

The Student Choice Behaviour Project, Phase 1

From School to Higher Education?

Factors affecting the choices of Grade 12 learners

**Michael Cosser
with Jacques du Toit**



HSRC
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Compiled by the Research Programme on Human Resources Development, Human Sciences Research Council (Executive Director: Dr Andre Kraak)

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Michael Cosser
Project Manager

FOREWORD



With the transition to democratic rule in South Africa in 1994 came the expectation of increased participation in the public higher education system as learners seemed set to embrace the opportunity to access higher learning. Instead, the public higher education system saw a levelling off in headcount enrolments through the latter half of the nineties, with an actual decline in enrolments in the last two years of the decade.

The South African higher education participation rate of between 15% and 18% is below the 20% benchmark given for developing middle-income countries. The *National Plan for Higher Education* observes that there appear to be several factors producing a low participation rate and low retention rate:

- Poor throughput rates in secondary schools;
- A fall in the retention rate in higher education;
- A shift in interest from public to private higher education (a growing number of learners are pursuing qualifications in the private sector that are perceived to present immediate employment opportunities);
- High drop-out rates for reasons either of student inability to continue financing their studies or of academic exclusion; and
- A decline in student entries into postgraduate study programmes directly after their completion of undergraduate programmes.

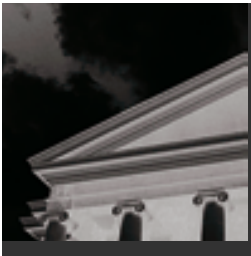
There is clearly a need for in-depth research on these phenomena.

Within this context, a key objective articulated in the *National Plan* is the intention to shift the balance in enrolments from the Humanities – the traditional catchment area for black and women students – to Business & Commerce and Science, Engineering & Technology. This objective seeks to meet the labour market demand for larger numbers of skilled graduates in these scarce-skill fields. Low enrolments in these fields are attributable to the dearth of matriculants with the required proficiency in Mathematics and also to the inadequacy of career counselling programmes in schools. Research is required to provide an understanding of what factors underpin these conditions.

The critical constituency in this domain is, of course, the students themselves. Thus far, very little attention has been given to how they make their decisions regarding options for higher education. Phase One of the HSRC's Student Choice Behaviour project aims to secure an understanding of the factors affecting Grade 12 learners' choices of higher education institution and field of study. The findings of the study confirm and also overturn popular assumptions about how and why young South Africans make the choices they do.

The study concludes with a number of recommendations, inter alia, that:

- Parents and schools seek to provide learners with effective career counselling;
- The Education Ministry increase financial support for eligible higher education candidates;
- The Education Ministry prioritize the establishment of a National Higher Education Information and Applications Service to serve as an applications clearing house; and
- The Education Ministry take learner choices of institutions into careful account in its restructuring of the higher education landscape.

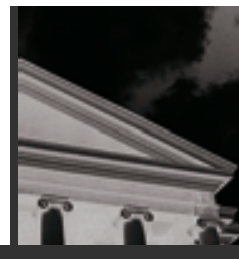


There is also a critical need to promote the image of the teaching profession amongst school learners in the light of the very small interest in enrolling in the field of Education, Training and Development evinced by the survey respondents.

I commend the project team for a carefully executed study, and echo the observation by critical readers of the report that higher education planners and policy makers at the national and the institutional level will find it a valuable contribution to understanding how patterns of student choice determine flows between further education and training (FET) and higher education.

Dr Andrew Paterson
Acting Executive Director
Research Programme on Human Resources Development
Human Sciences Research Council

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EXECUTIVE SUMMARY



1 Purpose of the study

Phase One of the Student Choice Behaviour project aims to investigate the factors affecting learner choice with regard to higher education (HE) – specifically entry into HE, particular institution, and field of study. The investigation is geared towards addressing two key objectives in the *National Plan for Higher Education*: to increase the participation rate in HE; and to shift the balance in enrolments from the Humanities towards Business & Commerce and Science, Engineering & Technology.

2 Procedure

A survey was conducted amongst Grade 12 learners during a two-week period in August 2001. A total of 12 204 learners in 288 schools completed the questionnaire that generated the data for the study. In a two-stage sampling procedure, schools were stratified by province and by pass rate in the 2000 matriculation examinations, and learners were selected by the schools themselves through convenience sampling.

