the Witwatersrand. In M Letseka & M Cosser *Pathways through higher education to the labour market: Student retention, graduation and destination*. HSRC client report for the Ford Foundation. Pretoria: Human Sciences Research Council
- Wits (University of the Witwatersrand) (2003) *Three-year rolling plan: 2004 to 2006*. Johannesburg: University of the Witwatersrand

Interviews

- Assistant Dean for Academic Support, Faculty of Humanities, University of the Witwatersrand, 2005
- Head, Counselling and Careers Development Unit, University of the Witwatersrand, 2005
- Head, Centre for Learning, Teaching and Development, University of the Witwatersrand, 2005
- Registrar, Academic, University of the Witwatersrand, 2005

CHAPTER 4

Dropout or stop out at the University of the Western Cape?

Mignonne Breier

Introduction

International research on student retention in higher education presents a wide range of reasons why students leave prematurely and argues that usually students are affected by a combination of factors rather than one factor alone. Tinto, whose writings on student dropout since the 1970s have acquired paradigmatic status (Braxton et al. 2004), presents an explanation of student dropout that focuses on the concept of student integration. Yorke (1999: 9) has presented the gist of the argument:

...a student enters higher education with a set of background characteristics, intentions and expectations, and his or her decision to persist or depart is a function of the extent to which he or she has succeeded in becoming integrated into the institution socially and academically. Tinto suggests that where the experience of the institution is negative, the individual tends to experience diminished academic and/or social integration and may come to the conclusion that the costs (academic, social, emotional and/or financial) of persisting outweigh the benefits of persisting. At that point the individual withdraws.

In later work, Tinto has given some attention to financial reasons for student departure, but suggests they are often cited as 'ex post facto forms of rationalization which mask primary reasons for withdrawal' (Tinto 1993: 66).

Recently, Tinto's arguments have been criticised for their emphasis on the 'individual' and neglect of external factors including social, political and economic forces and the role of institutions themselves. Koen (2007) notes that many students in South Africa in the 1980s dropped out of university to participate in the political struggle against apartheid. Ben-Tsur (2007) considers the effect of compulsory military service on student retention in Israel. Goldrick-Rab (2006) explores social class differences. Abramson and Jones (2003: 148) point to the importance of institutional culture and urge institutions to 'accept the new realities of growth and diversity' and also recognise that study is only one aspect of a student's life.

There has also been growing recognition that many students 'stop out' rather than 'dropout' and do return to study at a later stage. Again, the reasons are complex and include (more prominently than in the literature on dropout per se) issues of SES and financial aid (DesJardins et al. 2006; Goldrick-Rab 2006; Herzog 2005; Johnson 2006; Porter 2004). In South Africa this phenomenon has also been identified and described by Walters and Koetsier (2006) in relation to working adults in higher

education who stop their studies temporarily for reasons related to personal, family, financial or work-related commitments.¹³

This chapter considers the issue of dropout and stop out in relation to South African higher education in general and then focuses on the case of UWC. The chapter begins with background to the DoE's concern with the issue of dropout before considering the findings of the Pathways Study at UWC. Where relevant, the findings are compared with those for SU, a historically advantaged white institution which is also located in the Western Cape. This comparison underscores the finding that financial reasons are a major cause of student dropout and need to be taken more seriously, at least in the case of South Africa. The research also challenges Tinto's integration model of dropout and argues that we need to consider the issue in relation to multiple social, political and economic contextual factors that affect but also go beyond the individual.

An institutional case study

The issue of student dropout has long been a concern at UWC. It is closely, but not exclusively, associated with its admission policies. In the late 1980s, the institution transformed itself from an apartheid construct for coloureds only into what came to be known as the intellectual home of the left, with a virtually open admissions policy; its numbers increased phenomenally from 10 661 in 1988 to a peak of 13 568 in 1998 (Cooper & Subotzky 2001). The latter figure was surpassed only five years later when, in 2003, its student numbers totalled 14 043. African students grew from a total of 1 398 in 1988 to 6 267 in 1998. More significantly, their proportion increased from 13% to 58% during this period, while the proportion of coloured students dropped from 82% to 36%. Many of the students who entered the university in this period were unable or refused to pay fees, but were allowed to return to the university because the institution was hoping that the new democratic government would rescue it and other HBIs from their mounting debt. This was not the case, and UWC was forced to exclude students who could not pay their fees. Academic results were withheld until the student's debt was cleared. Koen (2007) maintains that over the period 1993 to 1999, more than 7 600 students did not complete their qualifications at UWC for financial and academic reasons. He says that over this period, exclusions on academic grounds accounted for about one-third of 'forced' exclusions, while exclusions of students who owed money accounted for two-thirds.

To speak of 'forced' exclusions is not to exhaust the issue of student dropout. Koen (2007) notes that many undergraduate and postgraduate students also left voluntarily despite being in good academic standing. He points out that 27% of undergraduates and 12% of postgraduates dropped out in 1995 without completing their degrees. He bemoans the lack of data on student dropouts and says there are many unanswered questions, including the question of why financially well-off students in good academic standing who elected to study at UWC choose to leave the institution before completing their degrees.

A sharp drop in student enrolments around 1999 and 2000 led to the university opening its doors even wider, with a new policy of admitting students with a Senior Certificate, but without exemption, under certain conditions (called the 'senate discretionary' students). By 2001, however, the enrolment drop had proved to be a temporary phenomenon. Student numbers were above 10 000 again and growing. The university began to change its policy on student access. It was no longer prepared to carry students who did not pay their fees and there was a growing realisation that physical access did

13 In the 1980s these issues would have included political involvement.

not necessarily mean 'epistemological access' (UWC 2000). The university had an obligation to ensure 'success' as well as access.

The *Institutional Operating Plan* of 2004 (UWC 2004: 76) warned that the university had become 'much more selective in its intake'. By now, student numbers were higher than ever before and the institution could afford to 'admit only those students who [were] more likely to complete their course of study within the requisite timeframes'. The plan notes that one of the unintended consequences of this recruitment and selection process was a shift in the demographic profile of students – leading to a reduction in the proportion of African students.

By 2003, the proportion of coloured students had increased again to 49% while that of African students had dropped to 31%. Indian students had moved from 4% in 1998 to 9% and white students, who were consistently around 1% in the 1990s, were now about 2%.

The Student Retention and Graduate Destination Study at UWC

The HSRC Student Retention and Graduate Destination Study captures a particular moment in the history of UWC: 2002 was the year when students without matriculation exemption who were admitted to three-year programmes at the start of 2000 were due to graduate. At the same time, the circumstances that had forced the university to admit these students no longer applied. Student numbers were up and increasing rapidly. A new funding formula that rewards throughput and completion rather than student numbers per se was on the horizon (it was introduced in the 2004/05 financial year). The institution was now turning its attention increasingly to issues of retention and was beginning to look for students who would attain their degrees in minimum time.

In relation to other institutions in the study, UWC had the greatest proportion of graduate respondents in the low SES category (75%) and, with Pentech, the second lowest in the high SES category (both 9%). In comparison, SU had the lowest proportion of graduate respondents in the low status category (19%) and the highest in the high status category (49%).

UWC had the second-highest proportion of non-completer respondents in the low SES category (79% compared with 82% at UFH and UNorth). In the high status category for non-completers, it scored the same as UFH and UNorth. Only 6% of their non-completer respondents were in this category. In contrast, SU's proportion of non-completer respondents in the low SES category was 53% (second only to Wits, which scored 50% in this category). The proportion of non-completer respondents in the high SES category was 25% at Wits as well as at SU – ranking these institutions the highest in this category.

The relationship between SES and dropout is illustrated by the following figures from the DoE's Higher Education Management Information System. In 2002, 10 265 students were enrolled for the relevant qualifications at UWC. Of these, 1 327 (13%) fulfilled the requirements for a qualification, 7 113 (69%) continued with their studies in 2003, and 1 825 (18%) left the institution between 2002 and 2003.

By contrast, at SU, of the 13 168 students enrolled in 2002 in the relevant qualifications, 2 870 (22%) fulfilled the requirements for a qualification, 8 903 (68%) continued with their studies in 2003, and 1 395 (10%) left the institution between 2002 and 2003.

The reasons for departure were explored in the questionnaire which was sent to all the 2002 graduates and non-completers. In the case of UWC, 246 graduates and 257 non-completers responded, rendering response rates of 14% and 19% respectively.

The non-completer respondents were 64% African, 33% coloured, 2% Indian and 1% white. Forty-four per cent were over 25 years of age. Asked what language they spoke most at home, the biggest proportion said isiXhosa (45%), followed by Afrikaans (24%) and English (18%). There was a higher proportion of Africans among the non-completer respondents than in the non-completer survey population as a whole (65% compared with 47%) and a lower proportion of coloured respondents (33% compared with 47%). (This might indicate that the African group had more time on their hands to complete a questionnaire and this is confirmed by data on employment, which show that African non-completers had a lower employment rate than coloured non-completers.) There was also a slightly lower proportion of female than of male respondents (45% versus 55%).

The graduate respondents were fairly closely aligned with the survey population (60% female respondents compared with 62% female graduates as a whole; 56% Africans, 35% coloureds, 7% Indians and 2% whites compared with 54%, 38%, 7% and 2% respectively). The biggest proportion of the graduate respondents was English speaking (27%), followed by isiXhosa (26%) and Afrikaans (21%). Seventy-five per cent were over 25 years of age, indicating that many must have taken longer than the minimum amount of time to graduate.

Of the UWC non-completer survey population, 54% were in Humanities, 24% in combination programmes, 8% in Science, 7% in Education and 7% in Business, Commerce and Management (BCM). The non-completer respondents showed an even higher proportion in the Humanities (65%), compared with 18% in combination programmes, 8% in Science, 5% in Education and 4% in BCM.

Of the UWC graduate survey population, 32% were in Humanities, 18% in combination programmes, 17% in Science, 24% in Education and 9% in BCM. The graduate responses consisted of 33% in the Humanities, 13% in combination programmes, 15% in Science, 30% in Education and 9% in BCM.

The high proportions in the Humanities among the UWC non-completers reflect the findings elsewhere in the case study – that Humanities was not a first-choice field. This could be an explanation for their early departure. The over-representation of Humanities among the non-completer respondents also suggests that these students had more time on their hands after departure, which enabled them to complete the questionnaire. This is confirmed by the finding that there were very low employment rates in the Humanities (45% for non-completers and 66% for graduates). The questionnaire responses also showed a gap between students' choice of subjects to study when they were in Grade 12 and their actual enrolments. Non-completers showed dissatisfaction with both the institution and their final field of study. Asked why they did not study at the institution of their first choice, non-completers indicated that the predominant reason was 'I could not meet the admission requirements', followed by 'It was too expensive'. The highest number of responses was from students in the Humanities. In contrast, among graduates for whom UWC was not first choice, the major reason for not registering at their first-choice institution was 'It was too expensive'. However, not meeting the admission requirements came a close second.

Elsewhere, graduates indicated that 'Interest in the programme I studied' was the single highest reason contributing to their successful graduation.

Reasons for non-completers' leaving

Asked if they had been excluded from their institution, 68% of the non-completer respondents said they had been. Presumably the remaining 32% left voluntarily. Of those excluded, 40% said it was for financial reasons, 27% for academic reasons and 33% for academic and financial reasons combined. In comparison, only 47% of SU non-completer respondents said they had been excluded. Of these,

TABLE 4.1 *Factors contributing to students leaving UWC in 2002, in order of importance*

Variable	African	Coloured	Indian	White	Aggregated mean score
I did not have the funds to pay for my studies	3.9	3.7	2.7	2.5	3.8
I was failing some or all of my courses and realised I was unlikely to pass at the end of the year	2.8	2.7	3.7	1.5	2.8
I could not afford to spend three or four years on continuous study, so I left, planning to return to my studies at a later point	2.5	3.1	2.7	2.5	2.7
I was frustrated by the way the institution's administration dealt with students	2.5	2.7	3.0	3.0	2.6
I lost interest in the programme I was studying	2.4	2.2	3.3	2.0	2.4

Source: Unless otherwise indicated, the data in all tables in this chapter are derived from HSRC (2005)

52% were for academic reasons, 17% for financial reasons and 31% for financial and academic reasons combined.¹⁴

In the UWC case, when presented with a range of factors which might have contributed to their leaving the university and asked to rate these from 1 ('not at all') to 5 ('to a very large extent'), non-completer respondents gave the highest value by far to 'I did not have funds to pay for my studies'. This achieved a mean score of 3.8 and was rated highest by Africans. Coloureds also indicated they could not afford to pay for their studies, but they also suggested more strongly than any other group that they planned to return later. Indians rated academic reasons most highly and whites were most concerned by the way the administration dealt with students.

In contrast, at SU, non-completers ranked academic failure as the most important reason for leaving, followed by loss of interest in the programme being pursued. Financial difficulties came third.

As we see from Table 4.1, only the first variable – I did not have the funds to pay for my studies – scores above the mid-point (3) on the 5-point scale at the aggregate level, suggesting that it is the only variable that impacted on student attrition. At the race-disaggregated level, however, we see that *Africans and coloureds* were influenced by this variable, and that Indians were the only group whose dropout was influenced by the second variable – I was failing some or all of my courses and realised I was unlikely to pass at the end of the year.

By gender, the top five reasons for leaving for males were lack of funds (3.6), failing courses (2.5), very active social life (2.5), frustration with administration (2.4), and the need to stop out (2.4). Only the

14 At the presentation of the findings of this research to the management of UWC, the university's rector said it was a policy of the university that no student in sound academic standing should be excluded on financial grounds. The university would find the money necessary for such a student to continue. However, in interviews, other staff said the university does not advertise this fact and few students approach the administration with such a request.

first was significant. The top five reasons for females were lack of funds (3.9), need to stop out (3.1), frustrations with administration (2.8), lack of self-confidence (2.4), and battling to learn all the new terminology and think in the chosen field of study (2.4). Again, only the first is significant, the need to stop out (3.1) carrying little weight by virtue of its middling score. These results indicate that financial difficulties were even more of a concern for female students than for males.

Employment after leaving/graduating

Three years after leaving UWC, 126 or 49% of the 257 non-completers were employed. A total of 75% of the Indian, 61% of the coloured but only 42% of the African non-completers had found jobs. There were only two white respondents and both had been employed. Male non-completers were more likely to have found jobs than female non-completers – 51% compared with 47%. The graduates achieved a much higher employment rate than the non-completers: after three years, 197 of the 246 graduates had found jobs. The employment rate for African graduates was almost three-quarters higher than that for African non-completers, and coloured graduates about one-half higher. Whites still had the highest rates (100%) – but again, their numbers were very small (four respondents). Coloured graduates achieved a 93% employment rate and Africans 72%. Only Indians were less likely to be employed after three years if they were graduates as opposed to non-completers (71% compared with 75%).

Graduating also had significant financial benefits for the individuals concerned. Asked how much they earned per month before deductions, 129 non-completers responded. Of these, the majority (84, or 65%) were earning R3 200 or below per month, 43 (33%) were earning between R3 201 and R12 800, and two (2%) between R12 801 and R25 600. None were earning above R25 600. Of the 197 graduates who responded to this question, only 32 (16%) were earning R3 200 or below. The majority (146, or 74%) were earning between R3 200 and R12 800. Nine (5%) were earning between R12 801 and R25 600 and 10 (5%) above R25 600.

Socio-economic background

Given the obvious benefits of graduating, it is more important than ever to consider why some students do not succeed in attaining their qualification. This section provides a detailed analysis of socio-economic background. Surprisingly, Table 4.2 shows little difference between the education levels of the parents of non-completers and graduates. Only 13% of fathers/male guardians and 10% of mothers/female guardians of non-completers had a tertiary education compared with 13% and 11%

TABLE 4.2 *Education level of parents/guardians of UWC non-completers and graduates, 2002*

Education level	Father/male guardian				Mother/female guardian			
	Non-completers		Graduates		Non-completers		Graduates	
	N	%	N	%	N	%	N	%
No formal education	31	15	33	15	33	13	32	13
Grade 7 or less	50	24	61	28	72	29	73	30
Some secondary	45	22	43	20	79	31	69	29
Matriculation	27	13	29	13	27	11	24	10
Technical college	7	3	8	4	9	4	12	5
Tertiary	26	13	29	13	25	10	27	11
Unsure	20	10	15	7	7	2	5	2
Total	206	100	218	100	252	100	242	100

TABLE 4.3 *Employment status of parents/guardians of UWC non-completers and graduates, 2002*

Employment status	Father/male guardian				Mother/female guardian			
	Non-completers		Graduates		Non-completers		Graduates	
	N	%	N	%	N	%	N	%
Working for company, organisation or someone else	75	44	58	35	67	28	49	23
Self-employed	18	10	21	13	15	6	18	8
Unemployed	14	8	12	8	59	25	48	23
Domestic worker/gardener	0	0	3	2	35	15	13	6
Informal sector (vendor/hawker)	0	0	2	1	1	0	2	1
Subsistence farmer	1	0	2	1	1	0	2	1
Retired/on pension	49	29	61	37	53	23	77	36
Don't know	15	9	7	3	4	3	4	2
Total	172	100	166	100	235	100	213	100

of graduate respondents. In both groups, 15% of fathers/male guardians and 13% of mothers/female guardians had no education.

While one might think that graduates would come from a more financially secure background, employment details for parents and guardians (Table 4.3) showed the graduates had a higher proportion of parents/guardians who were retired or on pension, the same proportion of fathers/male guardians who were unemployed and an only slightly lower proportion of unemployed mothers/female guardians (23% compared with 25%). The biggest discrepancy between non-completers and graduates was on the option 'working for company, organisation or someone else'. Nine per cent more non-completers' fathers/male guardians were employed in this way (44% compared with 35%) as were 5% more non-completers' mothers/female guardians (28% compared with 23%). There were also a greater proportion of non-completer respondents who did not know their fathers'/male guardians' employment status (9% versus 3%).

Analysis of responses to questions about parental income showed that the graduates had little advantage over the non-completers (Table 4.4). In both groups, a high proportion of fathers/male guardians (13% for non-completers and 11% for graduates) and an even higher proportion of mothers/female guardians (24% and 28% respectively) had no income.

In both groups, the greatest proportion was earning under R3 200 (41% of non-completers' fathers/male guardians and 39% of graduates' fathers/male guardians were in this category, as well as 53% of non-completers' mothers/female guardians and 44% of graduates' mothers/female guardians). High proportions of respondents (particularly non-completers) did not know their father's/male guardian's income: one-quarter of non-completer respondents compared with one-fifth of graduates. This finding, combined with the high proportion of non-completers who did not know their father's/male guardian's type of employment, indicates the possible absence of a father figure in the homes of the non-completers.

TABLE 4.4 *Income of parents/guardians of UWC non-completers and graduates, 2002*

Income	Fathers/male guardians				Mothers/female guardians			
	Non-completers		Graduates		Non-completers		Graduates	
	N	%	N	%	N	%	N	%
No income	21	13	17	11	55	24	59	28
Under R3 200	67	41	62	39	121	53	93	44
R3 201–R6 400	22	13	21	13	15	6	22	10
R6 401–R12 800	9	5	16	10	8	3	13	6
R12 801 + above	5	3	10	6	2	1	2	1
Don't know	40	25	32	21	28	13	23	11
Total	164	100	158	100	229	100	212	100

Why did some students graduate while others did not?

Given that the graduates came from similarly impoverished backgrounds, the question of why they completed when others did not is an important one. Analysis of responses to questions about sources of income for fees shows that graduates were less reliant on their parents or guardians for financial support: only a quarter of graduates said they received support from their parents/guardians compared with 42% of non-completers (Table 4.5). A higher proportion of graduates had funding from NSFAS (26% compared with 21% of the non-completers). A much higher proportion had bursaries (25% compared with 8%).

Graduates were also less reliant on parents and guardians for finances to cover living expenses (36% compared with 50%). Interestingly, they were also more likely to have jobs. Eighteen per cent of graduates compared with 9% of non-completers had full-time jobs while studying, 20% compared with 14% had part-time jobs, and 9% compared with 6% had odd jobs (Table 4.6).

Another significant difference between non-completers and graduates was having a matriculation with exemption or not. A higher proportion of graduates had attained their Senior Certificate with exemption (62%) than had non-completers (39%). This indicates that the 'senate discretionary' students admitted in 2000 had greater difficulties passing their degrees than those who met the usual entrance requirements. This finding also confirmed what academics at UWC said in interviews: matriculation exemption is the best available indicator of future success (second only to a foreign matriculation). Furthermore, non-completers showed higher failure rates in the three Senior Certificate subjects which

TABLE 4.5 *Source of income for fees for UWC non-completers and graduates in 2002*

Funding source	Non-completers		Graduates	
	N	%	N	%
NSFAS	67	21	26	26
Parents/guardians	133	42	25	25
Bank loan	8	3	3	3
Bursary	27	8	25	25
Scholarship	6	2	3	3
Other	78	24	0	18
Total	319	100	82	100

TABLE 4.6 *Financial support for living expenses of UWC non-completers and graduates, 2002*

Funding source	Non-completers		Graduates	
	N	%	N	%
Parents/guardians	155	50	111	36
The money I received for my studies covered by my living expenses	24	8	21	7
Friends/relatives other than parents/guardians	9	3	11	4
Odd jobs	19	6	27	9
Part-time job	43	14	62	20
Full-time job	28	9	56	18
Other	29	10	23	6
Total	307	100	311	100

were regarded as important indicators of potential for higher education study (English, Mathematics and Physical Science) and fewer were English speaking. Academics and administrators who were interviewed also pointed to less tangible differences. Some students were just as impoverished as others, they said, but had been brought up in such a way that they were more motivated, resilient and focused.

Stop out rather than dropout

During interviews at UWC, some academics argued for a reconceptualisation of dropout to recognise favourably those who are forced to stop out (mostly to earn money) but who intend to return. The importance of this trend was confirmed in our research, although the picture is not entirely clear. Numbers of responses to questions concerning integration differed markedly from question to question, suggesting that the trajectory post-departure is much more complex than our research questions were able to capture.

Out of 237 responses, 92 (39%) said they had re-registered at a higher education institution after 2002 and 145 (61%) said they had not. A total of 95 gave further details of registration. Of these, 6 (6%) had re-registered in the same year, 33 (35%) in 2003, 43 (45%) in 2004 and 13 (14%) in 2005.

A total of 103 gave details of the institution at which they had re-registered. The highest proportion, 33 (32%), had re-registered at UWC; 27 (26%) had gone to a private institution; 16 (15%) to the University of South Africa; 11 (11%) to Cape Technikon; 3 (3%) to Pentech; 2 each (4%) to Rand Afrikaans University and Port Elizabeth Tech; and one each (9%) to Potchefstroom University, Rhodes University, the University of Transkei, UCT, Port Elizabeth University, Wits, Vista University, Technikon SA and Durban Institute of Technology.