3 Profile of the population

The key biographical findings are the following:

- 48% of respondents are male, 52% female.
- The average age of the population is 19.
- The response profile by population group demonstrates that 82% of respondents are African, 7% coloured, 3% Indian, and 8% white.
- 13% of learners nationally claim to have some physical disability. In Limpopo the figure is 19%.
- The three most popularly spoken languages in the home are IsiZulu (20%), IsiXhosa (17%), and Sepedi (14%). Only 11% of learners speak mostly English at home, while for 82% of learners English is the language of learning at school.
- The socio-economic status (SES) of learners was calculated through reference to the education and income levels of their parents / guardians. The distribution of learner households by SES reveals that 78% of learners' households fall into the low SES category, 17% into the middle, and 5% into the high. Amongst Africans the ratio of low SES to middle SES to high SES learner households is 84%:13%:3%.
- Nearly a third of learners' fathers and mothers have no secondary education whatsoever, while fewer than 1 in 10 learners' fathers and only 8% of learners' mothers have a HE.
- 70% of learners' fathers and 56% of learners' mothers are employed¹, 9% of fathers and 19% of mothers are unemployed, and 15% of fathers and 19% of mothers are not economically active. (The balance of learners do not know the employment situations of their parents.)

¹ The category 'employed' constitutes an aggregation of the questionnaire options 'Working for a company/organization', 'Working for him/herself, on his/her own', 'Working for him/herself and employing other people', and 'Assisting someone else in his/her small business'.

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- 46% of learners' fathers and 67% of learners' mothers earn less than R1000 per month. Only 27% of learners' fathers and 14% of learners' mothers earn more than R3001 per month.
- Approximately a fifth of learners (19%) have siblings currently studying at HE institutions, while 17% have a sibling who is a graduate of a university or technikon. A collapsing of these categories reveals that 27% of learners have siblings with HE connections.
- More than a quarter of learners live in an informal settlement.
 - Over a third of learners (36%) indicate that they have no place in their homes where they can study in peace and quiet.
 - More than half of the African learner population (57%) owns fewer than 15 books, while only 10% of white learners have fewer than 15 books in their homes.
 - Nearly two-thirds of white learners have more than 75 books in their homes, while the percentage of Africans owning this number of books is less than 10.

4 Learner choice with regard to entry into HE

4.1 Learners intending to enter HE

- The percentage of learners surveyed intending to enter HE within the next three years is 73%. 13% of learners do not intend doing so, while 14% are unsure. The high percentage of learners intending to enter HE merely reflects the aspirations of a cohort of learners, and may have little bearing on enrolment patterns over the next three years.
- There is a positive correlation between intention to enter HE and the average Grade 11 symbols of learners. A regression analysis reveals that the odds of learners with an A-average Grade 11 symbol indicating that they intend entering rather than not entering HE are 8.6 times higher than the odds of learners with an F–G symbol indicating that they intend entering rather than not entering HE. The odds of learners with a B-average Grade 11 symbol indicating that they intend entering rather than not entering HE are 4.5 times higher than the odds of learners with an F–G symbol indicating that that intend doing so; and so forth.
- Four out of five learners who intend entering HE within three years of the survey date intend doing so in 2002.
- The ratio of females to males intending to enter HE (53%:47%) is more or less equal to the ratio of females to males in the learner population (52%:48%).
- There are no striking differences between Africans, Indians and whites in terms of intention to enter HE – though a higher percentage of Indians (80%) than of Africans (74%) and whites (72%) intends doing so. A significantly lower percentage of coloureds (57%) than of the other groups, however, intends entering HE.

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4.2 Factors affecting intention to enter HE

The following factors are ranked according to the extent to which they have exerted an influence on learner choice with regard to entry into HE:

1. HE enhancing employability
 2. Intrinsic interest in a field of study
 3. HE leading to higher income
 4. Family urging HE study
 5. Offer of a bursary
 6. Family urging HE study to support learner and /or themselves
 7. Ability to finance study through NSFAS²
 8. Offer of a scholarship
 9. Ability to finance study through a bank loan
 10. Teacher urging HE study
 11. Classmates intending to enter HE
 12. Being unsure about life direction
 13. Parents having money to finance HE study
 14. Boyfriend / girlfriend going to HE
- For nearly nine out of ten learners, HE is viewed as the gateway to employment. Intrinsic interest in a field of study, which has exerted a large to very large influence upon four out of five learners, is more important an influence than is HE study leading to a higher income. Access to finance for study, while important, is concentrated in the middle of the list of 14 variables. Parental ability to finance HE, which appears in the penultimate position in the list, is least important for Africans (whose parents would by and large not have the money to finance their children's education) and most important for whites. While parental encouragement is the best predictor of post-secondary educational aspirations in the United States (US), family urging HE study appears only fourth in this list. Teacher urging HE study is relatively unimportant an influence.
 - A disaggregation by population group reveals that external sources of funding for HE study (NSFAS, bank loans, bursaries, and scholarships) are more important for Africans than for coloureds than for Indians than for whites. The corollary is that *internal* sources of funding (particularly parental finance) are *less* important influences upon Africans than upon coloureds than upon Indians than upon whites. Significant others – parents, teachers, classmates, and boyfriends / girlfriends – exert a greater influence upon African learners' decisions to enter HE than upon learners from other population groups.

² NSFAS = National Student Financial Aid Scheme

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- From the perspective of educational level of parents, the odds of learners whose fathers have a HE intending to enter rather than not HE are nearly three times higher than the odds of learners whose fathers have a primary school education or less intending to enter HE. A similar relationship prevails with regard to learners' mothers.
- A regression analysis reveals that learners with siblings with HE connections are nearly twice as likely to have said that they intend entering rather than not entering HE than are learners without siblings with HE connections. A CHAID analysis (Automatic Interaction Detection method that uses the CHI-squared statistic) to establish the effect of a range of (mostly objective) factors upon learner choice reveals that whether a learner has siblings who are studying or who are graduates of a university or technikon is the most significant predictor of learner response to the question of whether they were intending to enter HE within three years of the date of the survey.

5 Learner choice of institution

5.1 Learner choice of institution type

- Fifty-five percent of learners want to study at a technikon, 35% at a university; 10% are undecided. The highest percentage of high SES Africans – 46% – want to go to historically advantaged technikons, the second highest percentage (20%) to Afrikaans-medium historically advantaged universities, and the third-highest percentage (14%) to English-medium historically advantaged universities. Amongst high SES white learners, this situation is reversed: the highest percentage – 47% – want to go to Afrikaans-medium historically advantaged universities, while the second-highest percentage (18%) want to go to historically advantaged technikons.
- For low SES learners, the white profile is similar – the largest percentage of learners preferring Afrikaans-medium historically advantaged universities, the second-largest percentage historically advantaged technikons. But for African learners there is an interesting difference: while the highest percentage of low SES African learners want to go to historically advantaged technikons, the second-highest percentage want to go to historically disadvantaged universities.
- Africans and coloureds are more likely to choose to study at a technikon rather than at a university (59% technikon to 31% university for Africans, 49%:39% for coloureds), Indians and whites at a university rather than at a technikon (65% university to 24% technikon for Indians, 57%:31% for whites). The popularity of technikons is attributable in part to ease of access (no matriculation endorsement is required for entry to technikons, and lower percentages of Africans and coloureds than of Indians and whites achieve matriculation endorsement), in part to a technikon marketing focus on industry links and therefore technikon graduate employability.

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5.2 Factors affecting learner choice of private over public institution

- Learners choosing to study at a private institution (9.6% of those intending to enter HE) rate the reasons proffered as follows:
 - It will better prepare me for the job market than will a public university
 - It has a better reputation in my field of study than any public university
 - It has a better reputation than any public university
 - It offers better personal security than a public university does
 - It will better prepare me for further study overseas than will a public university
 - The fees are more affordable than at a public university
- Coloured and Indian learners are more influenced – albeit marginally so – than are African and white learners by the notions that private HE better prepares one for the job market and for study abroad. Moreover, concerns about personal security have influenced coloureds and Indians slightly more than Africans and whites to opt for private HE.