Asked if the qualification for which they had registered was different from the one they were studying in 2002, 61 out of 102 respondents (60%) said yes, and 41 (40%) no.

Out of 185 responses, the top two reasons for re-registration concerned issues of finance or employability. The single most important reason for re-registration was the realisation that completing the qualification for which they had been studying would make them more employable (34 responses, or 18%). This was followed by 'My parents/relatives decided to fund my further studies' (25, or 14%). 'A

family member persuaded me to continue with my studies' and 'I realised I could earn more money by obtaining a qualification from a higher education institution' each scored 24 (or 13%).

Out of 101 respondents who had details of the type of qualification for which they had re-registered, about two-thirds indicated a diploma or certificate and one-third a degree. This was in inverse proportion to registrations at the time of their departure, when two-thirds had been registered for degrees and one-third for diplomas. The suggestion is that students 'downscale' their academic ambitions after dropout. Whether this is for academic or financial reasons (the lower qualifications take less time) is not clear. This is one of the questions that should be pursued further in qualitative research.

The views of academics and administrators at UWC

All the UWC academics and administrators who were interviewed for the Student Retention and Graduate Destination Study mentioned poverty as a major reason why students leave UWC prematurely. For some it was the single greatest issue. Administrators pointed out that although many students received NSFAS funding, a number of factors made it insufficient to cover all their needs. First, although NSFAS allocations were announced at the end of the preceding year, the first tranche to institutions was only released on 1 April, the beginning of the government's fiscal year. Many institutions, particularly the HBIs, experienced cash-flow problems in the first quarter of the year and consequently demanded an upfront payment from students (DoE 2005b). At UWC, non-resident students were required to pay R3 000 and resident students R3 500, which equated to the monthly income of the greatest proportion of the non-completers' parents/guardians (see Table 4.4).

Staff in the Financial Aid Office also reported that this payment caused a great deal of distress for some students. Although there was a (NSFAS-defined) means test to establish whether a student qualified for NSFAS funding, there was no test to determine whether a student had the means to pay the upfront amount. Some students genuinely did not have the money to pay even the R580 portion of this amount, which was for registration.

A dean quoted examples of excellent matriculants who would not have been able to come to the university and others who were already students and had passed all their courses who would not have been able to return had he (the dean) not been able to obtain for them the R580 fee, through pleading their case to the Student Financial Aid Office.

The second major concern was the amount of the loan/bursary itself. Because the demand for financial aid was far greater than the supply, institutions tended to give students less than the full amount they needed in order to spread the support as far as possible. The 90 000-odd students nationally who received NSFAS aid in 2003/04 were funded at 75% to 80% of the amount determined by the means test (DoE 2005a: 29). At UWC, even the fullest loan/bursary was unlikely to cover more than accommodation and food. The extras which a student needs – for example, tampons, toothpaste and other toiletries; photocopying, printing and other study-related expenses; transport money – had to come from alternative sources of income. Some students were also expected to support other family members. The senior manager who identified 'under-preparedness' as one of two major reasons for dropout indicated that the anxiety experienced by students who were struggling to sustain themselves from one month to the next was the other major reason for dropout.

Several interviewees spoke of students who were so poor they often went hungry. One said that because of the stigma associated with 'food insecurity', they often tried to conceal this fact. Students who wished to be supportive had to be careful not to offend the dignity of the hungry person when offering to share their food. It was easier for poor students to ask to share other items – for example, toiletries – than to admit they had no food.

Another reason for dropout mentioned by several of the senior staff members was HIV/AIDS. They spoke of students who had told them they were leaving because their parents had died of HIV/AIDS, their siblings needed their support, or they themselves were HIV-positive and had lost interest in their studies. Strangely, very few of the non-completer responses indicated that their own ill health, or that of their relatives, had anything to do with their early departure. This trend might be related to the stigma attached to the disease and would support the experience of the HIV/AIDS programme on campus, which found that even the students attending support groups and receiving assistance from the programme were not prepared to disclose their status, primarily because they feared the information might leak back to their communities. It is also possible that the effects of HIV/AIDS on a student could have presented themselves most prominently in financial problems. The trend might also have been influenced by the fact that the questionnaire did not mention HIV/AIDS specifically, but referred rather to 'ill health'.

Tinto's view of student finances as a reason for premature departure

In the second edition of *Leaving College: Rethinking the Causes and Cures of Student Attrition*, Tinto (1993: 65) argues that although finances are 'very commonly cited by researchers and withdrawing students alike as important reasons for leaving, the evidence regarding the impact of finances upon persistence leads one to conclude that the issue is much more complex than commonly assumed'. He claims that finances tend to impact most commonly before, or at the point of entry into, higher education, influencing decisions on whether to attend college in the first place, how much education to seek, and choice of a specific college.

Financial considerations may also lead individuals to obtain part-time work while attending college. This may inhibit integration because students' time for interacting with peers and faculty will be constrained.

Tinto concedes that beyond entry, finances may influence departure directly. Short-term changes in financial situation may prevent the individual from meeting the minimum financial requirements of institutional participation, especially likely among 'the disadvantaged' or 'children of less affluent families' (1993: 66). Such departures are more likely to occur in the early stages of the college career when the prospect of completion is quite remote.

Tinto emphasises that cost is not an isolated factor:

Though there undoubtedly are many students, primarily the disadvantaged, for whom the question of finances is absolutely central to decisions regarding continuance, for most students the question of finances occurs within the broader context of costs generally and of the character of their educational experience within a specific institution. (1993: 66)

As noted earlier, Tinto also warns that the citing of financial problems as a reason for departure is often '[an] ex post facto [form] of rationalization which mask[s] primary reasons for their withdrawal':

Students who see their college experiences as rewarding and/or as being directly tied to their adult futures will continue to bear great financial burdens and accept considerable short-term debt in order to complete a degree programme. When college is seen as irrelevant and/or as unrewarding, however, even the slightest financial pressure will lead to withdrawal. (1993: 67)

While it is indeed likely that some of the UWC respondents in the Student Retention and Graduate Destination Study did give undue emphasis to financial constraints as reasons for departure, their personal backgrounds suggest that finances were a genuinely important factor. Many came from exceptionally poor backgrounds and, as Tinto himself concedes, short-term changes in circumstances of the poor and disadvantaged could well necessitate the student's departure from university, especially in the early stages of his or her programme.

Other factors given as reasons for departure – including academic non-performance – could also be seen as being related to issues of poverty, as the under-preparedness of many students is the result of their upbringing in under-resourced schools in impoverished communities.

It is likely that additional factors – such as administrative frustrations or losing interest – tip the balance and render the financial constraints even more important than might be the case if the administration were more efficient and the course more relevant and interesting.

If one looks beyond the top five factors contributing to premature departure, one sees that students cited as next in importance the lack of an induction programme, lack of academic support, a 'sink or swim' mentality at the institution, and no space to study in peace and quiet – all factors that the institution might address in order to ensure greater retention. But students also accorded the same mean score to two apparently contradictory factors that pertained directly to social integration: lack of self-confidence, on the one hand, and too active a social life, on the other. It appears that both under- and over-participation in social activities could also contribute to student departure.

Conclusion

The Student Retention and Graduate Destination Study research, both at UWC and at the other six institutions in the study, shows that the vicious cycle of financial disadvantage and academic under-performance which originated under apartheid still prevails. The UWC case study suggests that many of the students who leave UWC prematurely do so because they cannot afford to stay and that, in general, student academic under-performance and dropout should not be seen in isolation from personal and parental financial resources. The study indicates that, in the South African context at any rate, lack of finances is a far more compelling reason for early departure than Tinto has suggested is usually the case. The study also confirms the critique of the integrationist theory of student dropout, which places the reasons for dropout primarily on the individual student. This study points to the need to contextualise studies of dropout within the social, political and economic contexts of the institutions involved. In South Africa, this context includes the effects of historical dis/advantage and the widespread prevalence of HIV/AIDS. Further research on dropout in South Africa should address the question of HIV/AIDS more directly.

The research also indicates the importance of the concept of 'stop out' for studies of student retention. Many students indicated that they wished to return to study or had already re-registered, whether at UWC or another institution. Our analysis suggests that trajectories post-departure are quite complex, with students re-registering in different years, for different reasons and at many different institutions. There were indications that students downscaled their academic ambitions, opting for lower level courses on re-registration. Further research with a strong qualitative component is required to capture the complexities of individual pathways after departure.

References

- Abramson M & Jones P (2003) Tinto's model revisited. In L Thomas, M Cooper & J Quinn (eds) *Improving completion rates among disadvantaged students*. Stoke on Trent, UK & Sterling, USA: Trentham Books
- Ben-Tsur D (2007) Affairs of state and student retention: An exploratory study of the factors that impact student retention in a politically turbulent region. *British Journal of Sociology of Education* 28(3): 317–332
- Braxton JM, Hirschy AS & McClendon SA (2004) Understanding and reducing college student departure. *ASHE-ERIC Higher Education Report* 30(3). California: Jossey-Bass
- Cooper D & Subotzky G (2001) *The skewed revolution*. Bellville, Cape Town: Education Policy Unit
- DesJardins SL, Ahlburg DA & McCall BP (2006) The effects of interrupted enrollment on graduation from college: Racial, income and ability differences. *Economics of Education Review* 25(6): 575–590
- DoE (Department of Education) (2005a) *Review of the National Student Financial Aid Scheme (NSFAS)*. Pretoria: Department of Education
- DoE (2005b) *Student enrolment planning in public higher education*. Pretoria: Department of Education
- Goldrick-Rab S (2006) Following their every move: An investigation of social-class differences in college pathways. *Sociology of Education* 79(1): 61–80
- Herzog S (2005) Measuring determinants of student return vs. dropout/stop out vs. transfer: A first-to-second-year analysis of new freshmen. *Research in Higher Education* 46(8): 883–928
- HSRC (Human Sciences Research Council) (2005) Data-set for the Student Retention and Graduate Destination Study. Pretoria: Human Sciences Research Council
- Johnson I (2006) Analysis of stopout behaviour at a public research university: The Multi-Spell Discrete-Timen Approach. *Research in Higher Education* 47(8): 905–934
- Koen C (2007) *Postgraduate student retention and success: A South African case study*. Cape Town: HSRC Press
- Porter SR (2004) Understanding retention outcomes: Using multiple data sources to distinguish between dropouts, stop outs and transfer-outs. *Journal of College Student Retention* 5(1): 53–70
- Tinto V (1993) *Leaving college: Rethinking the causes and cures of student attrition* (second edition). Chicago & London: University of Chicago Press
- UWC (University of the Western Cape) (2000) *Strategic plan 2001–2005*. 21 November. Bellville, Cape Town: University of the Western Cape
- UWC (2004) *Institutional operating plan*. November. Bellville, Cape Town: University of the Western Cape
- Walters S & Koetsier J (2006) Working adults learning in South African higher education. *Perspectives in Education* 24(3): 97–108
- Yorke M (1999) *Leaving early: Undergraduate non-completion in higher education*. London: Falmer Press

Weighing success and diversity in the balance at Stellenbosch University

Trish Gibbon

Introduction

Unlike any other South African university in the post-1994 era, the student body of SU has remained predominantly white and Afrikaans. The relatively homogeneous nature of its students spans factors of race, language, culture, education and financial well-being. It is, in a sense, an extreme case in the South African higher education landscape, a last bastion of white dominance, an anomaly 14 years after the move to majority rule, and to some, a provocation. But, as this chapter will argue, precisely because it is an extreme case, it reveals with great clarity the high correlation between the achievement of success in tertiary studies on the one hand, and levels of parental education, family income and academic preparedness – in terms of good, or at least adequate, schooling – on the other. This level of success has secured the university's solid academic reputation, a success built on the basis of a mainly white student body. It would be misleading, however, to suggest that the university is content with its present racial profile and has done nothing to change it, but why then does it manifest such limited racial diversity? The questions that beg to be asked are whether success for first degree students is related to the homogeneous nature of the student body or not, and what the effect would be of significant diversification of the undergraduate student intake.

In the context of a growing black middle class in South Africa, the factors of relatively privileged schooling and good economic circumstances are no longer the exclusive preserve of whites. But this group is small, and competition among the universities for relatively affluent, academically successful black students is intense. A number of factors may come into play for such students when it comes to selecting a university for tertiary studies. Speculation suggests it could be the predominantly Afrikaans medium of instruction at undergraduate level and other aspects of 'institutional culture' that make SU a less attractive option than some of its English-medium counterparts. As with all universities in South Africa, the majority of black students in the pool from which SU is able to draw are likely to be disadvantaged both economically and academically. Nonetheless, the institution has been making a concerted effort to effect diversification of the student body. This chapter will draw on the results of the HSRC Student Retention and Graduate Destination Study case study to examine why these initiatives have produced disappointingly limited results and what options the university has to confront in relation to improving access for a more diverse range of first-entry students.

The analysis hinges on a number of internal and external factors, including the dynamics that shape the apparently 'natural' market of Afrikaans-speaking coloured students, the constrained financial resources of potential students from disadvantaged communities and the language policy of the university. In other words, the analysis will show that, despite a variety of access policies and initiatives designed to promote diversity, SU remains relatively 'inaccessible' to undergraduate black students, especially African students.

The university faces the dilemma that the active pursuit of student diversity can only be bought at the price of high financial investment and almost inevitable decline in current levels of academic success. A more diverse student body is likely to be both financially and academically needy. Results of the HSRC study, especially the evidence produced in relation to the circumstances and performance of existing coloured students at SU, will be used as an indicator of the nature of the challenges the institution is likely to face in its pursuit of racial diversity.

Before considering those issues, however, we must first examine in greater detail what is meant by 'success' in the case of SU.

Measuring success at Stellenbosch University

In terms of the HSRC study, SU emerges as a highly successful institution with a graduation rate exceeding the average rate for the university sector by approximately eight percentage points in 2003, as shown in Table 5.1.

A word of caution must be sounded here. As calculated in the Higher Education Management Information System (HEMIS), graduation rates are highly vulnerable to changes in enrolment, and therefore not as accurate as graduation rates calculated in cohort studies. University enrolment overall grew by a headcount total of 100 381, or 26%, over this period (2000–03), which implies that the graduation rate reflected above is probably lower than the rate that would be shown in cohort studies. By contrast, enrolment at SU grew by a headcount of only 1 153, or 6%, and in the context of such slow growth, the graduation rate is probably a fair reflection of reality. Nonetheless, even taking into account the artificially depressed graduation rates for the university sector as a whole, SU performs very well in comparison with the national system.

Given its enrolment patterns, graduation at SU is predictably dominated by whites although the number of African graduates grew by a remarkable 60% from 2000–03, but this was off a very small base and most of these were at postgraduate level (Table 5.2).

Coloured graduates grew by 35% while Indian graduates remained static except for a sudden decline in 2002 (Table 5.3). White graduate numbers grew by about 8% and continued to take the lion's share of total graduates, only losing about 3% of share over the four years. Most of that was taken up by the increase in the African share and a small increase in the coloured share. At both enrolment and graduate level, however, SU remains overwhelmingly white.

TABLE 5.1 *Headcount enrolment and graduation rates, 2000–03*

Year	Universities		Stellenbosch University	
	Headcount enrolment	Graduation rate	Headcount enrolment	Graduation rate
2000	387 359	17.9	20 245	22.6
2001	428 648	17.1	20 557	23.0
2002	460 470	16.4	21 395	23.7
2003	487 740	16.7	21 398	24.6

Source: The data in all tables in this chapter are sourced from DoE (2007)

TABLE 5.2 *Headcount of Stellenbosch University graduates, by race, 2000–03*

Year	African	Coloured	Indian	White	Unknown race	Total
2000	438	361	106	3 679	0	4 584
2001	527	414	109	3 684	0	4 734
2002	702	444	72	3 861	0	5 079
2003	702	489	109	3 964	0	5 264

In terms of gender, female student enrolment at SU consistently exceeded male student enrolment by 4–6% over the four-year period but this difference is less than the gender difference nationally, which averages at 12% higher female enrolments than male. Gender proportions at graduation correspond closely to the enrolment proportions at SU, but with the number of female graduates growing at a faster rate than male. In 2002, men took 46% of the share and women 54%. This is in line with a national trend that sees women academically outperforming men.

In the university sector as a whole, the distribution of enrolments over the broad fields of study of Humanities, BCM and SET was in the ratio of 55:22:23 for the survey year 2002. The comparable distribution of enrolments at SU in 2002 was 50:13:37. As a university, SU has strong enrolments in both the Humanities and Science fields, while Business and Commerce is fairly small, but its distribution of enrolments still comes closer to the target set in the *National Plan for Higher Education* (DoE 2001) of 40:30:30 than the national system. For 2002, graduation ratios across these fields of study in the national university system were 57:20:22, in other words, higher than enrolment ratios in the Humanities, but lower in the fields of Business and Commerce, and the Sciences. At SU, the graduation ratios were 49:18:33.

Stellenbosch also performs strongly at postgraduate level with 59% of students enrolled for undergraduate qualifications in 2002 and 41% at postgraduate level, as compared to the national university system which recorded 76% of enrolments at undergraduate level and only 24% at postgraduate level. When it comes to the percentage distribution of graduates, the national university system reflects 63% of graduates at undergraduate level in 2002 and 37% at postgraduate level. At SU, 48% of graduates were at undergraduate level and 52% were postgraduates.¹⁵ In 2001, SU had the fourth highest research output of all universities in South Africa (Cloete & Galant 2005).

TABLE 5.3 *Percentage distribution of Stellenbosch University graduates, by race, 2000–03*

Year	African	Coloured	Indian	White	Unknown race	Total
2000	9.5	7.9	2.3	80.3	0.0	100
2001	11.1	8.8	2.3	77.8	0.0	100
2002	13.8	8.8	1.4	76.0	0.0	100
2003	13.3	9.3	2.1	75.3	0.0	100
2000–03	12.0	8.8	2.0	77.2	0.0	100

¹⁵ With the exception of the PhD, graduation rates for postgraduate students are generally higher than for undergraduates in all universities. Student selection and admission at this level requires a proven level of academic competency and success.

TABLE 5.4 *Student graduation, retention and completion, Stellenbosch University and total survey population (%)*

Institution	Students who graduated	Students who continued with their studies in 2003	Students who left between 2002 and 2003
Stellenbosch University	22	68	11
Total survey population	14	65	21

When the focus is sharpened to look at the students registered for three- or four-year qualifications, the view is just as positive. Table 5.4 shows SU in comparison to all seven of the institutions in the HSRC study.

Considering that the graduation rate of 22% for SU as a whole is considerably higher than the norm of 16% for universities in 2002, it is to be expected that the graduation rate in relevant (three- and four-year) qualifications would exceed that of the survey population, which it does by the same margin of 8%. The percentage of students continuing with their studies at SU is also 3% higher than those in the survey population, and only 11% of this institutional group were non-completers as compared to 21% in the survey population. In other words, SU has a high level of success in retaining and graduating students in this category when compared to the total survey population. But what is it that makes for this success?

Success factors

Institutional contribution

Academic support

Stellenbosch has an extensive range of policies and practices to support students once they enter the university. A number of Centres for Academic Support are accommodated in refurbished houses on campus within easy reach of all students. They include the Centre for Prospective Students, the Centre for Teaching and Learning, the Centre for Student Counselling and Development and the Language Centre, all of which provide different kinds of support to staff and students. Faculties are expected to work closely with the staff in these centres, particularly in providing support for students who may be 'at risk'.

The Centre for Prospective Students conducts the university's Access Test and, on the basis of results, advises students whether they should be enrolling for extended degree programmes or registering for some other form of academic support. In four-year qualifications, extended degree programmes follow a model of spreading the first two years of study over three years, and supplementing mainstream courses with extra foundational courses in, for example, language, academic literacy and computer usage. How far academic support should be extended is still debated, but there is consensus that students should be independent by their final year of study.

The Centre is also responsible for coordinating the mentor and tutor systems. Tutors are appointed from among senior students for specific subjects. Mentors play a role that extends beyond subject support (this is discussed again later). Mentor and tutor support is offered to 'at risk' students, including those on extended degree programmes.

In addition to the Access Test, SU has also attempted to implement an Early Warning System to identify students who may be at risk on the basis of their performance in tests and written assignments in the first six to eight weeks of study. They would also be advised about the support options available to them, including transfer into an extended degree programme. The Management Information Branch has the capacity to calculate within days of completion the pass rate for every module, including details such as how many dropped out, how many wrote the exam, and how many passed or failed. This kind of tracking can also be done for a number of years to show patterns and reveal 'problem' modules. The Deputy Vice-Chancellor: Academic will then sit down with deans to discuss remedies. An online Information Cafeteria also enables the Management Information Branch to track how many people are logging on in order to access and use this kind of information. However, while the technology is available, academics are underutilising the facility. In interviews, the opinion was expressed that academics are still relatively unaccustomed to analysing information and results of this kind or using it to shape their own practice.

The tracking and monitoring of student progress is fairly uneven across the faculties. In the Education Faculty, where numbers are small, it has been possible to monitor the success rates of students in all modules, and even to track class attendance. In the Faculty of Economics and Commerce, mid-term tests for 1 500 first-year students posed a major logistical problem requiring a variety of dates, time slots and venues to accommodate students with timetable clashes. Under those circumstances, it was almost impossible to activate an early warning system within the first six to eight weeks of term. In Economics, this problem was largely overcome through the use of electronic tutorials. Students could not progress to the next level without successfully completing the one before. Students who were identified as being 'at risk' would be invited by letter to attend tutorials. The challenge, initially, was to get them in, but once they entered the programme it was often difficult to get them out. There was, however, no tracking of the success of the support system. While formal tracking was still being put in place in the Science Faculty, the dean is able to access the profile of students immediately and students' progress in extended degree programmes and in mentor and tutor programmes is tracked.

The idea of a First Year Academy with the objective of enhancing student success was discussed in the 2005 interviews conducted as part of the HSRC study and its first phase was implemented in 2007. This was to be a cross-faculty 'academy' run by an executive director with the express intention of looking after the interests of first-year students in every respect. Students would be taught by the best teachers from every faculty, who in turn would work closely with academic support staff. An assessment after six weeks would produce two streams: students who could enter the minimum-time programme, and students who would follow an enriched degree programme. This is a fairly radical proposal because, in effect, it makes the extended degree programme the norm from which students may then 'perform' out into the minimum-time programme.

An institutional assessment policy requires formal feedback from students in all faculties as part of staff appraisal. External evaluation of departments occurs every five years and information from these sources is used to improve courses and delivery.