5.3 Mode of learning at HE institution

The vast majority of learners (86%) intend studying in a contact rather than a distance mode. More than a quarter of those who have chosen to study in a distance mode cite wanting to study part-time while working as the main reason for their choice.

5.4 Learner choice of institution for HE study

5.4.1 Learner choice of institution for HE study, at national level

Learner preference for study at HE institutions at the national level is as follows:

LEARNER CHOICE OF INSTITUTION FOR HIGHER EDUCATION STUDY					
1	Technikon Pretoria	16.6	2	Technikon Witwatersrand	4.9
3	University of Pretoria	4.4	4	Technikon Vaal Triangle	4.2
5	Other institutions ³	3.9	6	University of Natal	3.6
7	Technikon Natal	3.4	8	University of Cape Town	3.1
9	University of the Witwatersrand	2.9	10	Port Elizabeth Technikon	2.9
11	Cape Technikon	2.7	12	University of South Africa	2.3
13	Medical University of SA	2.3	14	Mangosuthu Technikon	2.2
15	Technikon Free State	2.0	16	University of Durban-Westville	1.9
17	Technikon South Africa	1.9	18	Technikon Northern Gauteng	1.9
19	ML Sultan Technikon	1.7	20	University of the Western Cape	1.4
21	Border Technikon	1.3	22	Eastern Cape Technikon	1.3

³ Other institutions = private institutions and institutions abroad

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Learner choice of institution for HE study (cont.)

LEARNER CHOICE OF INSTITUTION FOR HIGHER EDUCATION STUDY			
23 Rand Afrikaans University	1.2	24 University of Venda	1.2
25 Vista University	1.2	26 University of Fort Hare	1.2
27 University of Stellenbosch	1.1	28 Peninsula Technikon	1.1
29 University of Port Elizabeth	1.1	30 University of the Free State	1.1
31 Potchefstroom University	1.0	32 University of the North	0.9
33 Transkei University	0.6	34 University of Zululand	0.6
35 Technikon North West	0.5	36 Rhodes University	0.4
37 University of the North West	0.4	I don't know	13.3

- Technikon Pretoria emerges as the single most popular choice for study, more than three times as many learners opting to study there than at the next most popular institution, Technikon Witwatersrand. There is significant interest in studying at Technikon Pretoria not only amongst Gauteng-based learners (26%) but amongst learners in Mpumalanga (36%), Limpopo (29%), the North West (22%), the Free State (9%) and the Northern Cape (6%) – not least because the Technikon has three satellite campuses in Mpumalanga and one in Limpopo.
- Geographical location plays a major part in the national preference profile. In the national count, the four most popular institutions are all in Gauteng, home to nearly a fifth of the country's population and conveniently accessible from three other provinces – Mpumalanga, Limpopo and North West. Institutional establishment of satellite campuses and / or distance education facilities in neighbouring provinces has extended this regional presence.
- More than a quarter of the institutions derive support from at least three provinces. These are: the University of South Africa; Technikon SA; the University of Cape Town (UCT); the University of the Witwatersrand (Wits); Cape Technikon; MEDUNSA; Technikon Northern Gauteng; Vista University; Peninsula Technikon (Pentech); and Potchefstroom University. Two institutions – the University of Stellenbosch and the University of the Free State – draw substantial support from a province other than that in which they are situated (in both instances, the Northern Cape – which, though it has no HE institutions, houses a number of satellite campuses).

5.4.2 Learner choice of institution for HE study, at provincial level

A disaggregation of learner choice of institution for HE study by province reveals that:

- in only three provinces – the Free State, KwaZulu-Natal and the Western Cape – is the ranking of the most popular institutional choices synonymous with the number of institutions whose primary campuses are based in those provinces (in the Western Cape, for example, Cape Technikon, the University of the Western Cape, UCT, the

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University of Stellenbosch and Peninsula Technikon are, in that order, the five most popular institutions in the province);

- amongst Eastern Cape learners, UCT is more popular than two of the provincially-based institutions (Transkei and Rhodes), while six institutions outside the Eastern Cape – UCT, other (private and foreign) institutions, Technikon Pretoria, Cape Technikon, Peninsula Technikon, and Vista University (though it has a campus in the province) – are more popular than Rhodes;
- amongst Gauteng learners, private and foreign institutions are more popular than all but three of the provincially-based public institutions, all of them technikons;
- amongst Limpopo learners, the three most popular institutions in Gauteng are all more popular than the University of Venda, while in addition to these three, four other Gauteng-based institutions are more popular than the University of the North;
- of the ten most popular institutions amongst Mpumalanga learners, nine are Gauteng-based;
- the ten most popular institutions amongst learners in the Northern Cape are distributed amongst the Free State, Gauteng and the Western Cape, private and foreign institutions being the second most popular choice; and
- amongst learners in the North West, five Gauteng-based institutions and private and foreign institutions are all more popular than Potchefstroom University and, with the addition of UCT, more popular than the University of the North West and Technikon North West.

5.4.3 Learner choice of institution for HE study, by population group

A disaggregation of learner choice of institution for HE study by population group reveals that the five most popular institutions, in descending order of popularity, are as follows:

AFRICAN	COLOURED	INDIAN	WHITE
Technikon Pretoria	Cape Technikon	University of Natal	Other institutions
Technikon Witwatersrand	UWC	Technikon Natal	University of Pretoria
Technikon Vaal Triangle	University of Stellenbosch	UCT	University of Stellenbosch
University of Pretoria	Other institutions	UNISA	UCT
University of Natal	UCT	Wits	Technikon Pretoria

- Technikon study is most popular amongst Africans, featuring only once in the top five most popular institutional choices of the other three groups but four times for Africans.
- Significantly, Other institutions (private institutions or institutions abroad) constitute the first choice of white learners (15% of white learners wanting to study at such institutions, 13% at the University of Pretoria).

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- At a disaggregated level, UCT and Rhodes are the only historically white English-medium universities to which a higher proportion of whites than any other population group wish to go. Amongst historically white Afrikaans-medium universities, with the exception of the universities of Stellenbosch and the Free State, all institutions are far more popular amongst white learners than amongst the other population groups.

5.4.4 Learner choice of institution for HE study, by average Grade 11 symbol

- From a Grade 11 performance perspective, the odds of learners with an F–G average Grade 11 symbol choosing to go to Historically Advantaged Technikons rather than Historically Disadvantaged Universities are four times higher than the odds of learners with an A-average choosing to do so. The odds of learners with an F–G average Grade 11 symbol choosing to go to Historically Advantaged Technikons rather than Historically Advantaged Universities are ten-and-a-half times higher than the odds of learners with an A symbol choosing to do so.
- An analysis of which institutions top-performing learners wish to go to (in descending order of preference) reveals the following:

LEARNERS WITH A-AVERAGE GRADE 11 SYMBOL	LEARNERS WITH A- OR B-AVERAGE GRADE 11 SYMBOL
University of Natal	Technikon Pretoria
University of Stellenbosch	University of Pretoria
University of Pretoria	University of Natal
University of Cape Town	University of Cape Town
Potchefstroom University	University of the Witwatersrand

- While the top five preferences of A-symbol learners are all Historically Advantaged Universities, the inclusion of B-symbol learners displaces a Historically Advantaged University at the top of the list with a Historically Advantaged Technikon. Moreover, the highest percentage of learners with an A- or a B-average Grade 11 symbol wanting to study at a HE institution do not know which institution they want to study at.

5.5 Factors affecting choice of institution for HE study

The following factors are ranked according to the extent to which they have exerted an influence on learners' choices of institutions for HE study:

- Reputation of institution
- Reputation of school / faculty / department
- Far from home, allowing accommodation in residence
- Better sporting facilities
- Lower fees
- Recommended by friends