The Centre for Teaching and Learning also provides for staff development. The PRONTAK programme, for example, teaches good classroom and assessment practices for new staff, including how to set demanding conceptual problems that do not require simple right or wrong answers or instant recall of learned material.

Financial support

As part of the academic support plan, the university is looking at ways to provide financial support for students on extended degree programmes. Resistance to enrolment in extended degree programmes is often related to financial considerations. The head of the Centres for Academic Support commented that the institution has to work consistently to build up funds for disadvantaged students who suffer severe financial constraints. An example of where this has worked well is the hugely successful merit bursary scheme through which some of the best black students have been recruited. Conversely, students without adequate resources become high risk.

Language

The Language Centre, established in 2002, provides a number of facilities and services to staff and students, including writing laboratories and courses for language acquisition and academic literacy. Credit-bearing language modules in English and Afrikaans are offered in the faculties at three levels: beginner, second language and first language (mother tongue). Courses in isiXhosa are offered to staff and students (all senior managers have been required to take these courses) and the isiXhosa unit is working on developing isiXhosa as an academic language.

In terms of the Language Policy and Plan, only one faculty, Humanities, has elected to implement bilingual instruction (the T-option) with the specific intention of making access easier for black students. This choice has not been without contention. All other faculties follow the default Afrikaans-as-the-medium-of-instruction model at undergraduate level. Nonetheless, lecture notes and other materials are often made available in English. Parallel-medium instruction is also offered in some courses in Engineering and the Health Sciences, where numbers permit.

Institutional culture

Although the mentor and tutor programme is aimed primarily at academic support, it does much more than that. Senior students who are appointed as mentors are allocated up to six students each and are charged with the responsibility of helping them to integrate successfully, socially and culturally, into campus life. An advisory system involving senior students also extends into residences and private student wards.

In terms of accommodation, 40% of beds in residences must now be made available to first-year students, and where places in residence were previously reserved for students with top results from schools, places are now open to students with lower levels of achievement.

Student profiles: What do students bring to the institution?

In this section, results from the HSRC case study will be used to show that the high level of success at SU in terms of retention, throughput and graduation is due in large part to the fact that the majority of its white students are still advantaged over other groups in terms of three critical factors that establish a foundation for success in tertiary studies: good secondary schooling, parental/family levels of education, and parental incomes. Most white students at SU also have Afrikaans – the medium of instruction of the university – as their home language. These observations are in no way meant to impugn the high quality of the teaching and learning offered at SU, but to draw attention to the fact that the majority of its students enter the university with an established educational and social platform that enables them to derive the highest benefits from what is on offer.

The following section draws on data from the results of the survey questionnaire. A total of 2 870 students registered for relevant qualifications at SU and graduated in 2002. Only 338 of those responded to the survey questionnaire, giving a response rate of 12%, which is 3% lower than the average response rate for the whole survey. Addresses to which questionnaires were sent were those given by students at the time of leaving the university or graduating, and as a result, many, especially those who had emigrated, were not in the response group. White students were marginally under-represented in the sample, but still constituted an overwhelming majority, while women were substantially over-represented in the survey response group. This means that the data come from a small and fairly skewed sample, and the analysis which follows can only be tentative and impressionistic. Where possible, any conclusions drawn will be corroborated by reference to the HEMIS data above. It is also apparent from the data that respondents did not complete all sections of the questionnaire, so results are not always based on a total of 338 responses.

Schooling and the Senior Certificate Examination

Most graduate respondents (93%) attended public schools and most of these were city, town or suburban schools. Ninety-six per cent said they wrote the Senior Certificate Examination (SCE). White and coloured respondents mainly attended city, town or suburban schools – 98% and 91% respectively. Among African respondents, 35% came from city, town or suburban schools and the majority attended rural schools (65%).

In relation to school subjects chosen for matriculation, 87% said they had chosen their subjects; the remainder were steered, firstly, by the subjects offered by the school and secondly, by the marks they achieved. Well over half the group (57%) did not choose school subjects with a career in mind and rated interest in the subjects as the most significant factor. Nonetheless, along with their performance in these subjects, the job opportunities that they could lead to were considered the next most important factor influencing their decisions. Responses indicated that many had received the advice of internal (122) or external (54) guidance counsellors and a relatively small number had written aptitude tests (56), but 135 claimed that they had not received guidance in any of these forms.

Achievement in the SCE among the graduate respondent group was high. Of this group, 285 passed the SCE with endorsement. One hundred and forty-nine achieved merit passes and 111 achieved distinctions. A total of 450 distinctions were shared among whites (426) and coloureds (24).

On the whole, gender differences at subject level were not marked, but racial differences were significant, particularly in relation to access to and achievement in Maths and Science. Only 7 of the 21 African respondents wrote Maths in the SCE and all achieved a D symbol or less. The same number wrote Physical Science; one of these achieved a B, with the rest achieving D or less. By contrast, 25 of the 29 coloured respondents wrote Maths, with 15 achieving a C symbol or higher, including six distinctions. Twenty-two wrote Physical Science and 9 of these achieved a C or higher. Among white respondents, 239 wrote Maths and 193 of these achieved a C or higher, with 78 distinctions. A hundred and eighty-four wrote Physical Science, with 141 achieving a C or higher and 29 distinctions.

Parental level of education and income

Most of the graduate respondents were second-generation tertiary education students. Parental levels of education, however, were differentially spread over the racial groups. White fathers/male guardians had the highest levels of education – 52% had university or technikon degrees and a further 11% had some form of post-secondary qualification – while among white mothers/female guardians, 37% had degrees and a further 19% some form of post-secondary education.

Among coloured parents, however, only 13% of males and 6% of females had a university or technikon degree, and 7% of males and 19% of females had some form of post-secondary qualification. In this group, 80% of males and 75% of females had Grade 12 or less. Parents of African respondents generally had lower levels of education.

Predictably, in relation to their levels of education, white parents had the highest levels of formal or self-employment (80% for men and 56% for women), followed by coloured (61% for men and 48% for women), while over 50% of African parents were retired. White parents had the largest share of high earnings, with 36% of white respondents claiming paternal incomes over R12 800 per month, and 21% with maternal incomes over R6 400. Among coloured respondents, 50% of paternal incomes were over R6 400 per month and 35% below this level. Maternal incomes showed 34% below R3 200 and a further 22% with no income. African parents had the lowest income levels, with 36% reflecting no income at all.

Choice of higher education institution

In Grade 12, SU was the preferred university for 89% of respondents. It was not the first choice for any of the African respondents, but it must be borne in mind that many may have completed a first tertiary level qualification elsewhere (their first choice in Grade 12) before enrolling at SU. Among coloured respondents, it was the first choice for 68%.

Across all gender and racial groups, the most important factor influencing graduate respondents' choice of institution was the high reputation or status of the institution and, secondly, the reputation of the faculty, school or department in which they wished to study.

Mode of study and financial support

Of the graduate respondents, 85% had studied full-time and 15% part-time. Most white and coloured students had studied full-time, while most African students (70%) were registered for part-time study in distance mode. Nine per cent of white and 12% of coloured graduates had studied part-time.

As far as financial support is concerned, very few graduates received funding from NSFAS – only 14 out of 338. Most drew on parental support (57%),¹⁶ bank loans (22%) and other bursaries (16%). Unspecified sources of support probably include the earnings of those students – predominantly African – who were self-supporting. Coloured students relied fairly heavily on funding from NSFAS and bursaries. This suggests that coloured students were generally more financially constrained than whites. This is confirmed by the fact that 39% of coloured respondents had part-time jobs to meet their living expenses, while 76% of Africans had full-time jobs.

Graduation

In assessing factors that contributed to their success, graduate respondents in all categories rated their own interest in the programme most highly and, secondly, their mastery of the academic discourses of their chosen fields of study. In terms of specifically institutional contributions, quality of teaching was highly rated by all, as well as the balance between different teaching and learning situations (lectures, tutorials, lab work, etc.). African respondents gave particularly high scores to feedback and comments on assignments (especially important for distance students) and to the provision of

¹⁶ These percentages are based on the total headcount of 338 and take into account the fact that students may have had multiple sources of funding.

academic support.¹⁷ Having a space to study in peace and quiet was critical for all respondents, but while white and coloured students felt culturally at home and secure on campus, African students gave these factors a much lower score. Of course, as distance learners, many of them would not have spent much time on campus, so this may be a rather meaningless outcome. Finally, all groups valued the academic preparation for higher education studies that they had received at school.

The majority of respondents graduated with either a general first bachelor's degree (135) or a professional first bachelor's degree (97). Only four of these were African. Most Africans graduated with either an undergraduate certificate or diploma (14) or a postgraduate certificate or diploma (10).¹⁸ A total of 61 respondents (18%) graduated with distinction.

Time to graduation

Forty-eight students claimed that they completed their qualification in one or two years, which would confirm the observation made above that these do not properly fall within the definition of 'relevant qualifications'. A further 133 students completed within three years, which corresponds closely to the graduation figure for first general bachelor's degrees (135), and another 101 completed in four years, which is just higher than the graduation figure for first professional bachelor's degrees (95). Twenty-eight students took five years to complete their qualification, and 15 took longer than five years. This suggests that among the respondent group, the majority of students completed their qualifications within the minimum period.

Further studies

Stellenbosch would appear to be highly successful at developing extended postgraduate pathways for successful students, with 70–80% of the respondent group having continued or currently continuing with their studies. In relation to further studies, 26% of the respondent group were not extending their studies, but 40% had already achieved a further qualification between 2002 and 2005, and another 34% were currently registered for another qualification. Of those who had completed a further qualification, 28 had graduated with postgraduate certificates or diplomas, 82 with honours degrees, and 25 with master's degrees. Given that there were 175 additional qualifications in total, but only 40% of the group had acquired a further qualification (approximately 135 individuals), this means that some had acquired more than one additional qualification in the three-year intervening period.

Of those currently registered for a further qualification, 13 were registered for postgraduate certificates or diplomas, 19 for honours degrees, 82 for master's degrees, and 10 for PhDs. In their responses, graduates claimed that the strongest motivation for furthering their qualifications was to enhance their employability, but a close second was the pursuit of personal fulfilment.

Despite this trajectory of success, all is not completely rosy in the SU garden, and it is now time to look at the downside to the story.

17 Most African respondents to the survey questionnaire (graduates and non-completers) were women, registered for certificates or diplomas in Education; most were studying part-time, and most were considerably older than the traditional age cohort of undergraduate students. It is probable that they were largely schoolteachers in full-time employment who were in the process of upgrading their qualifications, and their responses are likely to differ considerably from those of a traditional cohort of undergraduate students.

18 As some of the certificate programmes are presumably of only one or two years' duration, it seems an anomaly that they have been included in terms of the overall definition of 'relevant qualifications'.

Non-completion at Stellenbosch University

The university does not have a severe non-completion or dropout problem. Only 11% of the students registered for three- or four-year qualifications in 2002 actually left the institution without completing their studies, as compared to 21% in the total survey population (seven institutions). As will be shown, however, the university's success in retaining and graduating students is differentially spread over racial groups.

Analysis of HEMIS data in relation to students in the survey population at SU (those students registered for three- or four-year qualifications in 2002) reveals some interesting patterns. Table 5.5 shows the graduation headcount, non-completer headcount, enrolment headcount and graduation rate of students enrolled for relevant qualifications in 2002. The results are disaggregated by gender and race.

Of those who left the institution in 2002 without completing their qualifications, the non-completion ratios are higher than the enrolment ratios for all categories of black students, suggesting that they are more at risk of failing to complete their qualifications than white students. Nonetheless, African graduation ratios matched enrolment ratios for 'relevant qualifications', while coloured graduation fell three points below enrolment ratios, Indian graduation matched enrolment ratios and white graduation exceeded enrolment ratios by four points. In this analysis, it would appear that coloured students are generally less successful than students of other groups. Again, however, a word of caution must be sounded in relation to the figures for the African students who fall within the survey group at SU.

In line with the high African enrolment in Education, the highest concentration of African non-completers was in this faculty (68%) and 84% of these were women. African *graduates* were also concentrated in the fields of Education (41%) and the Other Humanities (46%), 74% of whom were women, with very few in other fields of study. As noted earlier, most of these were mature students, probably teachers in full-time employment, who were registered for under- or postgraduate certificates

TABLE 5.5 *Graduation rate by gender and race, Stellenbosch University and total survey population, 2002*

	Male	Female	Total	African	Coloured	Indian	White	Total
Graduates who fulfilled all requirements for a relevant qualification	1 173	1 697	2 870	194	249	16	2 411	2 870
Non-completers who left without completing a relevant qualification	637	758	1 395	317	249	16	813	1 395
Students enrolled for a relevant qualification	5 930	7 238	13 168	861	1 518	148	10 641	13 168
Graduation rate (%)	20	23	22	23	16	11	23	22

and diplomas in Education, and they were studying part-time and in distance mode. They cannot be considered to be representative of a traditional cohort of undergraduate students.

In relation to fields of study, it is in Education that students were most at risk, while in SET there were very low rates of non-completion. Non-completion in BCM and Humanities more or less matched enrolment ratios. In the coloured group, most non-completers were in the Other Humanities (39%) followed by SET (26%). White non-completers show a similar pattern, with 47% in the Other Humanities and 25% in SET. African and coloured students were considerably more vulnerable to non-completion than their white counterparts,¹⁹ and women were more vulnerable than men. Black women at SU appear to be the most vulnerable to non-completion.

Student profiles

Preparation for tertiary studies

A constant refrain heard in the course of interviews with staff at SU was that poor schooling was the greatest single challenge faced by higher education institutions at the point of entry. Expressed as a 'gap between schools and university' or as 'poor school to higher education articulation', it was a general opinion that all higher education institutions had to confront this problem in one way or another, and the problem was exacerbated by the conjunction of poor schooling with the imperative to broaden access. Most interviewees acknowledged that the impact on SU was probably more limited than on other institutions because its transformation has been slow. In other words, while the university still attracted better-prepared students, it was at the cost of limited diversity.

But exactly how well prepared is the general first-entry intake at SU? Results of the matriculation examination are still seen as the best predictors of success, but grade inflation means that the bar has shifted. The Institutional Planner pointed to a sharp contradiction: the university was able to show statistically that the student population entering the university came with increasingly better results, but the reality experienced in the faculties was that students were increasingly poorly prepared. Students with A and B aggregates were seen as likely to succeed, but all students below that level were 'at risk' to varying degrees. The university had been tracking the pattern since 1990, studying the ratios of chances of passing first year, based on matriculation results. The head of the Centres for Academic Development confirmed this impression by saying that student results for the Access Test, which has been administered at the university since 1995, have shown significant deterioration in levels of preparedness among students. 'Students often have a false notion of their level of preparation for university study because of unrealistic school results' (Stellenbosch University 2003b: 15). False expectations on the part of students create additional difficulties when it comes to the provision and taking up of academic support because many are convinced that they do not need it.

Schooling and SCE performance

School location was also cited as a factor, with students from urban schools generally better prepared than those from the 'platteland', where schools were more likely to be under-resourced and overcrowded, with underqualified teachers; this was an issue that cut across races. Students entering SU were still probably among the best in the country, but the university now drew students from a wide range of schools, and in its attempt to attract more Afrikaans-speaking students of colour, it was often to the rural schools that it had to turn. The best student in a poor school would not necessarily succeed at university without extended time, and even better-prepared students still had writing

19 The Indian group is too small to be statistically significant.

and language skills problems. In the non-completer respondent group, achievement in the SCE was markedly lower than for the graduate group.

Parental levels of education and income

First-generation university students were also often significantly weaker than their peers and did not always receive appropriate support at home. Unlike the graduate respondent group, the non-completer group had a majority of first-generation tertiary students. Parental levels of education were generally lower for this group than for the graduate group, as were family incomes.

Time to completion

In the Humanities Faculty, less than 50% of undergraduate students completed their degrees in the three-year minimum period, while in the Science Faculty, this went down to 20%. In Science, the average time to completion is 4.2 years, with many students taking five years or more to complete their qualifications. This put enormous financial pressure on students and the university. Bursaries often fell away when students required more time to finish their degrees. Nonetheless, the combination of grade inflation at matriculation level (producing unrealistic student expectations) and financial constraints made many students unwilling to enter extended degree programmes, or mentor and tutor programmes, which would actually enhance their chances of success. Parents were also resistant, and it was these factors that led to the idea of the First Year Academy, which makes the extended programme the norm.

Factors contributing to leaving

Of the non-completer respondents, less than half were formally excluded from the institution (47%). Of these, more than half (52%) were excluded on academic grounds, only 17% on financial grounds alone, and 31% for a combination of academic and financial reasons.

This is confirmed by other data in which non-completers in all categories ranked academic failure as the most important reason for leaving. Next in the hierarchy was loss of interest in the programme being pursued, and financial difficulties came third.²⁰ Disaggregated into racial terms, financial difficulties were given the highest ranking by coloured students. Among other factors ranked highly by African and coloured students as contributing to academic failure/leaving of the institution, were difficulties with academic terminology, too many lectures and no induction programme. The language of learning was also a problem for African students. Coloured students ranked lack of self-confidence as a significant factor and white students identified an active social life as contributing to failure/leaving.

Progress towards qualification

The highest proportion of non-completers left SU during or after the first year of study (44%), with a further 21% leaving during or after the second year of study and 15% leaving during or after the third year of study. The highest attrition rate proportionally in the first year was of coloured students, followed by whites. A surprisingly high proportion of Africans (30%) left during or after their third year of study.

20 In the university's own research on students who re-applied for entry in 2002, having been excluded for academic underperformance, students gave academic reasons the highest score, followed by personal circumstances and health. Financial reasons were fourth in the hierarchy in this study.

In terms of qualifications for which these students were registered, white students were concentrated in first bachelor's degrees (40%) and first professional bachelor's degrees (31%), as were coloured students – 32% and 34% respectively. Africans were concentrated in certificate or diploma qualifications (60%), presumably in Education, for which they were studying part-time. Only 17% of African non-completers were registered for first bachelor's degrees and 6% for first professional bachelor's degrees.

Given the high proportion of students who left during or after their first year, it makes sense that 64% needed another two or three years to complete their qualifications, with the majority still needing four or more courses.

Transfer and re-registration

Altogether, just over a third of this respondent group transferred to another institution and it would be fair to assume that a high proportion of these were among those non-completers who had achieved some measure of academic success. Data show that 25% of non-completers had not failed any courses, 30% had failed one or two courses, 11% had failed three, and 34% had failed four or more. A significant proportion (25%) had passed eight or more courses. By 2005, more than two-thirds of the group had re-registered at a higher education institution, with 53% registering for the same qualification. This means that relatively few of the respondent non-completers were lost to higher education after leaving SU.

Institutional factors

In interviews, the view was expressed that pressure on academics could also work to weaken retention in that they were expected to publish more while simultaneously improving pass rates. A 17-year study conducted at SU showed that the level of state funding had declined, student-to-teacher ratios had worsened, and tuition fees for students had increased. This produced an inevitable tension between the admission of poorly prepared students and the need to improve pass rates. There was a high correlation between success and high-level selection, so that faculties were always taking a 'risk' when they admitted students at lower levels. One of the ways in which SU has tried to address this is to require each faculty to develop a business plan in which provision is made for disadvantaged students. Another is to look at ways of providing financial support for students on extended programmes. High levels of individual autonomy for academics also meant that turnaround time for the assessment of tests and assignments was not well managed, with limited oversight of marking and assessment standards.

Greater staff and language diversity were two other factors mentioned in the interviews that were seen as important for the improvement of retention, but that remained challenges for SU. Changing the diversity profiles of staff is a very slow process, but on the whole, the historically white English universities have greater success in this area than the historically white Afrikaans universities, such as SU. National DoE statistics in 2000 showed that SU had a full-time black staff component of only 6% and, along with the University of Pretoria, had the lowest rate of new black staff appointments (Gibbon & Kabaki 2002). In addition, deans consistently referred to the language issue, saying that Afrikaans as the medium of instruction was a barrier for students who were not Afrikaans mother-tongue speakers. While the Language Centre offered language modules for the faculties, they were still not adequate to meet student needs.

Changing Stellenbosch University's diversity profile

The university, as an institution, is acutely aware of the very slow pace of transformation of its student demographic profile in the years since the democratic transition of 1994. Its anxiety that its profile 'remains a reflection of our apartheid past' (Brink 2005) has led it to make special commitments to promoting access to students from 'designated groups' – Africans, coloureds, Indians, women and those with disabilities. This is arguably the most important factor shaping the university's current access policies and recruitment strategies, though it is not the only one. These commitments are articulated in a number of institutional policy and planning documents.

Collectively, these documents provide a clear sense of the institution's values and priorities and the ways in which it hopes to realise them in practice. A holistic approach is adopted and an attempt made to address the manifold implications and ramifications of making such commitments, by devising a coordinated set of strategies that address a wide range of issues not only at the point of entry, but throughout a student's career. The University acknowledges...that access and accessibility are insufficient in themselves. It therefore commits itself to an ongoing appraisal of student throughput, yearly success and graduation, both generally and by population group and gender' (Stellenbosch University 2000: 13.) The vice-chancellor at the time of the HSRC study had made the following commitment:

The development of diversity is one of the strategic priorities of SU. The subject figures in both the value system and the envisaged actions in our Strategic Framework. The following commitments are made:

- That the bringing about of a corps of excellent students and academic and administrative staff members that is demographically more representative of South African society, must be fundamental to all our actions.
 - That we shall make a concerted effort to utilise the rich diversity of the country as an asset.
 - That we will continuously subject the accessibility of the University to critical evaluation.
- (Brink 2005)

Student diversity profile

When enrolment is analysed by racial categories, the diversity problem faced by SU becomes immediately apparent. Table 5.6 provides the headcount enrolment by race at SU while Table 5.7 provides the percentage race distribution of enrolment. The last row in Table 5.7 provides the average race distribution over the four-year period.

Stellenbosch has remained a predominantly white university despite vigorous attempts to diversify its student intake. White students' share of the total headcount enrolment remained remarkably consistent over this period, even rising slightly in 2003, while African students' proportional share

TABLE 5.6 *Stellenbosch University headcount enrolment, by race, 2000–03*

Year	African	Coloured	Indian	White	Unknown race	Total
2000	3 109	2 063	415	14 658	0	20 245
2001	3 112	2 128	390	14 927	0	20 557
2002	3 277	2 324	433	15 361	0	21 395
2003	2 725	2 542	491	15 640	0	21 398

TABLE 5.7 *Stellenbosch University percentage distribution of headcount enrolment, by race, 2000–03*

Year	African	Coloured	Indian	White	Unknown race	Total
2000	15.4	10.2	2.0	72.4	0.0	100
2001	15.1	10.4	1.9	72.6	0.0	100
2002	15.3	10.9	2.0	71.8	0.0	100
2003	12.7	11.9	2.3	73.1	0.0	100
2000-03	14.6	10.8	2.1	72.5	0.0	100

dropped from a high of 15.4% in 2000 to 12.7% in 2003. This represents a real decline in headcount enrolments of 384 from 3 109 in 2000 to 2 725 in 2003, while numbers increased in all other categories. Total black student enrolment on average for the four-year period is only 27.5%. In 2002, the survey year, black enrolment was at its highest level for this four-year period, both numerically (6 034) and in terms of share (28.2%).