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7. Allows study via correspondence
 8. Near home, allowing residence at home
 9. Alma mater of relatives
 10. Award of scholarship to study at institution
- Reputation (whether of institution or study programme) is the most important of the listed influences on choice of institution for study. The notion of leaving home to study is far more significant an influence than is staying at home to study – 49% of learners citing leaving home to study as having influenced them to a large or very large extent. The provision of superior sporting facilities exerts a greater influence upon the choice of institution of potential students than do fees, friends' recommendations, learning modes (distance versus contact), parental study, or the award of a scholarship.
 - Africans are more influenced than are coloureds, Indians and whites (on a continuum) by the offer of better sporting facilities and lower fee structures, and are far more influenced than are the other three groups by scholarship awards to study at particular institutions. More Africans and coloureds than Indians and whites want to get away from home to study – the corollary being that more Indians and whites want to live at home while studying. Paradoxically, however, study via correspondence appeals more to Africans and coloureds than to Indians and whites; and Africans and Indians are more influenced than are coloureds and whites by whether their parents studied at a particular institution.
 - A CHAID analysis reveals that the province in which the learner goes to school is the most significant predictor of the institution the learner will choose to study at. This finding is most clearly borne out by the provincial preference profile in the Free State, KwaZulu-Natal and the Western Cape, where loyalty to the institutions in the learner's home province is very strong.

6 Application to study at HE institutions

- More than half of the learners (54%) intending to enter HE in 2002 had not yet applied to any institutions at the time of the survey (August 2001). The majority of learners who had submitted applications had applied to only one institution (59%). A higher percentage of applications have been directed to the university sector than there are learners intending to study at universities, the situation being reversed in the technikon sector.
- The most significant factor facilitating learner application to HE institutions is personalised receipt of information – particularly by mail. With regard to other significant factors, a disaggregation by population group reveals that having a postal address and telephone are less important for whites than for the other three groups. The broadcast and print media (television, radio, newspapers), as well as living near a HE institution (the corollary, for Africans, of the previous point), are more important for Africans than for the other groups.

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7 Learner choice of field of study

7.1 Relative popularity of fields of study

Learner choice of field of study, categorized in the questionnaire into the twelve organizing fields of the National Qualifications Framework (NQF), is as follows:

NQF ORGANIZING FIELD	%
1 Business, Commerce & Management Studies	25.6
2 Manufacturing, Engineering & Technology	15.6
3 Health Sciences & Social Services	14.1
4 Physical, Mathematical, Computer & Life Sciences	10.2
5 Human & Social Studies	5.9
6 Services	5.5
7 Agriculture & Nature Conservation	5.4
8 Law, Military Science & Security	5.4
9 Culture and Arts	4.0
10 Communication Studies & Language	2.1
11 Education, Training & Development	1.4
12 Physical Planning & Construction	1.2
I don't know	3.6
Total	100.0

- These fields of study represent the first choices of 82.1% of learners, 47% of whom intend studying towards a degree, 31% towards a diploma, and 9% towards a certificate (the balance being uncertain about the qualification in which their study programme will culminate). Large percentages of learners do not know either the name of the qualification towards which they will be studying (48%) or the major subjects that will comprise their study programmes (42%) – or indeed do not appear to understand the categories.
- We can obtain an approximation of the percentages of learners choosing to study in the fields of the Humanities, Science, Engineering & Technology (SET) and Business & Commerce by collapsing fields 2, 4, 5, 7 and 8 into the Humanities,⁴ fields 6, 9 and 10 into SET, and leaving Business & Commerce intact. This would see 26% of learners opting to study in Business & Commerce, 40% in SET, and 19% in the Humanities.
- A regression analysis reveals that the better the learner's academic performance (as measured by average Grade 11 symbol), the more likely he / she is to have chosen to study in the field of SET rather than any of the other field groupings – Business & Commerce, Humanities, or Other fields (Agriculture & Nature Conservation, Services, and Physical Planning & Construction).

⁴ This conception of the Humanities is somewhat broader than that used in many HE institutions, embracing all fields in which there is a strong human studies element.

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- A disaggregation by gender reveals that the four most popular fields amongst male learners are Business, Commerce & Management Studies (24%), Manufacturing, Engineering & Technology (23%), Physical, Mathematical, Computer & Life Sciences (11%), and Health Sciences & Social Services (8%). The four most popular choices amongst female learners are Business, Commerce & Management Studies (27%), Health Sciences & Social Services (20%), Physical, Mathematical, Computer & Life Sciences (9%), and Manufacturing, Engineering & Technology (9%).

The four most popular fields account for 67% of male learners' choices, while the Humanities account for 19%. The female learner distribution is very similar in terms of subscription to the Humanities (18%), but only 45% of female learners want to study in the fields of Business, Commerce & Management Studies, Manufacturing, Engineering & Technology, and Physical, Mathematical, Computer & Life Sciences. While there is a discrepancy between male and female choice in terms of the relative popularity of these fields, however, with the addition of Health Sciences & Social Services there is virtually no difference between male and female choice: 67% for males, 65% for females. The fields in which noticeably more females than males than popular opinion would suggest wish to study are Agriculture & Nature Conservation (45% female), Business, Commerce & Management Studies (56% female), Law, Military Science & Security (44% female), and Services (70% female).

- A quarter of learners in all four population groups want to study in the field of Business, Commerce & Management Studies. More Africans than other population groups – on a downward continuum from African to coloured to Indian to white – want to study in the field of Manufacturing, Engineering & Technology. The percentage of Indian learners choosing Health Sciences & Social Services is significantly higher than the percentages of the other three groups doing so, and nearly double that of whites. The percentage of Indians choosing to study in the area of the Humanities (13%) is significantly lower than the percentages of the other three groups choosing to do so (Africans = 19%; coloureds = 20%; whites = 21%). Indian interest in the two critical areas identified in the *National Plan* objective – Business & Commerce and SET – is higher than that of Africans and coloureds, which in turn is higher than that of whites.
- African learners are one-and-a-half times more likely than white learners to have chosen to study in the field of SET rather than the Humanities, while Indian learners are twice as likely as whites to have done so. Apropos of Africans, this finding would seem to fly in the face of enrolment patterns, which suggest that African students are clustered in the Humanities, with low enrolments in SET and Business & Commerce. At the same time, Indian learners are more than twice as likely as white learners to have chosen to study in the field of SET rather than Business & Commerce, while African and coloured learners are nearly twice as likely as white learners to have chosen to study in the field of SET rather than Other fields. These regression analysis results reinforce the finding in the study that the interest of African, Indian and coloured learners in studying in the field of SET is higher than that of white learners.
- The vast majority (79%) of those intending to study in the field of SET took Mathematics on the standard grade – which has major implications for their

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supposed success rate in HE programmes requiring competence in Mathematics, and goes some way towards explaining the high drop-out and attrition rates in HE.

7.2 Factors influencing choice of field of study

The following factors are ranked according to the extent to which they have exerted an influence on learners' choices of fields of study:

1. Interest in this field of study
 2. Opportunities of finding a job in South Africa after qualifying in this field
 3. Ability to use a qualification in this field to contribute towards development
 4. Ability to follow a practical course of study
 5. Opportunities of finding a job overseas after qualifying in this field
 6. The reputation of the school / faculty / department
 7. The amount of money to be made with a qualification in this field
 8. Ability to follow a theoretical course of study
 9. The possibility of obtaining a study loan from a bank / other financial institution
 10. The offer of a scholarship to study in this field
 11. Parents / relatives having persuaded me to study in this field
 12. Not being able to study within the field of first choice
 13. Persuasion by friends to study in this field
 14. A parent / relative having studied in this field
 15. A boyfriend / girlfriend having decided to study in this field
- The notion of HE leading to higher income, the third most influential factor with regard to entry into HE, is displaced in the above list by a number of other factors. Parental influence is much higher in the case of intention to enter HE (mean = 3.8) than in the case of choice of field of study (mean = 2.5) – suggesting that parents may be more interested in the fact of their children achieving a HE qualification than in the course of study they pursue. Furthermore, reputation seems to be a more important consideration in the choice of institution than of field of study. The other two factors with high mean values here are 'Ability to follow a practical course of study' and 'Opportunities of finding a job overseas after qualifying in this field' – the practical outcomes of study featuring highly in learners' minds.
 - Africans and coloureds are more motivated by finding employment in South Africa than are Indians and whites. They are also more influenced by the notion of their qualification contributing towards the development of the nation than are Indians and whites. Financial assistance – in the form of a study loan or a scholarship – is most important for Africans, and less so for other groups, on a continuum at the other end of which are whites. Africans are more influenced than are the other three groups by parental and peer persuasion to study in a particular field. Africans and coloureds are more influenced in choosing a field of study by not having been able to study in the field of their first choice than are the other two groups.
 - A CHAID analysis reveals that the province in which the learner goes to school is the most significant predictor of which field of study the learner chooses to study within. Because choice of institution is also most strongly associated with the

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province in which the learner goes to school, moreover, choice of field of study is constrained to a large extent by choice of institution. Learners are most likely, therefore, to choose to study in fields in which particular institutions specialize – which in turn is informed by the provinces in which those institutions are located.