But even this is somewhat misleading. Disaggregated by race, African students had 15.3%, coloured 10.9% and Indian 2% of the share. However, the enrolment of a higher number of African students than coloured students at SU has to be interrogated. According to the university's own data for 2002 contained in the Institutional Plan (Stellenbosch University 2003a), only 97 of the 3 518 first-entry undergraduate enrolments were African, 478 were coloured and 40 were Indian. This gives a total of 615 black students, the majority of whom are coloured, who constitute a mere 17% of the total first-entry enrolment (Stellenbosch University 2003a: Table A1). The overall high enrolment of African students is explained by the fact that they are concentrated in postgraduate programmes, while their presence in undergraduate programmes is much lower than that of coloured students. Many postgraduate students study part-time, and in 2002, African students registered for undergraduate studies were mainly studying in distance mode, as confirmed by the results of the survey questionnaire. This means that African students have a very limited physical presence on campus at SU, with few of them in full-time undergraduate programmes. Financial constraints and language barriers may be the two most important factors inhibiting undergraduate African enrolment.

At postgraduate level these factors do not have the same impact, as many postgraduate students are either recipients of bursaries or fund their studies from their own earnings. Postgraduate programmes are also often offered in English at SU, in which language many African students have greater proficiency than in Afrikaans. The ratio of black to white students in postgraduate programmes is much better than at undergraduate level. Headcount totals of master's and doctoral students show a very different picture: out of a total of 3 395 master's students in 2002, 680 were African, 390 coloured and 111 Indian. In other words, black students had a 35% share of master's enrolments, and at this level, African enrolments far exceeded coloured and Indian enrolments. The pattern is similar at doctoral level, with black students taking 30% of enrolment share. This immediately raises the question as to why SU can succeed in attracting black students at postgraduate level, but not at undergraduate level. The answer may very well relate to two issues: language policy, because English is used far more extensively in postgraduate teaching than in undergraduate courses, and levels of available funding.

Especially at undergraduate level, SU falls far short of the 40% target for enrolment of black contact students set in the DoE's equity planning (Bunting & Cloete 2004). In 2000, historically white Afrikaans universities had succeeded in pushing up their black headcount enrolment to 58% (Bunting 2002) –

against which SU's performance is dismal. This suggests that the language policy of the institution is the single biggest contributing factor to low black student enrolment.

Language policy

The university adopted a Language Policy and Plan in 2002 in order to clarify what is meant by its 'flexible' approach to language usage on campus. The Language Policy makes the following provisions:

1. Afrikaans is the default language of undergraduate learning and instruction.
2. English is used in particular circumstances as a language of undergraduate learning and instruction.
3. Afrikaans and English are used in postgraduate learning and instruction.
4. The academic literacy of students in Afrikaans and English will be developed systematically.
5. The default institutional language of the University is Afrikaans.
6. English is used alongside Afrikaans as a language of communication for the University, as circumstances may require.
7. Afrikaans, English and, where possible, isiXhosa are the University's languages of external communication.
8. Provision is made for isiXhosa in some programmes with a view to professional communication.
9. The University promotes isiXhosa as a developing academic language, amongst other ways, through its Language Centre.
10. Stellenbosch University provides language services with respect to Afrikaans and English, and, in a limited sense, isiXhosa. (Stellenbosch University 2002: 39)

The Language Plan enacts the provisions of the Language Policy. In particular, it outlines the conditions and guidelines for alternative language specifications at module level. The four language specifications are arranged in hierarchical order:

- A = Afrikaans, the default option;
- T = Bilingual;
- E = English, and
- A&E = Afrikaans and English in separate 'streams', sometimes also called parallel medium.

Only the A option does not require motivation. The circumstances under which each of the other three specifications may be adopted are given in the Language Plan. In 2005, as already noted, in terms of the Language Policy and Plan only one faculty, Humanities, had elected to implement the T-option (bilingual instruction), with the specific intention of making access easier for black students. All other faculties follow the A or default Afrikaans-as-the-medium-of-instruction model at undergraduate level. Nonetheless, lecture notes and other materials are often made available in English and parallel-medium instruction is offered in some courses in Engineering and the Health Sciences, where numbers permit.

The Language Policy and Plan were under review at the time of writing.

Diversity campaign

In 2003, the University Council adopted a 'diversity campaign' in relation to recruitment, in accordance with the Institutional Plan. It included the following strategies:

- concentration on groups that are under-represented at present, namely the so-called coloured community, with particular emphasis on the rural areas of the Western Cape and Northern Cape provinces;

- provision of bursaries and loans to assist needy students;
- various forms of support to students who are not ready to progress academically;
- aggressive marketing and recruitment;
- partnership agreements with target schools;
- recruiting larger numbers of female students and students from all population groups for the Natural Sciences, Engineering, Health and Management Sciences by means of earmarked bursaries;
- determining whether there are barriers in the way of women and people of colour in these earmarked programmes and removing such barriers;
- making the university accessible to mature first-time students;
- developing mechanisms and criteria for access by mature first-time students who do not meet the normal admission requirements;
- significantly increasing bursary offers for the targeted directions (Natural Sciences, Engineering, Health and Management Sciences);
- giving special attention to candidates from historically disadvantaged groups (women and black persons).

Many of these are put into effect by the Centre for Prospective Students and include a Merit Bursary Project – all schools in the Western Cape and targeted schools in other provinces are invited to nominate their top African, coloured and Indian learners to write a battery of tests, on the basis of which they may be considered for a recruitment bursary and, on the basis of financial need, an additional bursary loan. Approximately 250 schools nominate about 800 learners to participate, and the project delivers more than 50% of the African and Indian first-year students to the university. In 2005, this was 394 of the 750 black students. As one interviewee put it, diversity is best improved by ‘buying’ students. At present, the scheme is supported by internal funds and costs about R10 million per year, but the funding is not constant, has to be fought for, and targets are difficult to set because there is no certainty about how much money will be available.

The other project that seems to produce recruitment results is Careers Assessment. The aim here is to get potentially good students to make the right programme choices and the service is offered free of charge to identified learners in disadvantaged schools.

But there are other factors that further complicate the issue. According to the head of the Centre for Prospective Students, the pool of competent, available black students has been shrinking. The university has to be especially active in attempts to recruit the best because they are in competition with other universities for the same students. The new North West University (Potchefstroom) is one of their chief competitors, as they recruit Afrikaans-speaking white and coloured students from the southern and northern Cape.

One of the goals to which Stellenbosch aspires is to make SU the ‘university of choice’ for all Afrikaans-speaking students. In the context of promoting diversity, Afrikaans-speaking coloured learners would seem to constitute a natural market. However, there are two further difficulties in this respect. One is that overall coloured participation in higher education is very low – it was claimed that only 4.5% of the traditional age cohort of coloured youths actually enters higher education – which sets severe limits on diversity objectives. As one interviewee put it, ‘How can we diversify our student body if the coloured community isn’t coming to the party?’ The second difficulty is that coloured learners in urban areas who have access to better schools tend to be English-speaking and consequently less willing to enrol at Stellenbosch. Afrikaans-speaking coloured learners largely come from rural areas and are the most disadvantaged, both economically and educationally.

Part of the university's overall commitment to transformation has been to launch recruitment drives focused on these lower socio-economic groups, but they will significantly add to the financial and academic burdens of the university.

Conclusion

Stellenbosch University has survived in a bubble of privilege that is unique among higher education institutions in South Africa. The majority of its undergraduate students are white, Afrikaans-speaking, fee-paying youngsters who have had reasonably good schooling and come from middle- to high-income families, unlike most of their black counterparts. They arrive at university with many of the advantages that make for successful tertiary studies, and the university has a wide array of systems and strategies in place to support them throughout the duration of their stay. Coloured students constitute the next largest group at undergraduate level, most of whom are also Afrikaans-speaking. However, in 2002, they constituted less than 14% of the first-year enrolment. African students at this level have an almost negligible presence, constituting only 3% of first-year enrolment in 2002. On the other hand, SU attracts many black, particularly African, students at postgraduate level, and serves them well. This leads one to the conclusion that what preserves the membrane of the SU bubble is almost certainly a combination of its predominantly Afrikaans medium of instruction and financial barriers. For African undergraduate students, Afrikaans is probably an almost insuperable barrier, as it is likely to be a third or fourth language for them. For African postgraduate students, language is not a barrier (English is used at this level) and most have access to funding from scholarships.

So what are the available options? If the university continues to hold on to Afrikaans as the primary means of instruction and aims to be the 'university of choice' for all Afrikaans-speaking students, then it will have to devote its energies to enrolling more coloured students, and cannot realistically expect to increase its African undergraduate enrolment. This is a path fraught with challenges, many of which have been mentioned. First, among existing coloured students, the graduation rate has been approximately 5% lower than for white students. Second, they are mainly first-generation students and suffer far greater financial constraints than most white students. Third, the participation rate of the traditional age cohort of coloured youngsters is the lowest of all racial groups, competition for them is high, and the university has itself recognised that it will have to turn to rural schools, where both educational and economic disadvantage are extensive, to recruit students.

Should the university decide to substantially relax its language policy, it might become a more attractive option for both African students and English-speaking coloured students, but they would also require high levels of academic and financial support. Graduation rates for these groups nationally are 5% lower than for whites, and in the context of a state subsidy funding formula that rewards throughput and graduation, this would place an additional financial burden on the university.

In conclusion, there is no doubt that SU is among the most academically successful of the universities in South Africa at the moment, but if it is serious about transforming the racial profile of its undergraduate student body, then the trade-off for greater racial diversity will almost certainly be a lower level of academic success and reduced financial stability.

References

- Brink C (2005) *Planning for diversity at Stellenbosch University*. Available at <http://www.sun.ac.za/university/diversiteit/diversity.htm>. Accessed on 15 November 2005
- Bunting I (2002) Students. In N Cloete, R Fehnel, P Maassen, T Moja, H Perold & T Gibbon (eds) *Transformation in higher education: Global pressures and local realities in South Africa*. Lansdowne, Cape Town: Juta
- Bunting I & Cloete N (2004) *Developing performance indicators for higher education: A South African case study*. Cape Town: Centre for Higher Education Transformation
- Cloete N & Galant J (2005) *Capacity building for the next generation of academics*. Cape Town: Centre for Higher Education Transformation
- DoE (Department of Education) (2001) *National plan for higher education*. Pretoria: Department of Education
- DoE (2007) *Higher Education Management Information System (HEMIS) database*. Pretoria: Department of Education
- Gibbon T & Kabaki J (2002) Staff. In N Cloete, R Fehnel, P Maassen, T Moja, H Perold & T Gibbon (eds) *Transformation in higher education: Global pressures and local realities in South Africa*. Lansdowne, Cape Town: Juta
- Stellenbosch University (2000) *A strategic framework for the turn of the century and beyond*. Institutional document
- Stellenbosch University (2002) *Language policy and plan*. Institutional document
- Stellenbosch University (2003a) *Institutional plan for the planning phase 2004–06*. Institutional document
- Stellenbosch University (2003b) *Access with success: A new access model*. Institutional document

The graduate labour market

Percy Moleke

Introduction

This chapter looks at the labour market destinations of graduates who participated in the Student Retention and Graduate Destination Study. The first part steps back from this study to analyse the South African graduate labour market, as a lead-in to the more specific examination of the employment outcomes of the students under investigation – the graduates of the seven institutions.

Measuring the performance of the South African graduate labour market

The growing joblessness among people with university degrees has become a disturbing trend in the post-apartheid South African labour market (Bhorat 2004; Pauw et al. 2006). Bhorat and Oosthuizen (2005: 37) remind us that 'Africans have by far the highest unemployment rates, with 55.5% of African females and 42.9% of African males unemployed'. Moleke (2006) confirms this trend. She shows that African and coloured graduates have lower prospects for employment when compared with their white and Indian counterparts. Moleke shows, moreover, that those who graduate from HBIs are absorbed into the labour market more slowly after they have obtained their degrees than are those from HWIs, whose absorption rate peaks earlier – within the first few months of graduation.

The graduate labour market should be viewed in the context of the developments occurring in the general labour market. Globally, the structure of employment has shifted from manual work in manufacturing to jobs in the services sectors, which require higher levels of knowledge and skills. Alongside this, technological advances and global economic forces have driven the demand for graduate knowledge and skills in a wide variety of jobs. Thus the nature and organisation of many jobs have changed, requiring upgraded skills and creating broader opportunities for graduates in the labour market. The capacity of the economy to create enough jobs to absorb the growing number of new entrants is another key variable in the job market equation.

The graduate labour market needs to be assessed, furthermore, in the context of developments in the higher education sector, in particular the growth in its output. Although there has been an increase in the number of graduates, the types of qualifications they hold are cause for concern. Despite reports of growing demand for highly qualified and skilled people in the labour market, the increasing output from higher education has been accompanied by reports of increasing graduate unemployment.

TABLE 6.1 Number of higher education graduations by Classification of Educational Subject Matter group, 1995–2004

CESM group	1995	1996	1997	1998	2000	2001	2002	2003	2004
SET	11 800	11 800	12 300	12 900	15 500	16 135	16 996	18 530	18 677
BCM	11 000	10 500	11 200	11 600	12 400	13 225	15 453	17 728	13 176
HSS	28 700	28 100	30 700	30 400	39 100	42 992	43 183	44 973	39 743
Total	51 500	50 400	54 200	54 900	67 000	72 352	75 632	81 231	71 596

Sources: 1995–98: Cloete & Bunting (2000); 2000: DoE (2000, 2001) (cited in Subotzky 2003), Breier & Mabizela (2008)

Notes: Data for 2000 are not available for the North-West University.

CESM = Classification of Educational Subject Matter, HSS = Humanities and Social Sciences

There are various reasons for this paradox. The first involves the mismatch between the outputs of the higher education system and the types of qualifications and skills required in the labour market. This is evidenced in the high proportion of those who graduate in 'general' areas of study, that is, in the Humanities and Social Sciences, compared to those who graduate in professionally related areas of studies, that is, SET and BCM. Table 6.1 shows the distribution of graduations by these broad fields of study over a nine-year period.

As shown in Table 6.1, the output from higher education institutions shows a bias towards Humanities and Social Science graduates.

This is not to imply that Humanities and Social Sciences do not have a place in the labour market: labour market information indicates that there is significant demand for these graduates in the public sector. There was also a large demand for such graduates in the transition period leading up to the democratic elections in 1994 – that is, in the early 1990s. Wilson et al. (1999, 2000) estimated, moreover, that demand for these graduates grew significantly from 1992 to 1996. Their estimates indicate that pre-1992, the growth rate averaged 25% to 30%. The demand then increased to 57% between 1992 and 1994 and then grew to 60% between 1994 and 1996. This growth was attributed to the anticipated transformation process, particularly with regard to the distribution of workers in the public sector. Hence it can be inferred that the demand for these graduates is to a large extent driven by the public sector.

The public sector does not, however, necessarily create new jobs with any frequency. New job opportunities in the public sector confirm the mismatch between demand for and supply of skilled people. The DMA Index, which records jobs advertised in the Careers section of the *Sunday Times* newspaper, indicates that most jobs in the public sector are for professionals in health and education.²¹ The health sector is marred by shortages because of the high number of healthcare professionals who leave the country. The shortage of teaching professionals, on the other hand, is concentrated largely in teachers specialising in certain subjects, namely Mathematics and Science.

The lack of job opportunities for graduates is not confined to the public sector. The economy in general has not performed well in terms of employment growth, and graduates are naturally also affected by this. The growth in labour force entrants has outstripped growth in employment created, resulting in low absorption rates in the labour market.

21 Independent Newspapers, *Sunday Times* (6 November 2006)

Graduate labour market outcomes among the study cohort

Graduate unemployment

The Labour Force Survey of March 2007 (Stats SA 2007) estimated that the graduate unemployment rate was 4.3%. This rate had increased from 3.7% in 2006, against the background of an unemployment rate of 25% for the total population in March 2007. It is clear that the unemployment rate of graduates is small compared to the unemployment rate of the total population, however small a proportion of the population the graduate segment constitutes. If one looks at the unemployment rate of graduates during the period under investigation – 2000 to 2002 – it ranged from 5.8% in 2000 to 7.4% in 2002.

Based on the results of the tracer study that forms the subject of this investigation, 23% of graduates from the seven selected higher education institutions experienced unemployment during the period in question. Of these, 88% were African and 6% white, while coloured and Indian graduates comprised 5% and 1% respectively. Table 6.2 shows the length of job search of these graduates, by race and by period for which they had been searching for employment.

The profile reveals a disturbing pattern. Over half the unemployed graduates (58%) had been searching for employment for over a year. The racial differences show that it is mostly African graduates who search for the longest – 52% having searched for longer than 18 months. The majority of unemployed graduates from other race groups were seemingly relatively new entrants into the labour market and had been searching for a year or less. Disturbing a finding as this is, however, some graduates, as will be shown later in the section on employment experiences, take up to two years to find employment.

TABLE 6.2 *Period of job search, by race (%)*

Period of job search	African	Coloured	Indian	White	Total
0–6 months	17	23	33	68	20
7–12 months	19	59	67	16	22
13–18 months	12	0	0	4	10
19–24 months	17	9	0	8	16
More than 24 months	35	9	0	4	32
Total	100	100	100	100	100

Source: Unless otherwise indicated, the data in all tables and figures in this chapter are derived from HSRC (2005)

TABLE 6.3 *Unemployment, by field of study*

Field of study	N	%
Natural & mathematical sciences	34	11
Engineering & other applied sciences	33	11
Health sciences	17	5
Business/Commerce	77	25
Education	26	8
Social science & applied humanities	102	33
Humanities	21	7
Total	310	100

TABLE 6.4 *Employment status, by race*

Population group	Wage workers		Self-employed workers		Partnering workers		Total
	N	%	N	%	N	%	
African	802	97	7	1	14	2	823
Coloured	204	94	12	6	2	1	218
Indian	47	89	5	9	1	2	53
White	385	90	35	8	10	2	430
Total	1 438	94	59	4	27	2	1 524

Thus long periods of searching for employment, although not pleasant and potentially costly, do not necessarily mean that employment will not eventually be found.

It is clear that for all fields of study there were graduates who experienced unemployment. The proportions of these differ, as depicted in Table 6.3. Social Science and Applied Humanities had the highest proportion of graduates who experienced unemployment (33%), with Business/Commerce the second highest (25%). It is not clear why this field of study has a high proportion of graduates who experience unemployment, since their qualification would seem to have fairly specific applications.

Graduate employment

As indicated earlier, the graduate labour market on the whole performs positively, as a significant majority of graduates do find employment. However, what is the nature of this employment? How long does it take to secure employment? How do objective measures like field of study and subjective ones like race feature in graduates' experiences of finding employment? The analysis in this section sheds light on some of these questions.

The advantage of graduates in the labour market is clear. Seventy per cent of respondents to the survey found employment during the period under investigation. The type of employment they found is also encouraging. As Table 6.4 shows, a significant majority of graduates (94%) were 'wage workers' – employed by a company/institution/firm. Only 6% were in some kind of self-employment: 4% were self-employed and 2% partnered someone in their business. The high proportion of graduates who found wage employment signals both their choice of type of employment as well as the availability of jobs for this segment of the labour force. White and Indian graduates were more likely to be in self-employment than were African and coloured graduates.

TABLE 6.5 *Type of employment contract, by race*

Population group	Permanent		Fixed-term contract		Casual		Total
	N	%	N	%	N	%	
African	516	67	201	26	53	7	770
Coloured	139	70	53	27	6	3	198
Indian	33	72	12	26	1	2	46
White	268	71	94	25	17	4	379
Total	956	69	360	25	77	6	1 393

Furthermore, most graduates were in permanent or fixed-term contract employment, as represented in Table 6.5. This was the case for all race groups. Africans had a higher proportion (7%) of graduates in casual employment than did the other groups.

Absorption rate of graduates

The performance of the graduate labour market is most encouraging when we look at the absorption rate of these graduates into the labour market. The absorption rate refers to the speed with which graduates find employment after obtaining their qualifications or since the beginning of their job search. The importance of the absorption rate is that it allows the isolation of long- and short-term unemployment, which may be related to search activity.

Because the Labour Force Survey records an individual as unemployed if he/she has been unemployed and searching for employment for the past seven days, it is difficult to ascertain whether that individual eventually found employment and, if so, how long it took to do so. This limitation of the survey is countered by tracer studies – of the kind used in the project upon which this chapter is based – which solicit information regarding the rate of absorption of graduates into the labour market and hence provide an indication of the incidence and magnitude of unemployment experienced before securing employment.

The relative advantage of graduates in the labour market is evident from the rate at which they are absorbed into the labour market, as shown in Figure 6.1. Within a year of searching, 84% of graduates were employed. Seventy per cent of graduates who found employment did so within the first six months of searching. A further 14% took 7 to 12 months. It is disheartening, however, that about 4% took more than two years to find employment.

The rate of absorption of graduates into the labour market differed by race. As shown in Table 6.6, virtually all white graduates were absorbed within a year of searching: 92% found employment within six months of searching and a further 7% took 7 to 12 months to find employment. African graduates experienced a relatively slower absorption into the labour market. Only 56% of them found employment within six months of searching, while a further 18% took 7 to 12 months to find a job. Seven per cent of African graduates took more than two years to find employment.

FIGURE 6.1 *Period before finding employment*

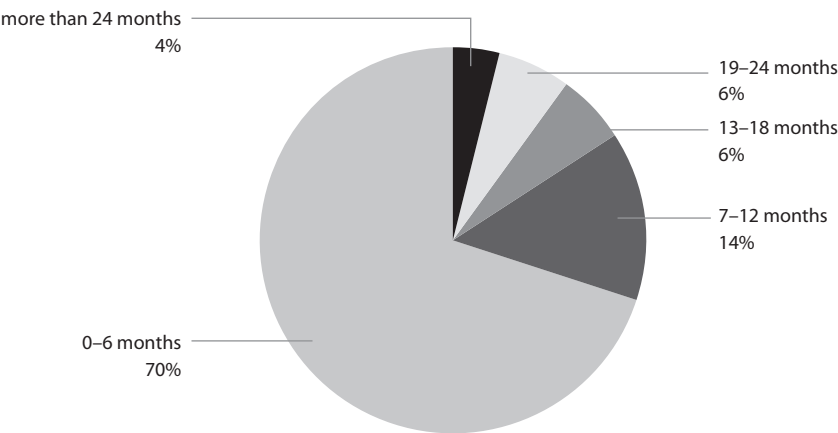


TABLE 6.6 *Period before finding employment, by race*

Period	African		Coloured		Indian		White	
	N	%	N	%	N	%	N	%
0–6 months	421	56	157	78	37	84	373	92
7–12 months	136	18	29	14	5	11	27	7
13–18 months	78	10	5	2	2	5	0	0
19–24 months	70	9	8	4	0	0	5	1
More than 24 months	51	7	3	2	0	0	0	0
Total	756	100	202	100	44	100	405	100

TABLE 6.7 *Period before finding employment, by race and field of study (%)*

Period	Race	Natural science	Engineering	Health sciences	Business/commerce	Education	Social sciences	Humanities
0–6 months	African	35	34	27	30	48	29	16
	Coloured	10	10	16	15	9	9	17
	Indian	1	1	3	4	1	2	2
	White	31	30	32	25	15	26	48
	Total	77	75	78	74	73	66	83
7–12 months	African	7	8	5	11	10	11	6
	Coloured	0	3	2	1	2	2	0
	Indian	0	0	2	0	0	0	0
	White	4	2	2	1	0	2	7
	Total	11	13	11	13	12	15	13
13–18 months	African	3	7	4	6	3	10	3
	Coloured	0	0	0	0	0	0	0
	Indian	1	0	0	0	0	0	0
	White	0	0	0	0	0	0	0
	Total	4	7	4	6	3	10	3
19–24 months	African	3	2	2	4	3	3	1
	Coloured	1	0	2	1	0	2	0
	Indian	0	0	0	0	0	0	0
	White	0	0	2	0	0	0	0
	Total	4	2	6	5	3	5	1
More than 24 months	African	4	3	1	2	8	4	0
	Coloured	0	0	0	0	1	0	0
	Indian	0	0	0	0	0	0	0
	White	0	0	0	0	0	0	0
	Total	4	3	1	2	9	4	0
Total		100	100	100	100	100	100	100

The most objective determinant of finding employment is field of study. Finding employment is largely a function of the type of skill and knowledge acquired during studies, signalled by the type of qualification held. Graduates who hold qualifications with a professional focus tend to have more positive labour market prospects than those who hold qualifications of a general nature. However, in a tight labour market where there is an increasing demand for people with higher levels of qualifications, this distinction with regard to qualifications becomes blurred. This is evident from Table 6.7, which depicts the absorption of graduates by field of study and race. All fields of study except the Social Sciences had a high proportion of graduates absorbed within six months of job searching. There were subtle racial differences, which must be interpreted with caution. These differences partly reflect the absorption into the labour market by race and partly the composition of graduates by race in the various fields of study.

Job search

As shown above, the job market is largely welcoming of graduates. However, the data show that periods of unemployment were experienced, albeit of a short duration for many.

One of the factors causing graduates to experience unemployment relates to search activity. Most graduates, being new entrants into the labour market, would be expected to experience periods of unemployment. The transition involves going through job advertisements, completing application forms, being interviewed, and waiting to be appointed. The job search is also likely to be longer for such

TABLE 6.8 *Job search methods used by graduates to find employment*

Job search method	N
Personal contacts	417
Newspaper advertisements	410
Other	201
Work related experiential learning	191
Going from place to place to ask for work	188
Making telephone, fax or email enquiries at workplaces, factories and shops	153
A private employment agency	141
My employer came to my higher education institution to recruit students	116
Government Gazette	111
With the help of my higher education institution	101
Relatives	96
Through a bursary received while studying	88
The head of department/faculty gave me reference	61
Higher education teaching staff	58
Holiday jobs during my higher education	56
Department of Labour employment services	28
Joined family business	20
Placing own advertisement in a newspaper	11
A labour broker	9
Total	2 456

Note: Respondents could mark more than one option from the list.

graduates because they try to find jobs commensurate with their qualifications and which match their expected income levels. Within human capital theory, job search is explained as a normal occurrence which work seekers use as a form of investment to enhance their position in the labour market. Thus job search is seen as a process of using one's time productively to produce a valuable economic good, which is job market information.

Table 6.8 depicts the various job search methods graduates in this study used to find employment. It is evident that graduates were dynamic in their search, as a range of different search methods was deployed. The reliance and trust generated through personal contacts is noteworthy, pointing to the significance of social networks or at least recognition of the importance thereof in accessing the labour market. Advertisements were also highly relied upon.

Conclusions

We have seen from the analysis that, among all graduates in the population (and not simply those from the seven institutions included in the study), Africans have the highest unemployment rate and most graduate qualifications are in the Humanities, Arts and Social Sciences.

Among graduates from the seven institutions:

- more than half of the unemployed graduates had been searching for a job for longer than a year, while 52% of African graduates had been searching for longer than 18 months;
- most graduates were wage earners in permanent or in fixed-term contract employment;
- most unemployed graduates had qualifications in the Social Sciences and Applied Humanities; and
- while the absorption rate of graduates into the labour market is generally high – 84% are absorbed within one year of graduation – the rate of absorption of African graduates (74% within one year) is lower than that of the other race groups, especially in comparison with the absorption rate of white graduates (99% within one year).

These findings underscore the mixed nature of graduate employment as gleaned from the Student Retention and Graduate Destination Study: graduates for the most part find jobs, most in permanent or fixed-term contracts; but Africans find jobs less easily than do their counterparts of other races. This imbalance will need to be redressed if employment equity among the highly skilled is to be achieved and if disaffection is not to set in among African graduates.

There is consonance, moreover, between the findings of Moleke (2006) regarding the South African labour market and the findings from the seven institutions constituting the Student Retention and Graduate Destination Study. This reliability will, however, need to be confirmed through ongoing research into employment trends among graduates.

References

- Bhorat H (2004) Labour market challenges in post-apartheid South Africa. *South African Journal of Economics* 72(5): 940–977
- Bhorat H & Oosthuizen M (2005) *The post-apartheid South African labour market*. Working paper. Cape Town: Development Policy Research Unit, University of Cape Town
- Breier M & Mabizela M (2008) Higher education. In A Kraak & K Press (eds) *Human resources development review 2008: Education, employment and skills in South Africa*. Cape Town: HSRC Press

- Cloete N & Bunting I (2000) *Higher education transformation: Assessing performance in South Africa*. Pretoria: Centre for Higher Education Transformation
- DoE (Department of Education) (2000) *Student statistical tables, Higher Education Management Information System (HEMIS database)*. Pretoria: Department of Education
- DoE (2001) *Student statistical tables, Higher Education Management Information System (HEMIS database)*. Pretoria: Department of Education
- HSRC (Human Sciences Research Council) (2005) *Data-set for the Student Retention and Graduate Destination Study*. Pretoria: Human Sciences Research Council
- Moleke P (2006) *Finding work: Employment experiences of South African graduates*. Cape Town: HSRC Press
- Pauw K, Bhorat H, Goga S, Ncube L & van der Westhuizen C (2006) *Graduate unemployment in the context of skills shortages, education and training: Findings from a firm survey*. Working paper. Cape Town: Development Policy Research Unit, University of Cape Town
- Stats SA (Statistics South Africa) (2007) *Labour force survey*. March. Pretoria: Statistics South Africa
- Subotzky G (2003) Public higher education. In Human Sciences Research Council (ed.) *Human resources development review 2003: Education, employment and skills in South Africa*. Cape Town & East Lansing: HSRC Press & Michigan State University Press
- Wilson M, Richter L, Durrheim K, Surendorff N & Asafo-Agei L (1999) The social and human sciences: An analysis of employment trends. *Society in Transition* 30(2): 131–141
- Wilson M, Richter L, Durrheim K, Surendorff N & Asafo-Agei L (2000) The social practice of psychology and the social sciences in a liberal democratic society: An analysis of employment trends. *Journal of Social Development in Africa* 15(2): 115–135

Student graduation, labour market destinations and employment earnings

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Introduction

Against the backdrop of rising unemployment rates in South Africa and the shortage of high-level skills in the labour market, the dual problems of low graduation rates and graduate unemployment are critically important. Research shows that attrition rates in South Africa are high, with only 30% of students enrolled in a bachelor's degree obtaining their qualifications within a five-year period (DoE 2005). Moreover, there exist large disparities in graduation rates across different population groups. According to the DoE (2001: 33), graduation rates of white students are almost double those of black students. It is in this context that the HSRC's Student Retention and Graduate Destination Study was undertaken.

The study traces the 2002/03 cohort of non-completers and graduates from seven selected public higher education institutions in South Africa. In this chapter, we attempt to augment the findings of the HSRC (2005) study by taking a more quantitative approach to analysing the survey data. A three-step estimation procedure will be used, in which the relative importance of covariates such as age, race and gender in each stage from educational attainment to pre-defined labour market outcomes will be modelled.

The intention is to model the selection process from graduation to employment, investigating the determinants of graduation and of employment. Since education is considered to be an important determinant not only of employment but also of earning, in the final stage of our modelling process an earnings function will be estimated. The availability of a comprehensive Student Retention and Graduate Destination dataset allows these three stages of the selection process to be modelled sequentially. Moreover, availability of these data by race enables us to investigate the factors contributing to the racial gaps in education, employment and earnings.

The chapter begins with an empirical overview of the data and a descriptive analysis of selected variables of interest. A more quantitative approach follows in which the three observable outcomes in the dataset – graduation, employment and earnings – are modelled.

Data

The study is structured as a cohort analysis that traces the non-completers and graduates of 2002/03 from the seven selected higher education institutions into their final labour market destinations. It

uses HSRC survey data derived from two postal surveys, the 2005 Graduate Destination Survey and the 2005 Student Retention Survey. Questionnaires were sent via mail to graduates and non-completers between June and September 2005. The mean sample were registered at their respective higher education institutions in 1999, but the surveys were mailed to individuals on the basis of whether they graduated or left the institution prematurely during 2002/03, as opposed to the year in which they first registered.²²

A graduate was defined as a student who fulfilled all the requirements for a qualification in 2002, and a non-completer was taken to be a student who left the institution prematurely between 2002 and 2003 without achieving a qualification. The total number of graduates and non-completers does not, however, represent the total number of students enrolled in this period, since the students who were neither graduates nor non-completers and who continued with their studies in 2003 were not surveyed. Our estimates therefore contain a residual bias of those students who were still studying, that is, those who were neither graduates nor non-completers in 2002/03.

Of the total survey population of 34 548 individuals (20 353 non-completers and 14 195 graduates) within the selected higher education institutions, there were 5 491 valid responses, representing a 15.8% return rate. The selected institutions include both universities and technikons (currently known as Universities of Technology): SU, UNorth, UWC, UFH, Wits, PtaTech and Pentech. The surveys were administered between June and September 2005. The higher education institutions selected include both HBIs and HWIs,²³ in order to take into account the problem of preferential resource allocation to HWIs during apartheid.

The dataset covers a broad range of areas, including variables measuring personal- and household-level characteristics, SES, school and higher education institution attended, as well as information on employment, such as earnings, occupation and sector.²⁴ Students' individual performance disaggregated by subject in the SCE is also provided. This, together with the grade level at which each subject was written, allows for the calculation of entry points into a higher education institution. As a measure of performance at the matriculation level, these points were estimated by totalling up the points achieved in English and Mathematics and then adding to those the points achieved in the four best other subjects written.²⁵ Household-level variables provided include parental income, parental education, home language, and the number of siblings enrolled in higher education institutions. Additionally, the dataset provides individual characteristics of students as well as information on their personal reasons for leaving the institution and the basis upon which they chose their subjects at school.

The data, however, suffer from certain drawbacks. First, questionnaires were mailed to students as opposed to in-person interviews being conducted. Second, only a small fraction of the total number

22 The surveys were mailed to graduates and non-completers on the basis of when they completed their qualification or left the institution. The year in which the students enrolled at the institution was not taken into consideration when determining the population to be surveyed. Based on the survey data, the mean sample of graduates who completed their qualification in 2002 first registered at the institution in 1999. However, the graduates and non-completers in the survey population did not all register at the institution in the same year.

23 As noted earlier in the monograph, the HBIs are SU, Wits and PtaTech. The HBIs are UFH, UWC, UNorth and Pentech.

24 The occupation variable was coded on the basis of the South Africa Standard Classification of Occupations issued by Statistics South Africa. Information on the main goods and services produced was used to determine sector. This was coded on the basis of the International Standard Industrial Classification of all Economic Activities.

25 In accordance with the conversion system used by the admissions department at the University of Cape Town (UCT), for a Higher Grade subject, an A symbol carries 8 points, a B 7 points, a C 6 points, a D 5 points, and so on. A Standard Grade A is equivalent to 6 points, a B to 5 points, a C to 4 points, and so on (note that UCT is not included in this study). For the purposes of this study, subjects written at Lower Grade were accorded the following points: A = 4 points, B = 3 points, C = 2 points and D = 1 point. Anything below a D in Lower Grade was converted to zero.

TABLE 7.1 *Response rates by institution and race (%)*

Institution	African	Coloured	Indian	White	Total
University of Fort Hare	22.0	16.7	0.0	0.0	21.9
Stellenbosch University	10.0	14.5	12.5	10.0	10.5
University of the North	18.2	80.0	25.0	0.0	18.2
University of the Western Cape	17.8	12.4	11.7	10.5	15.0
University of the Witwatersrand	14.1	13.2	11.6	7.8	11.5
Peninsula Technikon	14.8	13.3	8.7	8.7	14.0
Pretoria Technikon	16.4	8.2	2.9	6.7	13.9
Apartheid classification of institution					
Historically black	20.3	13.6	13.1	11.5	18.5
Historically white	17.9	8.9	9.3	8.1	13.8
Total	19.2	13.6	10.6	8.7	15.9

Source: Unless otherwise indicated, the data in all tables in this chapter are derived from HSRC (2005)

Note: Unless otherwise indicated, data in all tables in this chapter are weighted according to stratification by field of study, gender, race and institution, for graduates and non-completers.

of respondents mailed back their responses (5 491 out of 34 548). Thus the responses obtained provide only a snapshot sample of the original cohort of graduates and non-completers of 2002/03 at the respective institutions.

The response rates by institution and race are shown in Table 7.1.

Examining the response rates above, it is interesting to note that, overall, HBIs had a higher response rate than HWIs. Also interesting is that the response rate of Africans (19.2%) is more than double that of their white counterparts (8.7%).

Given these differences in response rates, the sample data were weighted in an attempt to control for bias caused by differences between the survey sample population of graduates and non-completers and the sample of students who responded. Weights were constructed using data given to the HSRC by the institutions on the total number of graduates and non-completers by gender, field of study, institution and race in 2002/03.²⁶ Even though the weights enable us to control for gender, field, race and institution, we are unable to control for other variables such as occupation and sector because of the lack of any further data on the total population. It must be noted that the weights were created using the data provided on the students by the institution, and that the accuracy of the institutional records is therefore open to scrutiny.

The survey data are further limited by their reliance upon the response of the individual. The accuracy of certain measures provided in the dataset is questionable since the students were a secondary source for information on parental income and parental education. Thus the estimates derived may be biased because of the lack of direct household data. Furthermore, our estimates for entry points rely on the

²⁶ Weights were calculated as N/n , where N = the number of students in the population of graduates or non-completers by institution, race, gender and field, and n = the number of students in that cohort in the sample. The sum of our weights do not equal the population total of 34 548 (the total number of graduates and non-completers in 2002/03) since some students in our sample were not identified as graduates or non-completers by the institution.

accuracy with which students reported their marks in the SCE, along with the correct level at which they wrote their examinations (Higher, Standard or Lower Grade). We have no recourse to their formal marks through the DoE register. Since the questionnaires were administered by mail, the information provided is limited by the extent to which the respondent was able to correctly interpret the questions and provide a response in the absence of any guidance.

Higher education transition: A descriptive overview

This section provides an empirical overview of some of the relevant variables for graduates and non-completers by institution. First, we present a snapshot of graduates and non-completers by exogenous characteristics. Then we examine the differences in the mean characteristics of the salient variables under consideration by the apartheid classification of the institution. As the data will show, inequalities persist in the post-1994 era between institutions as well as between the different race groups.

The data will focus on the three broad outcomes – graduation, employment and earnings – which we model sequentially later in this chapter. The discussion of the data will focus on how these outcomes differ not only across different racial groups, but also within a race, depending on the historical type of institution attended.

Table 7.2 shows the proportions of graduates and non-completers in the sample by race and gender. In the February 2002 Labour Force Survey, of those enrolled in higher education institutions, 69.1% were African, 7% coloured, 4% Indian and 19.5% white. This distribution is similar to that in our sample of graduates and non-completers.

The data in Table 7.2 suggest that for every two white students who graduate, one white student prematurely leaves the institution (66.27:33.73). The opposite is true for African students, with almost two students prematurely leaving the institution for every student who graduates (39.78:60.22). The graduate-to-non-completer ratios among coloured and Indian students are almost equal, with approximately one graduate for every non-completer.

African females appear the most disadvantaged, with a graduate-to-non-completer ratio of 34.32:65.68. Hence, for every female African student who graduates, approximately two leave the institution

TABLE 7.2 *Distribution of graduates and non-completers, by race (frequencies and percentage shares)*

	African		Coloured		Indian		White		Total
	Female	Male	Female	Male	Female	Male	Female	Male	
Graduates	3 787 34.32	3 154 49.17	795 49.35	613 42.60	249 60.88	242 54.38	2 671 75.62	2 264 57.83	13 775 47.24
Graduates: Total	6 941 39.78		1 408 46.16		491 57.49		4 935 66.27		13 775 47.24
Non-completers	7 246 65.68	3 260 50.83	816 50.65	826 57.40	160 39.12	203 45.62	861 24.38	1 651 42.17	15 023 52.76
Non-completers: Total	10 506 60.22		1 642 53.84		363 42.51		2 512 33.73		15 023 52.76
Sample size	17 447		3 050		854		7 447		28 798
Share of total	60.58		10.59		2.97		25.86		100.00

TABLE 7.3 *Distribution of graduates and non-completers, by institution and race (percentage shares)*

Institution	African			Coloured			Indian			White		
	NC	G	Total	NC	G	Total	NC	G	Total	NC	G	Total
University of Fort Hare	7.5	2.1	9.5	–	–	–	–	–	–	–	–	–
Stellenbosch University	0.2	1.0	1.1	3.7	6.3	9.9	–	1.3	1.3	7.7	32.4	40.1
University of the North	14.5	2.5	17.0	–	–	–	–	0.4	0.4	–	–	–
University of the Western Cape	3.1	3.9	6.9	27.3	16.4	43.7	1.9	9.5	11.4	–	–	0.1
University of the Witwatersrand	4.9	5.1	10.0	1.8	0.9	2.7	33.0	41.8	74.8	2.8	13.2	16.0
Peninsula Technikon	6.8	6.1	12.9	18.2	21.4	39.6	0.6	0.2	0.8	0.1	0.3	0.3
Pretoria Technikon	24.0	18.3	42.5	2.8	1.2	4.1	7.0	4.3	11.4	23.1	20.4	43.5
Total	61.0	39.0	100.0	53.8	46.2	100.0	42.5	57.5	100.0	33.7	66.3	100.0
Apartheid classification of institution												
HBI	31.8	14.6	46.4	45.5	37.8	83.3	2.5	10.1	12.5	0.1	0.3	0.4
HWI	29.2	24.4	53.6	8.3	8.4	16.7	40.0	47.4	87.5	33.6	66.0	99.6
Total	61.0	39.0	100.0	53.8	46.2	100.0	42.5	57.5	100.0	33.7	66.3	100.0

Notes: NC = non-completers, G = graduates.

Estimates corrected for by person weights.

In this and other tables in this chapter, – indicates missing values where no sample was present or where the sample size was too small to construct an estimate or confidence intervals.

prematurely, whereas for every white female student who drops out, three white female students graduate (24.38:75.62).

For African males there appears to be a 50% probability of dropping out compared to graduating. It is interesting to note that the percentage of graduates who are white (66%) is disproportionate to their share in the sample population (26%), while the percentage of African graduates (40%) is less than the proportion of Africans in the total sample of graduates and non-completers (61%). It should be noted that the percentage of African non-completers is almost twice that of African graduates (60% compared to 40%). On the other hand, the share of white graduates is almost double that of white non-completers (66% compared to 34%).

Although among all racial groups proportionally more females than males graduate, African females have the lowest graduate-to-non-completer ratio (34.32:65.68) compared to the other groups. The two highest graduate-to-non-completer ratios are for white and Indian females.

Table 7.3 attempts to estimate the share of graduates and non-completers by institution in order to better investigate the aggregate race and gender differences noted above.

TABLE 7.4 *Non-completion rates by institution, gender and race*

Institution	African		Coloured		Indian		White		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
University of Fort Hare	0.78 (0.027)	0.78 (0.043)	–	–	–	–	–	–	0.78 (0.027)
Stellenbosch University	0.46 (0.258)	–	0.42 (0.129)	0.34 (0.234)	–	–	0.30 (0.119)	0.09 (0.032)	0.21 (0.062)
University of the North	0.87 (0.017)	0.83 (0.026)	–	–	–	–	–	–	0.85 (0.015)
University of the Western Cape	0.25 (0.084)	0.52 (0.064)	0.66 (0.050)	0.60 (0.080)	–	0.27 (0.168)	0.67 (0.315)	–	0.52 (0.035)
University of the Witwatersrand	0.46 (0.045)	0.53 (0.078)	0.52 (0.206)	–	0.48 (0.096)	0.41 (0.122)	0.21 (0.053)	0.14 (0.055)	0.39 (0.029)
Peninsula Technikon	0.61 (0.042)	0.45 (0.053)	0.53 (0.060)	0.38 (0.088)	0.71 (0.289)	–	–	–	0.50 (0.031)
Pretoria Technikon	0.24 (0.014)	0.69 (0.023)	0.60 (0.199)	0.84 (0.160)	0.60 (0.284)	–	0.60 (0.111)	0.45 (0.066)	0.56 (0.025)
Apartheid classification of institution									
Historically black	0.53 (0.015)	0.71 (0.018)	0.65 (0.050)	0.61 (0.050)	0.42 (0.257)	0.32 (0.161)	0.60 (0.011)	0.45 (0.066)	0.62 (0.015)
Historically white	0.54 (0.032)	0.46 (0.043)	0.51 (0.053)	0.39 (0.086)	0.47 (0.093)	0.40 (0.120)	0.27 (0.082)	0.10 (0.034)	0.37 (0.022)
Total	0.53 (0.014)	0.66 (0.018)	0.57 (0.038)	0.51 (0.056)	0.46 (0.098)	0.39 (0.105)	0.42 (0.088)	0.24 (0.028)	0.53 (0.013)

Notes: Standard errors in brackets. Bold indicates significance at 5% level of Africans with whites. Estimates corrected for by person weights.

For most of the institutions shown in Table 7.3, the percentage share of white graduates exceeds that of Africans. While for whites the share of non-completers is much smaller than that of graduates at most of the institutions, for Africans the share of non-completers exceeds the share of graduates at almost all of the institutions. Put differently, whites are more likely to graduate than Africans – regardless of the choice of institution.

An interesting outcome is the difference between Africans from HBIs and those from HWIs. For Africans from HBIs, the share of non-completers is double that of graduates (31.8% and 14.6% respectively), while for Africans at HWIs this ratio is much lower. The share of Africans who graduate at HWIs (24.4%) is larger than the share of African graduates at HBIs (14.6%), despite the predominant share of enrolled Africans at HBIs. However, the information in Table 7.3 must be treated with caution. The population of enrolled students at HWIs remains disproportionately white, and at HBIs predominantly African. For instance, the disproportionately large share of whites enrolled at SU provides a distorted picture of the share of non-completers, by institution.

In order to control for differences in the total number of students enrolled at each institution, non-completion rates²⁷ were calculated for the different cohorts at the institutional level (Table 7.4).

In examining the aggregate non-completion rates, it is clear that the estimates for African students are higher than those for all the other racial groups. In addition, non-completion rates for whites are much lower than those for Africans – a result true across all HWIs and across all racial groups. For example, Wits yields 53 non-completers per 100 female African students compared with only 14 non-completers per 100 female white students.

There is also a large differential between the non-completion rates at HBIs and HWIs. The non-completion rates at HBIs (62%) were significantly higher than those at HWIs (37%). In comparing Africans at HBIs with those at HWIs, we observe that while there is little difference between the non-completion rates of males at HBIs and HWIs, the estimated non-completion rates for African females at HBIs (71%) are significantly higher than those for their counterparts at HWIs (46%).

There is also an interesting gender effect that is observed when we examine the estimates for historically white and black institutions. At HBIs, females have non-completion rates significantly higher than males (71% compared with 53% for Africans), while at HWIs, the converse is true: the non-completion rates of females are lower than those of their male counterparts (46% compared with 54% for Africans and 10% compared with 27% for whites). Indeed, as noted above, African females have a higher non-completer rate than males across most institutions, while for other racial groups, females in general yield lower non-completion rates than their male counterparts. The cohort with the highest non-completion rates is African females at HBIs, who have non-completion rates seven times larger than white females at HWIs (71% compared with 10% respectively). However, it must be noted that there exists an upward bias in our estimated non-completion rates, since the sample does not include the students continuing with their studies in 2003, who are unobserved in our sample.

The data presented above reinforce the centrality of race and gender in shaping student retention and the probability of graduation – a result that is unsurprising for South Africa. Furthermore, the estimated non-completion rates above suggest that, in addition to interracial effects, intra-racial differences according to type of institution attended are also prevalent.

We now provide a more nuanced picture of the differences between graduates and non-completers and between HBIs and HWIs according to a range of additional variables present in the dataset.

Table 7.5 shows the mean characteristics of some of the key variables under consideration in this study for HBIs and HWIs and for graduates and non-completers. The data have been further disaggregated to illustrate the mean differences in characteristics between Africans from HBIs and Africans from HWIs, as well as whites from HWIs.

Table 7.5 includes variables that include parental, household and schooling characteristics that may be factors impacting on the three outcomes under consideration: student performance, employment and wages.

27 The non-completion rates for each racial group at each institution were calculated by dividing the number of non-completers of each race and institution by the total number of graduates and non-completers of that race at that institution. For the purposes of this study, the population (enrolment) was taken to be the total number of graduates and non-completers. Non-completion rate (l) for race r at institution i

$$l = \frac{(\text{non-completers})_{r,i}}{\text{graduates}_{r,i} + (\text{non-completers})_{r,i}}$$

TABLE 7.5 Mean characteristics, by apartheid classification of institution

Variable	Institution type (Apartheid classification)			Graduates	Non-Completers	Total
	HB African	HW African	HW White			
Individual characteristics						
Male	0.35* (0.477)	0.47 (0.499)	0.50 (0.500)	0.46 (0.498)	0.41 (0.492)	0.43 (0.495)
Female	0.65* (0.477)	0.53 (0.499)	0.47 (0.500)	0.54 (0.498)	0.59 (0.492)	0.57 (0.495)
Business/Commerce	0.18 (0.392)	0.18 (0.395)	0.13 (0.260)	0.16 (0.365)	0.18 (0.385)	0.17 (0.376)
Education	0.19* (0.356)	0.13 (0.353)	0.03 (0.202)	0.12 (0.322)	0.13 (0.331)	0.12 (0.327)
Humanities	0.33* (0.484)	0.31 (0.452)	0.32 (0.472)	0.35 (0.451)	0.28 (0.477)	0.32 (0.466)
Science, Engineering, & Technology	0.21* (0.407)	0.34 (0.474)	0.38 (0.485)	0.34 (0.473)	0.23 (0.423)	0.28 (0.451)
Home language English	0.06 (0.233)	0.07 (0.262)	0.45 (0.498)	0.25 (0.432)	0.13 (0.332)	0.18 (0.387)
Mean entry points	19.5 (8.204)	20.9 (8.916)	37.4 (8.456)	26.5 (11.659)	22.2 (0.029)	0.52 (0.225)
A in Maths	0.02 (0.139)	0.03 (0.175)	0.32 (0.467)	0.15 (0.361)	0.05 (0.212)	0.52 (0.302)
A in English	0.01 (0.070)	0.01 (0.089)	0.27 (0.445)	0.10 (0.294)	0.05 (0.213)	0.52 (0.256)
Merit/Distinction in SCE	0.50 (0.500)	0.51 (0.500)	0.59 (0.493)	0.49 (0.500)	0.51 (0.500)	0.51 (0.500)
Lectured/not lectured	0.87* (0.331)	0.96 (0.184)	0.99 (0.095)	0.94 (0.217)	0.89 (0.287)	0.93 (0.257)
Studying part-time	0.25* (0.430)	0.15 (0.357)	0.08 (0.269)	0.20 (0.399)	0.19 (0.395)	0.20 (0.397)
Urban school attended	0.93 (0.257)	0.92 (0.271)	0.84 (0.367)	0.59 (0.448)	0.72 (0.493)	0.65 (0.477)
Received scholarship/loan	0.47* (0.499)	0.64 (0.481)	0.42 (0.494)	0.51 (0.500)	0.42 (0.494)	0.46 (0.499)
Household characteristics						
At least one parent employed	0.52 (0.498)	0.59 (0.499)	0.90 (0.321)	0.70 (0.460)	0.61 (0.489)	0.65 (0.477)
Parental income (monthly)	4 240 (14 136)	5 420 (21 973)	40 491 (68 678)	16 340 (43 304)	7 523 (25 596)	11 631 (35 254)
Years of education of parents	6.53 (4.224)	7.33 (4.400)	12.94 (2.229)	9.53 (4.476)	7.90 (4.486)	8.67 (4.555)
Have siblings who have graduated	0.40 (0.490)	0.34 (0.473)	0.61 (0.488)	0.50 (0.500)	0.39 (0.488)	0.44 (0.497)
Parent with tertiary qualification	0.25* (0.430)	0.33 (0.471)	0.73 (0.444)	0.45 (0.500)	0.33 (0.469)	0.40 (0.490)
Sample size	13 531	4 276	4 204	13 775	15 383	29 158
Share of total	53.58	16.93	16.65	47.24	52.76	100

Notes: Standard deviations shown in parentheses. Bold indicates significant difference at 5% of Africans with whites, or of graduates with non-completers.

* Significant difference at 5% level of mean characteristic of Africans at HBIs with Africans at HWIs.

Data here are weighted.

'Years of education of parents' refers to the average of the years of education of the father and the mother. 'A in Maths' and 'A in English' indicates the share of the sample that obtained an A at the Higher Grade or Standard Grade. 'Urban school' refers to individuals who attended schools in urban locations.

Significant disparities are observable across institution type for Africans and whites and between graduates and non-completers. For example, there is approximately a six-year difference in the mean number of years of education completed by parents of whites (at previously white institutions) as opposed to those completed by Africans. This difference was statistically significant at the 5% level. Furthermore, the share of students whose home language is English is significantly higher for whites (45%) than for Africans (6% and 7% at HBIs and HWIs respectively), as is the share of whites who obtained an A in English in matric (27%) compared to their African counterparts (1%).

For certain variables, not only were there significant differences between Africans and whites, but there were also significant differences at the 5% level for Africans at HBIs and Africans at HWIs. For instance, a significantly higher proportion of white students have a parent who has graduated than do Africans. Furthermore, the share of Africans at HWIs who have a parent with a tertiary qualification is significantly higher than the share of Africans at HBIs who have a parent with a tertiary qualification (33% compared with 25%). The mean parental income for whites at HWIs is about eight times larger than that for Africans. Notably, the mean parental income of Africans at HWIs is higher than the income of parents of Africans at HBIs, suggesting a significant difference in the socio-economic background of Africans, according to institution type.

The share of African students at HBIs receiving a scholarship or loan is significantly lower than that of their African counterparts in HWIs. There also appears to be a significant difference in performance in matriculation for Africans and whites, with whites having significantly higher entry points, and with a larger share of whites obtaining an A in Mathematics compared with their African counterparts (32% compared with 2% and 3% respectively for Africans at HBIs and HWIs).

Similar disparities for most of the variables are observed for graduates and non-completers. A dominant share of graduates achieved an A at the Higher Grade or Standard Grade level in English or Mathematics in matriculation. A significantly larger number of graduates also report having at least one sibling or parent who graduated from a university or technikon. Note, however, that the individual matriculation performance of African students, as measured by mean entry points and the achievement of an A in Mathematics or English, does not differ significantly across HBIs and HWIs.

The information presented above suggests that there is a significant difference in the background and type of student who is a graduate versus a non-completer, and also a difference in students enrolled in HWIs and HBIs, even within the same racial group.

Table 7.5 showed that whites have entry points significantly higher than those of Africans and that graduates have entry points significantly higher than those of non-completers. Given that certain fields, such as SET, require that a student have more entry points than do other fields, the observed differences in student performance may be attributed to field of study as opposed to race or other factors. In order to derive a more nuanced assessment of the overall performance in matriculation, by race and institution, entry points are re-estimated in Table 7.6, this time controlling for field of study, in order to enable a fair comparison between entry points for the different race groups.

Table 7.6 shows that entry points of Africans and whites differ significantly when controlling for field of study. There exists a statistically significant difference at the 5% level between the mean entry points of Africans with whites at HWIs even when controlling for field of study, with African students yielding lower entry points. However, no statistically significant difference was found between the entry points of Africans in HBIs and Africans in HWIs when field of study was controlled for.

TABLE 7.6 *Mean entry points for HBIs and HWIs, by race and field of study*

Field of study	Mean (Std. dev)				Total mean entry points
	African	Coloured	Indian	White	
HBI					
Business/Commerce	20.2 (7.4)	21.8 (13.0)	30.7 (5.5)	24.8 (9.2)	21.1 (7.9)
Education	18.3 (10.5)	11.1 (9.7)	–	29.3 (16.7)	18.0 (10.6)
Humanities	18.2 (7.3)	20.5 (9.9)	22.6 (2.8)	26.4 (12.2)	19.7 (8.1)
Science, Engineering & Technology	22.1 (7.8)	23.6 (10.8)	16.2 (17.3)	29.2 (10.4)	23.8 (8.7)
Other	19.1 (7.6)	23.4 (10.5)	32.3 (3.4)	34.5 (10.3)	24.6 (8.6)
Total mean entry points	19.7 (8.1)	21.2 (11.0)	30.1 (10.8)	22.0 (10.9)	21.5 (8.9)
HWI					
Business/Commerce	19.5 (8.5)	24.5 (10.0)	34.5 (12.8)	39.4 (5.3)	27.7 (11.2)
Education	18.4 (7.7)	30.6 (9.7)	23.0 (7.6)	37.4 (7.2)	21.4 (10.4)
Humanities	20.3 (8.6)	23.1 (10.8)	30.7 (4.1)	35.8 (8.2)	27.6 (10.9)
Science, Engineering, Technology	22.6 (9.9)	22.8 (9.8)	35.9 (10.1)	37.5 (8.9)	29.6 (11.7)
Other	22.9 (9.3)	30.3 (9.3)	37.4 (6.9)	38.6 (8.8)	34.0 (11.0)
Total mean entry points	20.9 (9.4)	23.8 (9.9)	34.9 (9.4)	37.4 (8.2)	28.7 (11.5)

Notes: Bold indicates significant difference at 5% of Africans with whites. Means tests could not be conducted for all fields in HBIs, with the exception of SET fields, since no whites were enrolled in those fields in those institutions. Estimates corrected for by person weights. Shares do not sum to 100 because of the table's exclusion of whites at HBIs.

According to the system for evaluating entry points used by admissions at UCT, for example, 'lower-end' students are those with fewer than 27 entry points, while better students have more than 27 points (Van Walbeek 2004). From the data it can be observed that the mean performance at the matriculation level of whites at HWIs and of Indians at HBIs and HWIs was better than that of Africans and coloureds at both institution types: for whites at HWIs and Indians at HBIs and HWIs the total mean entry points were above 27, indicating stronger performance at the matriculation level; whereas for Africans and coloureds, the total mean entry points were below 27. The data ultimately suggest that a discrepancy exists in the academic performance in matriculation across racial groups, even when controlling for field of study. These differentials in turn may be indicative of a lack of academic preparedness among some students at the time of enrolment in higher education, which may engender the observed discrepancies in the graduation rates of the different cohorts.

From higher education to the labour market: A snapshot of trends

This section examines the labour market outcomes of the cohort of graduates and non-completers in the study.

Unemployment

As a point of departure, Tables 7.7 and 7.8 show unemployment rates for the sample.²⁸ It is important to note that because of the design of the survey questionnaire, there may be an upward bias in the unemployment rates presented below.²⁹

Tables 7.7 and 7.8 show the estimated unemployment rates under the broad definition of unemployment, which includes the 538 individuals (4.2% of the non-working sample) who had given up searching for a job (discouraged workers). The estimates indicate that, overall, the unemployment rates are much higher for non-completers than for graduates (a discrepancy is observed for whites, as explained further on) and for Africans than for whites. The estimated unemployment rates for individuals from HWIs were significantly lower than for those from HBIs, under both the broad and the narrow definitions of unemployment. The largest discrepancy exists between the unemployment rates for African graduates and non-completers at HBIs (40% and 48% respectively) relative to those of their white counterparts at HWIs (10% and 4%).

While the disparity observed in Table 7.7 between the unemployment rates of graduates relative to non-completers is expected, what is disturbing is the disparity in the unemployment rates of African and white graduates, and of Africans from HWIs relative to those from HBIs. For instance, African graduates from Wits have an unemployment rate (29%) that is 27 percentage points lower than their counterparts from UFH (56%). Possibly the most worrying estimate is that the unemployment rate of Africans from HWIs (49% and 42% for non-completers and graduates respectively) remains significantly higher than that of whites at HWIs (4% and 10%). According to our sample, this difference stands at 32 percentage points for graduates and 45 percentage points for non-completers. This is initial evidence that even when controlling for the institution, Africans and whites have distinctly different probabilities of finding employment.

An anomaly is observed in the estimated unemployment rate of white graduates and non-completers. Although the unemployment rates for white non-completers appear to be higher than those for graduates, this difference was not statistically significant at 5%. This anomaly may be, in part, a function

28 Unemployment rates were calculated by first determining the economically active population (EAP) for each group by summing up the number of employed and unemployed within that group. The total number of unemployed in that group was then divided by the EAP: unemployment rate for race r at institution i for a graduate or non-completer,

$$g = \left(\frac{\sum \text{unemployed}_{r,i,g}}{\sum \text{EAP}_{r,i,g}} \right) \times 100.$$

29 In the survey questionnaire, the unemployed were identified on the basis of their present situation. Those not working at the time of the survey were asked to identify whether they were searching for a job (67.6%), had given up looking for a job (4.2%), did not need to work (2.3%), or were studying (25.9%). Although the survey identifies the unemployed as those who were not working at the time that they were surveyed, for the purposes of this study we exclude those who were either studying or indicated that they did not need to work from the sample of the unemployed. It must be noted that unlike the Labour Force Surveys, which account for those who have a job they will return to, those who have worked in the last seven days, and those who have held previous occupations, this survey only takes into account those who were not working at the time of the implementation of the survey. Thus, there may be an upward bias in our estimated unemployment rates.

TABLE 7.7 *Unemployment rates, by institution and race (broad definition)*

Institution	African		Coloured		Indian		White		Total
	G	NC	G	NC	G	NC	G	NC	
University of Fort Hare	0.56 (0.070)	0.71 (0.054)	–	–	–	–	–	–	0.67 (0.044)
Stellenbosch University	0.55 (0.216)	–	0.15 (0.093)	0.07 (0.082)	–	–	0.12 (0.042)	0.03 (0.031)	0.13 (0.035)
University of the North	0.42 (0.061)	0.59 (0.028)	–	0.50 (0.355)	–	–	–	–	0.57 (0.025)
University of the Western Cape	0.42 (0.081)	0.36 (0.064)	0.14 (0.084)	0.27 (0.056)	0.21 (0.177)	–	–	–	0.30 (0.037)
University of the Witwatersrand	0.29 (0.085)	0.50 (0.053)	–	0.62 (0.205)	0.16 (0.136)	0.11 (0.080)	0.07 (0.042)	0.08 (0.075)	0.23 (0.033)
Peninsula Technikon	0.51 (0.061)	0.48 (0.052)	0.23 (0.070)	0.35 (0.088)	–	–	–	–	0.41 (0.033)
Technikon Pretoria	0.38 (0.027)	0.37 (0.021)	–	0.17 (0.136)	–	–	0.06 (0.031)	0.05 (0.025)	0.27 (0.019)
Apartheid classification of institution									
Historically white	0.42 (0.050)	0.49 (0.039)	0.21 (0.058)	0.32 (0.078)	0.11 (0.074)	0.15 (0.131)	0.10 (0.032)	0.04 (0.030)	0.27 (0.021)
Historically black	0.40 (0.024)	0.48 (0.016)	0.13 (0.078)	0.26 (0.053)	–	0.11 (0.108)	0.06 (0.031)	0.05 (0.025)	0.35 (0.016)
Total	0.41 (0.023)	0.48 (0.015)	0.18 (0.047)	0.28 (0.045)	0.14 (0.102)	0.06 (0.048)	0.09 (0.023)	0.05 (0.019)	0.32 (0.012)

Notes for Table 7.7 and Table 7.8: Standard errors are reported in brackets and are corrected for by person weights. Bold indicates a significant difference at 5% of Africans with whites.

Data are calculated on the weighted sample.

The broad definition includes the discouraged work seekers, that is, those who have given up searching for work.

NC = non-completers, G = Graduates

of the small sample of white non-completers.³⁰ However, the unemployment rates presented above should be treated with caution. It is possible that these differences in unemployment rates between Africans and whites and between Africans across institution type could be attributed to field of study rather than to race.

Table 7.8 presents re-estimated broad unemployment rates for African and white graduates and non-completers, this time disaggregated by field of study and institution.

The information presented in Table 7.8 shows that even when we control for field of study and institution type, white unemployment rates are overall significantly lower than unemployment rates for Africans for all fields, with the exception of Education, for which the unemployment rates for whites could not be estimated because of the small number of unemployed whites in that field. For example, in the case of graduates studying Business, by race, per 100 Africans who studied Business, 53 are unemployed while the figure for whites is only 10. Indeed, when looking at graduates only, Africans from HBIs in SET fields experience an unemployment rate more than seven times that of whites (37%

30 Out of the total sample of 7 443 whites enrolled in HWIs, 88% were graduates.

TABLE 7.8 *Unemployment by field of study (broad definition)*

Field	Institution type (Apartheid classification)								
	Historically black			Historically white					
	African			African			White		
	G	NC	Total	G	NC	Total	G	NC	Total
Business/ commerce	0.48 (0.045)	0.57 (0.038)	0.53 (0.029)	0.46 (0.106)	0.37 (0.085)	0.42 (0.072)	0.14 (0.126)	–	0.10 (0.093)
Education	0.09 (0.046)	0.10* (0.041)	0.10 (0.031)	0.24 (0.141)	0.51* (0.157)	0.36 (0.117)	–	–	–
Humanities	0.58 (0.032)	0.63 (0.026)	0.61 (0.020)	0.58 (0.081)	0.58 (0.075)	0.58 (0.055)	0.13 (0.050)	–	0.09 (0.043)
SET	0.37 (0.063)	0.54 (0.029)	0.48 (0.028)	0.33 (0.078)	0.52 (0.059)	0.41 (0.050)	0.05 (0.031)	0.17 (0.112)	0.07 (0.031)
Other	0.42 (0.082)	0.49 (0.042)	0.46 (0.039)	0.35 (0.262)	0.36 (0.116)	0.36 (0.106)	0.19 (0.106)	–	0.14 (0.089)
Total	0.40 (0.024)	0.48 (0.016)	0.45 (0.134)	0.42 (0.050)	0.49 (0.039)	0.45 (0.032)	0.10 (0.032)	0.04 (0.030)	0.09 (0.026)

Notes: * Significance at the 5% level for Africans in HBIs and Africans in HWIs. Bold indicates significant difference at 5% of Africans with white people.

Unemployment rates for whites at HBIs were excluded from the table because of the small number of whites enrolled in those institutions.

compared with 5%), and this difference was statistically significant. Furthermore, within the same field, barring Education, the total unemployment rates for Africans who studied at HWIs are lower than those of their counterparts who studied at HBIs, and these differences were statistically significant at 5%. For Africans enrolled in Business fields, the unemployment rate for those who attended HWIs (42%) is 11 percentage points lower than the unemployment rate for those from HBIs (53%). It is interesting to note that while there is no significant difference in the unemployment rates of African graduates and non-completers who studied Education at HBIs (9% and 10 % respectively), the difference in unemployment rates for their HWI counterparts is large (24% and 51% respectively), suggesting a large premium for graduating from a HWI.

Given the above estimates, it is clear, in the first instance, that HBIs are much poorer in ensuring success in the labour market for their client base than HWIs, even when controlling for field of study and race. Ultimately, however, perhaps the most stinging indictment yet of employment practices in the domestic economy is that, on the basis of this evidence, even when type of institution and field of study are controlled for, African graduates are finding it distinctly harder to secure employment than their white counterparts.

The continued significant differential in unemployment rates for Africans and whites at HWIs, even when we control for field of study, is early evidence of at least two possible determinants of the labour market outcomes that will be investigated in our multivariate analysis. Firstly, employer discrimination must feature as a key factor in explaining these estimates, and we will attempt a more formal determination of this in our analysis section. Secondly, the estimated unemployment rates for white non-completers, which are significantly lower than those of African non-completers, suggest the existence of informal networks that improve both search behaviour and the probability of finding employment for this cohort.

TABLE 7.9 *Nominal mean monthly earnings for graduates and non-completers, by gender*

Population group	Male		Female		Total
	Graduates	Non-completers	Graduates	Non-completers	
African	13 072 (29 322)	5 163 (12 208)	9 285 (22 112)	5 909 (13 669)	8 492 (21 002)
Coloured	14 949 (32 173)	4 182 (4 046)	5 905 (4 988)	3 886 (2 853)	7 393 (17 578)
Indian	25 597 (55 837)	5 726 (6 423)	7 091 (3 868)	7 924 (8 374)	16 122 (41 021)
White	16 679 (32 993)	5 363 (3 066)	7 373 (11 209)	7 825 (6 202)	10 249 (21 342)
All races	15 195 (32 679)	5 136 (7 701)	7 982 (16 376)	5 962 (11 976)	9 149 (21 535)

Notes: Standard errors are reported in brackets and are corrected for by person weights. Bold indicates significance at 5% or 10% level of Africans with whites.

Data are calculated on the weighted sample.

Earnings

The second labour market outcome to be investigated here is earnings. Table 7.9 shows the mean monthly earnings for graduates and non-completers disaggregated by gender.

While the mean earnings estimate for African males is lower than that of white male graduates, this difference was not significant at the 10% level. The high standard deviations for graduates relative to non-completers show the high dispersion in earnings among graduates. The mean monthly wage for a female graduate is R7 982, whereas for a male graduate the corresponding estimate is more than double that, at R15 195. This suggests a large gender bias in the allocation of wages. Indeed, while the mean monthly earnings for female graduates and non-completers are similar (R7 982 and R5 962 respectively), the mean monthly earnings of males graduates (R15 195) are almost three times the earnings of male non-completers (R5 136), suggesting a much starker male premium for graduates relative to non-completers.

The estimates presented in Table 7.9 revealed that the overall mean monthly earnings for Africans are lower than those of whites. In order to control for differences in mean monthly earnings due to field of study and nature of employment, as well as to obtain a more nuanced picture of any differences in earnings between Africans and whites by institution, earnings were re-estimated by field of study (Table 7.10), and sector and occupation (Table 7.11). It must be noted that whites constituted less than 2% of the sample that studied Education. Thus the earnings estimates for that field should be treated with caution.

Table 7.10 suggests that there are disparities in the earnings of the different cohorts within the same field. However, the differences in earnings estimates, though large, were rarely statistically significant. Yet certain results do emerge. In the field of Humanities, the earnings of white graduates and non-completers are significantly higher than those of their African counterparts. Furthermore, within that field, Africans from HWIs earn more than their counterparts from HBIs (R13 570 and R4 128 compared with R9 184 and R3 587 for graduates and non-completers respectively).

TABLE 7.10 *Nominal mean monthly earnings for Africans and whites, by field*

Field	Historically black		Historically white			
	African		African		White	
	Graduate	Non-completer	Graduate	Non-completer	Graduate	Non-completer
Business/commerce	7 811 (4 410)	5 710 (2 585)	6 849 (1 063)	4 717 (1 508)	13 515 (2 708)	7 001 (926)
Education	18 801 (5 602)	8 294 (1 446)	10 066 (1 742)	2 250 (742)	5 272 (1 383)	2 476 (1 132)
Humanities	9 184 (1 982)	3 587 (321)	13 570 (4 725)	4 128 (1 839)	10 186 (2 331)	5 577 (272)
Science, engineering & technology	11 882 (2 244)	4 768 (371)	11 116 (2 585)	3 131 (562)	14 397 (2 077)	7 574 (1 908)
Other	3 821 (748)	6 508 (1 575)	14 669 (10 901)	6 022 (2 789)	16 630 (6 064)	7 199 (62)
All fields	11 980 (1 974)	6 098 (660)	10 797 (1 510)	4 016 (703)	13 151 (1 409)	6 594 (552)

Notes: Income calculated using uniform distributions. Standard deviations shown in parentheses. Bold indicates significance at 5% or 10% level of Africans with whites. No significant difference at 5% of Africans from HBIs with Africans from HWIs.

Missing values indicate that the number of whites in the sample was too small or equal to zero.

Estimates corrected for by person weights.

TABLE 7.11 *Nominal mean monthly earnings for Africans and whites, by sector and occupation*

Sector & occupational skill level	Historically black		Historically white			
	African		African		White	
	Graduate	Non-completer	Graduate	Non-completer	Graduate	Non-completer
Sector						
Primary sectors	13 213 (7 018)	1 934 (657)	2 645 (1 251)	3 776 (588)	20 786 (6 221)	6 161 (1 710)
Secondary sectors	7 740 (1 422)	4 557 (1 857)	9 525 (2 351)	4 683 (938)	12 567 (4 084)	7 038 (1 072)
Tertiary sectors	11 922 (1 986)	4 027 (790)	10 218 (1 454)	6 719 (893)	13 282 (1 582)	6 414 (502)
Occupation skill level						
Skilled	14 307 (2 809)	7 893 (1 036)	13 014 (1 969)	5 991 (1 540)	14 301 (1 597)	7 009 (847)
Semi-skilled	8 433 (1 973)	3 416 (270)	3 376 (586)	3 609 (627)	5 962 (1 070)	639 –
Unskilled	1 416 (494)	1 126 (234)	11 431 (0)	1 077 (184)	2 691 (471)	5 961 –

Notes: Income calculated using uniform distributions. Standard deviations shown in parentheses. Bold indicates significance at 5% level of Africans with whites.

Estimates corrected for by person weights.

Tertiary sectors exclude other or unspecified categories.

Table 7.11 augments our analysis of wages by race and institution type by further disaggregating monthly wages to control for sector and occupation skill level.³¹ From the earnings information, certain trends are evident.

The estimates presented in Table 7.11 suggest that when controlling for occupation and sector, the key differential is invariably that between Africans at HBIs and Africans at HWIs. Little significant earnings differential is present between Africans and whites at HWIs when controlling for type of employment. Notably, this result, in contrast to earlier evidence, alludes to significant contrasts in employment probabilities for those two cohorts.

As expected, wages of skilled workers are significantly higher than the wages of lower skilled workers, and graduates have wages that are significantly higher than those of non-completers in most cells. However, care must be taken when interpreting the data since certain estimates, such as those for the mean wage of white non-completers in unskilled occupations (which are higher than the estimate for white graduates), may not be very reliable because of the small sample size in that cell (only 5% of the 5 598 whites in the sample were working in unskilled occupations).

The determinants of earnings will be further investigated in our multivariate analysis that follows, in order to obtain a more accurate assessment of the determinants of income for the sample.

Outcomes in the labour market suggested, as expected, a poorer performance of non-completers relative to graduates, consistent across race, institution and field of study. When controlling for field of study, unemployment rates are highest for Africans who studied at HBIs in the aggregate sample. Perhaps the most worrying estimate, however, remains the higher unemployment rates for Africans relative to whites at HWIs, even when controlling for field of study. This result will be further explored below. Finally, our results showed little evidence of an earnings differential between Africans and whites from HWIs, with most of the gap present among Africans at HBIs relative to HWIs. This result is also examined in the multivariate analysis that follows.

Graduation, employment and earnings: A multivariate analysis

The descriptive analysis showed, in a discrete manner, how different variables may impact on whether graduates are employed in the labour market and on their level of earnings. In practice, however, a wide range of variables simultaneously interact to determine these outcomes. A simple descriptive analysis cannot provide information about the individual contributions of these variables. For example, an analysis by race of, say, graduation and non-completion rates would, by design of course, be unable to account for how age, location and gender simultaneously also influence these rates. The standard methodological solution is to incorporate the variables identified in the descriptive analysis into an econometric model. This model simultaneously estimates the marginal contributions of each of these variables on employment and earnings.

31 Sector was grouped into Primary, Secondary and Tertiary sectors, and Occupation was classified by skill level. The estimates for individual sectors and occupations are not shown because of the relatively small portion of the sample in certain sectors and occupations that did not allow for reliable conclusions to be drawn from the individual estimates. Primary sectors are Agriculture, and Mining and Quarrying. Secondary sectors are Manufacturing, Utilities, and Construction. Tertiary sectors are Wholesale and Retail Trade, Transport, Storage and Communication, Financial and Business Services, and Community, Social and Personal Services. Occupations were converted to level of skill, in accordance with the skill level reference used in the South African Standard Classification of Occupations released by Statistics South Africa. Skilled occupations were defined as Managers, Technicians, and Professionals. All other occupations were semi-skilled, with the exception of Elementary Occupations, which were classified as unskilled.

Our model is set up in three stages and deals sequentially with the determinants of graduation, employment and wages. First, we begin with the full sample of survey participants and estimate a graduation probability model. Next, utilising the full sample of graduates and non-completers, an employment probability model is estimated. Finally, we estimate an earnings function using the reduced sample of those who succeeded in finding employment.

Econometric approach

Two probits³² will be estimated, followed by an Ordinary Least Squares linear regression model. The first probit will investigate the factors that influence the likelihood of graduating. The probit model is used to determine whether these factors do indeed change the likelihood of graduating, as well as quantifying the marginal effects of the variables. The second probit will investigate the factors that may change the probability of finding employment.

The dependent variable in our first model is a dummy variable, which is equal to 1 for graduates and 0 for non-completers. Since the dependent variable was categorical, a probit model was used to estimate the probability of graduating. The equation we wished to estimate took on the following form:

$$\Pr(Y = 1 \mid X = x) = \phi(x'\beta)$$

where Y was the binary dependent variable equal to 1 for graduates and 0 for non-completers, X a vector of regressors, β the parameters to be estimated, and ϕ the standard normal cumulative distribution function. The independent variables included both categorical and continuous variables, consisting of household variables such as parental income and parental education, individual characteristics (age, gender, race, home language, etc.), variables measuring SES, characteristics of the school attended (type of school, grades achieved in the SCE, etc.), and characteristics of the higher education institution in which the student was enrolled.

The employment probit uses the same approach as the graduation probit. The dependent variable is equal to 1 if the individual is employed and 0 if unemployed. In the employment equation, some of the household variables are dropped. The explanatory variables included are those containing information about the personal characteristics of the job seeker (age, qualification, field, province).

Our second estimation, a semi-logarithmic earnings function, is based on a continuous and not categorical dependent variable. A normal Ordinary Least Squares estimation approach will therefore be used. The independent variables include sectoral and occupational dummies, the log of monthly hours, experience (age squared) as well as the individual characteristics of the job seeker included in the employment equation.

The estimates derived in the employment earnings models may be affected by selection bias, given that they are both based on non-random, reduced versions of the original sample of potentially employable graduates and non-completers.³³ When estimating a wage equation, only the wages of working individuals may be observed. But the probability of working may be correlated with the wage. The Ordinary Least Squares method, if used in this case, would suffer from omitted variable bias, namely through the impact of our selection procedure, and would therefore yield biased estimates. Thus, to control for the possibility of sample selection bias, a probit model will be used

32 A probit model estimates the factors that influence the probability that an event A may occur, where $0 \leq P(A) \leq 1$.

33 This problem was first identified and subsequently solved by Heckman (1979).

to derive the employment probability estimates. The Heckman two-step approach will be adopted (Bhorat & Leibbrandt 2001; Breen 1996; Greene 1993). Once the employment–unemployment probit is estimated, the inverse Mills ratio (lambda) estimate will be included in the earnings equation. The inclusion of this lambda in the earnings equation allows us to control for possible selection bias by making the earnings equation conditional on selection into employment. To allow for the possibility that the selection into employment and the determination of earnings are simultaneous rather than sequential processes, a second set of estimates for both the employment and the earnings equations will then be derived using a one-step maximum-likelihood model (Bhorat & Leibbrandt 2001).

Model results

Tables 7.12, 7.13 and 7.14 present the influence of the different covariates on the probability of graduation, employment, and the level of earnings of the employed.³⁴ For the covariates which are dummies, the following are the referent variables:

- Race: White
- Gender: Male
- Institution type: Historically white
- University or technikon: University
- Type of qualification (Degree or Certificate/Diploma): Certificate/Diploma³⁵
- Field: SET
- School attended: Urban
- Age: 16–25
- Province: Western Cape
- Occupation: Elementary workers
- Sector: Manufacturing

Referents were chosen on the basis of their share in the sample. The results from the graduation probit are shown in Table 7.12.

In Specification I, all relevant variables were included. In the second specification, the dummy for HBIs was excluded, along with the ‘English is home language’ variable, to account for the possibility that those variables were masking the effect of other variables on the probability of graduating, because of a correlation with the race dummies. In the third specification, dummies were created to capture the effects of both race and institution type (whites at HWIs were chosen as the referent; whites at HBIs and Indians at HBIs were excluded because of the insignificant sample sizes of those cohorts). In the last specification, field of study was excluded. Specification III is our preferred specification since it provides a more detailed assessment of individual effects on the probability of graduating within each race group, on the basis of institution, without masking these effects.

34 All estimates derived in the following sections are from the weighted sample. The weights were constructed to account for race, gender, institution and field, for graduates and non-completers.

35 Degree qualifications were defined as BTech, bachelor’s, honours, master’s and doctoral degrees. Certificate/diploma qualifications were taken as a University Certificate/Diploma, National Certificate, National Higher Certificate, National Diploma, or Postgraduate Certificate/Diploma type qualification. Although we would expect there to be co-linearity between the technikon and certificate/diploma variables, as well as between the university and degree qualifications, a pure proxy effect did not exist: 39.1% of those enrolled at technikons were enrolled in degree-type qualifications while a significant number of individuals at universities were enrolled in certificate/diploma-type qualifications (28.5%). Thus, both the type of qualification (degree versus a certificate/diploma) and a technikon dummy were included in the probits.

TABLE 7.12 *Results from graduation probit*

Dependent variable: Probability of graduation	X-bar	Marginal effects			
		I	II	III	IV
Individual characteristics					
African	0.5234	-0.1097***	-0.1258*	-	-0.0852
Coloured	0.1100	-0.1518***	-0.1292	-	-0.1410
Indian	0.0265	-0.3720*	-0.2765**	-	-0.3463*
Female	0.5730	-0.0759***	-0.0747***	-	-0.0599
African-HBI	0.3840	-	-	-0.4257*	-
African-HWI	0.1394	-	-	-0.3669*	-
Coloured-HBI	0.0533	-	-	-0.3702*	-
Coloured-HWI	0.0567	-	-	-0.4116*	-
Indian-HWI	0.0209	-	-	-0.5221*	-
Other-HBI	0.1702	-	-	-0.4354*	-
Scholarship/Loan	0.4919	0.1726*	0.1462*	0.1779*	0.1462*
Lectured	0.9439	-0.0601	-0.0914	0.0837	-0.0914
HBI	0.0674	-0.1342*	-0.1437*	-	-0.1545*
Technikon	0.5216	-0.0453	-0.0547	0.0486	-0.0608
Degree qualification	0.5433	0.0820***	0.0879**	0.0730***	0.0905***
Humanities	0.2901	-0.0571	-0.0437	-0.0631	-
Education	0.0935	-0.2133*	0.2136*	0.2016*	-
Commerce	0.1878	-0.0734	-0.0692	-0.1054	-
Other field	0.1149	-0.1742	-0.1782	-0.2012	-
Schooling characteristics					
Rural school attended	0.0663	-0.1726**	-0.1708**	-0.2359*	-0.1708**
Entry points	4.4356	-0.0134	0.0093	-0.0133	0.0093
Mathematics scores	2.6182	0.0185***	0.0191***	0.0155	0.0191***
Household characteristics					
Years of parental education	5.077	-0.0297	-0.0315	-0.0284	-0.0315
Parent who graduated	0.4540	0.1076	0.1164	0.1207	0.1164
Home language is English	0.1870	0.1529*	0.1491	0.1396**	0.1491*
Siblings with tertiary degree	0.4797	0.0913**	0.0840*	0.0990*	0.0840**
Household income	8.5876	0.0491*	0.0432**	0.0421**	0.0425**
Siblings studying in an HEI	0.3684	-0.0302	-0.0281	-0.0330	-0.0281
Tuition paid by parents	0.5180	0.0044	-0.0325	-0.0014	-0.0325
Observed probability		0.5689	0.5689	0.5689	0.5689
Predicted probability (at x-bar)		0.5895	0.5874	0.5994	0.5874
Number observed		1.673	1.673	1.673	1673
Chi²		188*	171*	165	171*
Pseudo R²		0.1498	0.1315	0.1665	0.1315

Notes: *Significant at the 1% level.

**Significant at the 5% level.

***Significant at the 10% level.

From the results, it is clear that both race and gender are highly significant in determining whether or not a student graduates. The dummy variables for Africans, coloureds and Indians were all significant and negative, suggesting that these population groups have a lower probability of graduating than whites, even when controlling for household effects, type of institution, and field of study. The dummy variable for females was also negative and significant, suggesting that females have a lower probability of graduating than males. The key result, made clear in examining Specification III, is that Africans at HWIs and at HBIs have a lower probability of graduating than their white counterparts, controlling for performance in matriculation and field of study.

The results reveal that household variables are to an extent important in determining how likely an individual is to graduate. Household income, speaking English as a home language, and having a sibling who completed a tertiary degree all increase the probability that a student will graduate. The household income variable is significant and the positive coefficient suggests that the greater the value of parental income, the more likely the student is to graduate. However, the dummy variable for whether or not the student's tuition was paid by parents as opposed to being derived from another source was insignificant.

The fact, though, that finances do play a role in affecting the likelihood of graduating is reinforced by the significant and positive coefficient for the scholarship/loan variable. Thus, students who receive a scholarship or loan to cover their tuition expenses are more likely to graduate than those who do not receive any state funding. Students with a sibling who completed a tertiary degree have a higher probability of graduating. Surprisingly, the parental education variable was not significant at even the 10% level, suggesting that whether or not a student's parents secured a tertiary degree did not affect the probability of graduation.

The argument that socio-economic background may be of some importance in determining graduation is strengthened by the significant coefficient on the 'Home language is English' dummy variable. This suggests that students speaking English as a home language have a higher probability of graduating than students for whom English is a second language, even when controlling for race. This is an interesting finding since most higher education institutions in South Africa use English as the medium of instruction. Cosser (2003) finds that almost 95% of students are taught in English, yet only 10% speak English at home. It is important to note, however, that the fact that 6% of Africans in the sample reported English as their home language does not render this a pure proxy effect for white students.

Schooling characteristics also play an important role in impacting on the probability of graduating. The location of the school attended, captured by the rural dummy variable, was significant. This suggests that students who attended a rural school for matriculation faced a lower chance of completing their degree than students who attended an urban school. Matriculation performance was also shown to be important. Scores in Mathematics at the matriculation level are important in influencing the probability that a student will graduate: the higher a student scores in Mathematics at the matriculation level, the higher the probability that he or she will complete a degree programme. However, the 'entry points' variable that captured the aggregate matriculation performance in subjects, excluding Mathematics, (performance in English plus four other best subjects), was not significant, indicating that the screening process used in determining eligibility for admission into tertiary education may not be completely reliable. Performance in Mathematics in matriculation is therefore important in determining performance in tertiary institutions (but not necessarily performance in other subjects).

In addition to individual, household and schooling characteristics, the tertiary institution variables are also important. The dummy variable for HBIs is significant, and the negative coefficient suggests that students who attended an HBI have a lower probability of graduating compared to students who

attended an HWI. The field of study³⁶ that the student pursues at the higher education institution is also an important determinant of graduating. The SET field was selected as the referent since a large share of the sample was enrolled in that field. The field dummy variable for Education was significant. Students enrolled in Education have a higher probability of graduating than those enrolled in the SET field. This may be a reflection of the higher institution requirements for students who wish to enrol in SET programmes. For instance, enrolment in SET programmes may require higher scores in Mathematics and higher entry points.

The above results suggest that even when controlling for a variety of detailed household and institutional factors, race continues to be a significant determinant of the probability of a student graduating. In addition, however, even with a variety of individual and household controls in place, it is clear that HBIs have a significantly lower probability of producing graduates relative to HWIs. These two results are powerful and very worrying within the context of both higher education and labour market policies in South Africa.

The determinants of labour market outcomes: Employment and earnings equations

Having considered the determinants of graduation, we proceeded to investigate the factors affecting labour market outcomes. As with the graduation probit, a number of specifications were included for the employment probit. The estimates that follow were calculated using the broad definition of unemployment and include discouraged work seekers (1.4%) in the sample.³⁷ Once again, Specification III is preferred since it provides a more detailed assessment of the individual effects on the probability of being employed within each race group, on the basis of institution, without proxy variables.

The results from the employment probit are shown in Table 7.13.

It remains disturbing that even within a multivariate context, race and gender are significant determinants of employment. The key result here, made clear in Specification III, is that, controlling for other factors, Africans at HBIs and HWIs have a lower probability of securing employment relative to whites at HWIs. In this specification of the employment probit, the dummy for Africans at HWIs is significant and negative. Hence the result suggests that even when we control fully for differences due to the quality of education and field, Africans at HWIs still have a lower probability of finding employment than whites at these institutions. Indeed, the dummy variables for race and gender are significant across all specifications of the employment probit. Being African lowers the probability of finding a job relative to being white, and being female lowers the probability of finding employment relative to being male, even when controlling for a range of individual characteristics, including field of study and institution type.

The results from Specification III, albeit worrying, may not be solely the result of discrimination in the labour market. There could be other variables on the basis of which the selection process in employment is made, such as student performance in the higher education institution. One of the determinant factors may be the grades obtained at the institution. Since the dataset did not contain information on

36 Out of approximately 29 000 students in the sample, 17% were enrolled in Business, 12% in Education, 32% in Humanities and 28% in SET. For Africans, the enrolment by field was as follows: 18% in Business, 18% in Education, 33% in Humanities and 24% in SET; for whites, 13% in Business, 2% in Education, 30% in Humanities and 36% in SET.

37 The employment equations were re-estimated using the narrow definition of unemployment. However, there was no significant difference in the results from the employment probit under the broad and narrow definitions.

TABLE 7.13 *Results from employment probit*

Dependent variable: Probability of employment	X-bar	Marginal effects			
		I	II	III	IV
Individual characteristics					
Graduated	0.5368	0.0037	0.0007	0.0084	-0.0002
African	0.5692	-0.2811**	-0.2865**	-	-0.2666**
Coloured	0.1188	-0.0713	-0.0607	-	-0.0741
Indian	0.0235	0.0639	0.0903	-	0.0826
Female	0.5437	-0.1681**	-0.1650**	-0.1658**	-0.1568
HBI	0.6376	0.0423	-	-	0.0454**
Technikon	0.5657	0.0719*	0.0708*	0.0594*	0.0636*
Degree qualification	0.5288	0.0330	0.0366	0.0307	0.0221
Africans from HBIs ⁱ	0.4241	-	-	-0.2248**	-
Africans from HWIs	0.1451	-	-	-0.2647**	-
Coloureds from HBIs	0.0602	-	-	0.0324	-
Coloureds from HWIs	0.0587	-	-	-0.0505	-
Indians from HWIs	0.0148	-	-	0.1003	-
Other from HBIs	0.1533	-	-	0.1164	-
Humanities	0.2921	-0.0265	-0.0190	-0.0274	-
Education	0.0931	0.2145**	0.2168**	0.2127**	-
Commerce	0.1962	0.0520	0.0540	0.0554	-
Other field	0.1195	0.0642	0.0724	0.0641	-
Mathematics scores in Matriculation	2.3807	0.0251**	0.0243**	0.0260**	0.0275**
Used social network ⁱⁱ	0.2966	0.0232	0.0253	0.0199	0.0318
26-35	0.3663	0.0688**	0.0678**	0.0672**	0.0878**
36-45	0.0803	0.1991**	0.2018**	0.01995**	0.2487**
46-55	0.0171	0.1854**	0.1882**	0.1845**	0.2295**
Eastern Cape	0.0675	-0.1545**	-0.1440**	-0.1597**	-0.1948**
Free State	0.0304	-0.0258	-0.0106	-0.0263	-0.0569
Gauteng	0.3576	0.0299	0.0476	0.0234	-0.0234
KwaZulu-Natal	0.0269	-0.0110	-0.0034	-0.0214	-0.0308
Limpopo	0.0993	-0.1651**	-0.1386**	-0.1645**	-0.1830**
Mpumalanga	0.0642	-0.0258	-0.0005	-0.0258	-0.0363
Northern Cape	0.0212	0.0662	0.0676	0.0631	0.1312
North West	0.0429	-0.0937	-0.0732	-0.0941	-0.0742
Household characteristics					
English is home language	0.1760	0.0496	-	0.0559	0.0428
Parent employed	0.6608	0.0064	0.0090	0.0076	0.0013
Parent graduated	0.4099	0.0559	0.0090	0.0561*	0.0559
Observed probability	-	0.6934	0.6934	0.6934	0.6934
Predicted probability	-	0.7582	0.7572	0.7597	0.7545
Number observed	-	2965	2.965	2.965	2.965

Dependent variable: Probability of employment	X-bar	Marginal effects			
		I	II	III	IV
Chi ²	–	468**	457**	495**	409**
Pseudo R ²	–	0.2444	0.2427	0.2460	0.2217

Notes: i Whites at HWIs were chosen as the referent. Indians and whites at HBIs were included in the 'Other from HBIs' category. They constituted 1.4 and 0.05% of the sample at HBIs respectively.

ii Thirty per cent of the employed had found their job through a personal contact. Furthermore, a significantly higher proportion of whites than Africans had made use of a social network in the job search process. Since the dataset contained information on the job search methods used for both the unemployed and the employed in the sample, a dummy variable was created that was 1 if the individual used a personal contact or social network, and 0 if another method of job search was employed. Other search methods included advertisements, direct application, employment agencies, and recruitment at the higher education institution.

*Significant at the 5% level.

**Significant at the 1% level.

grades obtained at the tertiary institution, and since Mathematics scores in matriculation were shown to be a significant determinant of graduation, this variable was included in the employment probit as a proxy for performance in subjects in the higher education institution.

Performance in Mathematics at the matriculation level was found to be significant across all specifications, suggesting that those who had higher Mathematics scores in the SCE had a higher probability of finding employment. This proxy for relative performance at the higher education institution could arguably be a factor influencing employer decisions in the hiring process. Employers may thus be using grade performance, in addition to whether an individual is a graduate or not, in their hiring process. However, even when controlling for grades obtained, Africans at HWIs and HBIs were still found to have lower employment probabilities than their white counterparts.

While household-level characteristics were shown in the previous chapter to be an important determinant of graduation, the results show that they are not significant in influencing the probability of employment. Some of the household variables that were included in the graduation probit, such as 'household income', were excluded from the employment probit. Among the household-level variables included were a dummy variable for parents with a tertiary qualification and a dummy variable for individuals with at least one employed parent. The results show, however, that individual characteristics such as race, gender and age are more important in determining employment outcomes than are household variables.

Surprisingly, the graduation dummy was insignificant. This suggests that whether individuals complete a tertiary qualification or drop out during the course of their studies does not have any bearing on the probability of finding employment. This may be attributed to the fact that the non-completers in our sample have completed some years of tertiary education and perhaps also acquired some soft skills while at the higher education institution, which may give them some employability advantage over those without any tertiary education.

Another important result is that field of study plays a central role in determining labour market outcomes. A rather unexpected result is that students who specialised in Education have a higher probability of finding employment relative to those who studied in SET fields. However, the results for Education may be due to a sample size effect: Africans constitute a dominant share in the sample of those who studied Education (92% of the 3 555 enrolled in Education in the sample were African). Indeed, less than 2% of whites in the sample studied Education. The higher probability of finding

TABLE 7.14 *Earnings equation*

Categories	Coefficients			
	I	II	III	IV
Graduated	0.1938**	0.2105**	0.1813**	0.2507**
African	0.2241	0.2089	–	–0.2858**
Coloured	0.0368	0.0266	–	–0.0816
Indian	–0.0899	–0.0649	–	–0.0564
Female	–0.1110	–0.1134	–0.1261	–0.3276**
HBI	–0.0947	–	–	–0.1379
Technikon	–0.2127**	–0.2427**	–0.1617*	–0.1072
Degree qualification	0.1222*	0.1707*	0.1257*	0.1783**
Africans from HBIs	–	–	0.0341	–
Africans from HWIs	–	–	0.0909	–
Coloureds from HBIs	–	–	–0.0988	–
Coloureds from HWIs	–	–	–0.0574	–
Indians from HWIs	–	–	–0.3028	–
Other from HBIs	–	–	–0.2470*	–
Home language is English	0.0325	–	0.0248	0.0904
Humanities	–0.1370	–0.1470	–0.1379	–
Education	–0.7135**	–0.6214**	–0.6980**	–
Commerce	0.0061	0.0063	–0.0001	–
Other field	–0.2694**	–0.2885**	–0.2708**	–
Eastern Cape	0.3001*	0.2809*	0.3133*	–
Free State	0.0577	0.0253	0.0738	0.1153
Gauteng	0.2352**	0.2103*	0.2666*	0.2867**
KwaZulu-Natal	0.6636**	0.6525**	0.6855**	0.6511**
Limpopo	0.4492**	0.4011**	0.4621**	0.2992*
Mpumalanga	0.2858	0.2425	0.2942	0.3118*
Northern Cape	0.2385	0.1979	0.2537	0.1641
North West	0.3119*	0.2791	0.3192	0.1849
Agriculture	0.0156	0.0045	0.0171	0.0351
Mining	0.5313**	0.5406**	0.5194**	0.5988**
Electricity	0.3942**	0.4047**	0.3988**	0.5082**
Construction	–0.0250	–0.0310	–0.0245	–0.0171
Wholesale trade	–0.5054**	–0.5001**	–0.5053**	–0.5301**
Transport	0.1152	0.1171	0.1200	0.0840
Finance	0.1201	0.1248	0.1200	0.1241
Community/social services	0.0721	0.0693	0.0699	0.0398
Managers	0.8002**	0.7876**	0.8167**	0.7892**
Professionals/technicians	0.6051**	0.5952**	0.6222*	0.5869**
Clerks	0.1981	0.1894	0.2122	0.2031
Service and sales workers	0.2122	0.2010	0.2367	0.2086
Skilled agricultural workers	0.4957**	0.4665*	0.5078**	0.5011*

Categories	Coefficients			
	I	II	III	IV
Craft and trade workers	0.1418	0.1356	0.1543	0.1005
Operators and assemblers	0.4325*	0.4295*	0.4562*	0.4817*
Experience	0.0784**	0.0772**	0.0784**	0.0885**
Experience squared	-0.0013*	-0.0012*	-0.0013*	-0.0014*
Log of hours per month	0.3505**	0.3512**	0.3463**	0.3376**
Constant	5.9631**	5.9719**	6.0148**	5.6792**
Lambda ⁱ	-1.0098**	-1.0094**	-0.9792**	0.0025*
Number observed	1.588	1.588	1.588	1.588
F	17.26**	17.65**	16.86	16.94
R ²	0.3935	0.3912	0.3947	0.3702

Notes: i In the earnings equation, the coefficient for lambdas was significant in the first three specifications at the 1% level, indicating that there was selection bias that was corrected for. Lambda represents the inverse Mills ratio, and provides a measure of the selectivity bias in the sample. The significant result suggests that there was sample selection bias which needed to be corrected for (Bhorat & Leibbrandt 2001). Put differently, the employed earners in this sample do not look like a random sample chosen from our original sample of graduates and non-completers. Thus the significance of lambda vindicates the selection procedure utilised here.

*Significant at the 5% level. The monthly wages were estimated from the bracket estimates provided in the dataset.

**Significant at the 1% level

employment for those in Education relative to those in SET fields may be explained further by the fact that, in our sample, for those enrolled in SET fields, a large share were non-completers (44% for the whole sample, and 54% of those from HBIs). Put simply, lower throughputs in SET have a significant bearing on the labour market outcomes for this cohort of non-completers.

A result possibly relevant to policy is that the technikon dummy variable was found to be positive and significant across all four specifications, suggesting an increased probability of finding employment for individuals who studied at technikons rather than universities.

The fourth specification, in which field of study was excluded, serves to show how field of study masks the effect of the race and institution type dummies on employment and earnings. In the employment probit, when field is excluded, the dummy for HBIs becomes significant. However, this specification is subject to omitted variable bias since race masks the effect of field on employment.

As expected, the age dummy variables for the older age groups were significant across all specifications of the employment probit. In addition, all significant coefficients for the age variables have a positive sign, suggesting that the probability of employment increases with age, thus highlighting the national problem of youth unemployment (the youngest cohort, 16–25) in the labour market.

The results obtained show that, given labour demand needs and a certain level of human capital, race still influences the probability of finding employment. Even when fully controlling for type of institution and degree, Africans at HWIs have a lower probability of finding employment than whites. There are two possible reasons for this differential in employment probabilities for Africans and whites at HWIs. The first is that employers continue to discriminate against prospective African candidates. The second is that there are other characteristics on the basis of which employer decisions are made that we cannot control for because of the limitations of the information in our dataset.

Table 7.14 presents the results from the earnings equation. The earnings function was estimated using only the employed (graduates and non-completers) in the sample. The dependent variable in the earnings function was the log of total monthly wage. Since the earnings equation used only the employed in the sample – that is, 56.6% of the sample of 29 158 graduates and non-completers – the employment probit and the earnings function were, as noted above, estimated together using the Heckman (1979) approach to account for selection bias. As with the employment probit, the preferred specification here is Specification III.

Unlike in the employment process, in the earnings stage of the selection process, demographic variables are no longer significant. When controlling for field of study, there is no differential in earnings on the basis of race, gender³⁸ and institution. This result is encouraging and may suggest that although race and gender may negatively impact on the probabilities of graduation and employment, once individuals are in the labour market and employed, there is no premium in earnings for those who had an advantage at the point of labour market entry. This implies that a sorting process takes place at the employment stage, and that for those who pass through the selection process, there is no differential in earnings.

As with the employment probit, field of study and qualification type are important determinants of earnings. The earnings estimates show, however, that those who studied Education earn between 62% and 71% less than those with SET qualifications. The importance of field of study in determining labour market outcomes is clearly seen in Specification IV, where field is excluded and the race variables become significant. The results from that specification are subject to omitted variable bias, indicating that the race variables mask the effect of field on earnings. The type of qualification obtained is also an important determinant of earnings. Those who obtained a university degree earn significantly more than those who completed a diploma/certificate from a technikon. Thus, while the results from the employment equations previously presented indicated that those who studied at a technikon are at an advantage in the employment stage compared to their counterparts from universities, the earnings results here indicate a trade-off. Although it may lead to a higher probability of finding employment, a technikon education ultimately carries a lower earning potential than a university degree.

Thus our significant results for field and qualification type in determining earnings and employment reinforce the finding that there are clear differences in the employment prospects of graduates with different types of qualifications (degrees or diplomas, university or technikon qualifications) or of graduates in different fields of study. The fact that HBIs have ‘disproportionate numbers of students graduating in fields with lower employment prospects’ has been noted (Moleke 2005: 5). Indeed, in our sample, 45% of the 7 403 students who studied at HBIs studied Humanities and Commerce. At HWIs the dominant share of students studied in SET fields (37%). Thus our results for the earnings equations are encouraging as they show that when controlling for field of study, there is no differential in earnings on the basis of race, gender and institution type.

An interesting result is that, while graduation was not found to be significant in the employment results, it is a significant determinant of earnings. Those with a tertiary qualification earn between 18% and 25% more than those who have not completed the programme leading to their degree, even when we control for occupation and sector.

38 An interesting discrepancy is observed when gender becomes statistically significant at 1% if the employment and earnings equations are re-estimated using the field of study that was self-reported in the questionnaire by respondents. However, the fields of study used here were chosen to be the fields determined by the HSRC on the basis of university records, since this was taken to be more reliable than self-reported information.

As expected, results for the occupational dummies show that within the skilled occupations – that is, managers as well as professionals and technicians – individuals are likely to earn between 59% and 82% more than those working in unskilled occupations (Elementary occupations in the manufacturing sector). Approximately 70% of the sample was working either as managers or professionals, and thus the conclusions that can be drawn from the other occupational dummies are limited.

The 'experience' variable indicates that an additional year of experience generates a return to earnings of about 8% to 9%. The negative and significant coefficient for the experience squared variable indicates diminishing returns to experience. The log of hours worked is also significant. A 1% increase in hours worked increases earnings by about 34% to 35%. This finding is interesting, since the mean sample is working about 35 hours per week. This finding is not contingent, therefore, on the presence in the sample of a significant number of part-time or infrequent workers.

Ultimately then, one of the key results here is that, as was suggested in the descriptive evidence above, race, gender and institution type are significant determinants of earnings for graduates and non-completers. The evidence presented suggests therefore that a sorting process takes place at the employment stage that generates race and gender differentials. These differences are then completely eroded within the sample of wage earners.

Conclusions

The results from our analyses indicate that race continues to be a significant determinant in South Africa of the probability of outcomes such as graduation and employment, and this remains the key variable in this study even when controlling for institution type and field of study. However, when the African sample of approximately 18 000 individuals is reduced to 46% to estimate an earnings function of the employed, no differential in earnings is apparent on the basis of race. Thus individuals are selected into employment on the basis of a number of characteristics but, once over the entry-into-employment hurdle, the race-based differences are eroded.

Another important finding is that while socio-economic variables are important in determining graduation and success in the labour market, they are not crucial. For example, household income and attending a rural school were found to have a significant impact on the probability of graduating, but other variables such as parental education were insignificant in the graduation probit. Indeed, individual rather than household variables were more important in determining labour market outcomes such as employment and earnings.

References

- Bhorat H & Leibbrandt M (2001) Modelling vulnerability in the South African labour market. In M Bhorat, M Leibbrandt, M Maziya, S van der Berg & I Woolard (eds) *Fighting poverty: Labour markets and inequality in South Africa*. Cape Town: University of Cape Town Press
- Breen R (1996) *Regression models: Censored, sample selected, or truncated data*. Thousand Oaks, CA: Sage
- Cosser M (2003) Graduate tracer study. In M Cosser, A Badroodien, S McGrath & B Maja (eds) *Technical college responsiveness: Learner destinations and labour market environments in South Africa*. Cape Town: HSRC Press
- DoE (Department of Education) (2001) *National plan for higher education*. Pretoria: Department of Education
- DoE (2005) *Higher Education Management Information System (HEMIS)*. April. Pretoria: Department of Education
- Greene WH (1993) *Econometric analysis* (second edition). New York: Macmillan Publishing Company
- Heckman J (1979) Sample selection bias as a specification error. *Econometrica* 47: 153–161

- HSRC (Human Sciences Research Council) (2005) *Data-set for the Student Retention and Graduate Destination Study*. Pretoria: Human Sciences Research Council
- Moleke P (2005) *Inequalities in higher education and the structure of the labour market*. HSRC Occasional Paper. Cape Town: HSRC Press
- Van Walbeek C (2004) Does lecture attendance matter? Some observations from a first-year economics course at the University of Cape Town. *South African Journal of Economics* 72(4): 861–883

Afterword

Michael Cosser

The Student Retention and Graduate Destination Study was undertaken in 2005/06 based on data pertaining to the 2002 student cohort and the 2002/03 transition to the labour market. As we near the end of the first decade of the twenty-first century, what changes have taken place in the South African higher education landscape, and how relevant are the chapters in this monograph to understanding them?

The most obvious change has been in the political leadership both of the country and of education. In the wake of the African National Congress's Polokwane Conference in November 2007, Thabo Mbeki was ousted as president of the republic; and in the wake of the general election of April 2009, Jacob Zuma was appointed the new president. In the education arena, the change of government has seen the erstwhile DoE split into two, making way for a Department of Basic Education and a Department of Higher Education and Training. With the creation of a separate department for higher education and training (and the shift of FET Colleges to the new ministry which this nomenclature implies) comes an acknowledgement not only that Education was too large a portfolio for one minister to handle, but that universities and FET Colleges warrant particular attention under their own ministry. These developments bring into focus the special role envisaged for higher education and training in the formation of skills to tackle poverty and assist the South African economy to grow.

On the policy front, the new Minister of Higher Education and Training, Dr Blade Nzimande, has, within his short incumbency, posted two achievements: he has accepted a proposal for the establishment of a body to deal with challenges in higher education institutions, and he has served notice of his intention to review NSFAS.

The acceptance of the proposal to form a body to oversee discrimination in terms of racism and sexism in higher education institutions is a response to the Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions (DoE 2008), drafted by the committee set up by his predecessor, Naledi Pandor. This expert committee of individuals from higher education and civil society investigated progress towards transformation and social cohesion and the elimination of discrimination in public higher education institutions (Khumalo 2009). The investigation was precipitated by growing allegations of discriminatory practices – for example, the notorious Reitz residence incident at the University of the Free State in which white male students humiliated black cleaning staff and, earlier, the unwanted attentions paid to a female academic member of staff by a male Council member at the University of South Africa. It was also precipitated by discriminatory policies within higher education institutions, such as separate residences for students of different races.

On student fees, soon after taking office Nzimande declared his intention of reviewing NSFAS in the light of the obvious limitations of the scheme in meeting the needs of financially needy yet academically capable students. As an excerpt from his notice in the *Government Gazette* puts it:

The overall purpose of the review is to assess the strengths and shortcomings of the current Scheme and to advise the Minister of Higher Education and Training on the short, medium and long term needs for student financial aid in order to promote the twin goals of equity of access and providing free undergraduate education to students from working class and poor communities who cannot afford further or higher education. The review will evaluate different models of student financial aid and make recommendations on the policy and operational changes required to ensure the effective and efficient achievement of these goals, which will enable South Africa to produce graduates with the qualifications and skills required to build our developmental state. (DoE 2009: 4)

Both these initiatives resonate with the work by the HSRC reported on in this monograph. The chapter on inclusion and exclusion at Wits borrows from Jansen's (2004) typology of integration to show that the dominant institutional culture, by alienating students whose own cultures are not catered for, can impact on student retention. Institutional culture is a function of the level of social cohesion that obtains within an institution. Such cohesion lies at the heart of the ministry's report on higher education transformation (DoE 2008).

Letseka, Breier and Visser's chapter, which questions the efficacy of NSFAS in the face of the huge demand for financial aid, and Breier's chapter on dropout (or stop out) at UWC, both highlight the scheme's critical importance as a support structure for financially needy students. That the Ministry of Higher Education and Training should now be seeking to remedy the situation coincides with the release of this monograph, which, through its detailed exploration of the SES of graduates and non-completers alike, has foregrounded the extent of disadvantage in just seven of our higher education institutions.

The chief contribution of this monograph to the higher education sector, however, lies in its identification of the factors that facilitate retention and graduation within the higher education system and entry into the labour market. Each chapter makes its own unique contribution in this regard. Cosser (Chapter 1) shows the extent of disjunction between learner *aspiration* for higher education and student *enrolment* in higher education to be a function of the ability to exercise 'choice'. Letseka, Breier and Visser (Chapter 2) show that poverty is academically expensive. Scott and Letseka (Chapter 3) show that institutional change, being slow, takes prisoners. Breier (Chapter 4) shows that poverty leads to both dropout and stop out. Gibbon (Chapter 5) shows that the tension between success and diversity may be mutually compromising. Moleke (Chapter 6) shows that discrimination persists in labour market absorption of black graduates. And Bhorat, Mayet and Visser show that race remains the most significant determinant of graduation and employment – though not of earnings – in the labour market.

Taken together, these seven chapters show the complexity of the higher education system within seven institutions, a microcosm of the system as a whole. The cartography of issues raised here is sufficiently clear, however, to chart the road ahead. As Nzimande declared in his 2009 budget speech, 'we need to consolidate and deepen the transformation gains made over the last fifteen years, while continuously improving the access and success, particularly of black students at all levels of the system' (Nzimande 2009: 5). To this end, the monograph provides pointers for the redrawing of the higher education roadmap.

References

- DoE (2008) *Report of the Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions*. 30 November. Pretoria
- DoE (2009) Terms of reference for the review of the National Student Financial Aid Scheme. *Government Gazette* No. 32317, 10 June. Pretoria: Government Printer
- Jansen J (2004) Ten years of race, education and democracy. In Idasa *Lessons from the field: A decade of democracy in South Africa*. Cape Town: Institute for Democracy in South Africa
- Khumalo G (2009) New body to deal with challenges in higher institutions. *BuaNews Online*. 10 June. Available at http://www.buanews.gov.za/search97cgi/s97_cgi. Accessed on 11 June 2009
- Nzimande BE (2009) Budget speech of the Minister of Higher Education and Training: 'Together achieving and expanding quality and access to education and training for all.' 30 June. Cape Town: Department of Higher Education and Training

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