8 The impact of learner choices upon future life situations

- Learners have an idealistic view of working life, rating a job that allows one to help others, uses skills, and is in line with one's interests as the top three job desirables. The ability to earn a high income comes fourth. From a personal career perspective, learners see themselves as being happy and successful in their work, and bettering their education, ten years from the survey date. More female learners than males see themselves as studying towards a higher qualification and living and working abroad, while more male learners than females see themselves as married, with children. All three of these differences contradict popular opinion about normative gender-differentiated behaviour. Africans see a greater likelihood of their studying towards a higher qualification and being part of the middle or senior management of a company than do coloureds, Indians and whites (on a downward continuum). There is virtually no difference between the likelihood of the four population groups living and working abroad.
- At an aggregated level, there is a remarkable degree of optimism about the social fabric of South Africa ten years hence as measured by key indicators – learners' children receiving good quality public education and public health care, greater access to HE, HE institutions providing a world-class education, poverty reduced, crime situation improved and HIV/AIDS under control. At a disaggregated level, however, Africans and coloureds differ from Indians and whites on the issues of improvement in the crime situation, reduction in poverty, and HE institutions providing learners with a world-class education. On the issues of the provision of good quality public education and good quality public health care, the control of HIV/AIDS and greater access to HE, Africans agree most strongly and whites least strongly with the given statements. These findings confirm popular sentiment that optimism about the country's future is highest amongst Africans and lowest amongst whites, with coloured and Indian sentiment falling between these two poles.

9 Implications of the findings

- The positive correlation in the findings between academic performance and intention to enter HE suggests that, if the participation rate in HE is to be increased, ways must be found to improve school performance. Improving the quality of teaching and learning is clearly a priority in this regard.
- The fact that significantly fewer coloureds than other population groups intend entering HE suggests that further research needs to be undertaken within that group to establish the underlying reasons for this.
- If family encouragement of learners to enter HE is indeed the best predictor of postsecondary educational aspiration (as available American research suggests), ways need to be found either to enhance family communication, where families are intact,

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or, where they are not, to find surrogate means of providing the encouragement that learners need to shift their focus toward HE.

- Access to funds for HE study emerges as one of the chief disincentives to entering HE. In addition to monitoring the effect of the NSFAS upon students' ability not only to enter HE but to graduate, the Ministry of Education should be considering all possible avenues for allocating financial aid to needy learners.
- A higher percentage of learners having received some career guidance rather than not having received any such guidance intend entering HE (79% versus 60%). The Department of Education should thus increase its support for career counselling initiatives in schools – particularly where learners are not in a position, or feel themselves unable, to discuss their future plans with parents or guardians. More investigation of the different forms career counselling should take is needed, however – particularly in the light of American research which shows that the impact of both teachers and high school career counsellors upon learner predisposition to enter HE is negligible.
- More Indians and whites than Africans and coloureds wish to study at a university rather than a technikon, and vice versa. If university participation is to be increased, significantly more Africans will need to enter the system. Access to universities is closely associated with university exemption, which African learners will need to achieve in far greater numbers if university enrolments are to increase.
- Other institutions (private and overseas institutions) constitute the most popular institutional choice of white learners – 15% of white learners wanting to study at such institutions (the next most popular choice being the University of Pretoria – 13%). The reasons advanced by the *National Plan* for the 'white flight', however – perceptions of increased instability and dropping standards – are not borne out by the findings of the survey.
- There is a clear correlation in the findings between SES and choice of institution type (university versus technikon). If more learners are to choose university over technikon study, ways must be found to reduce poverty and raise the standard of living of the majority of learners in the country. While this is clearly something the Department of Education cannot address, it *can* seek better ways of supporting students in their paying of fees, and perhaps even consider influencing universities to impose moratoria on unreasonable fees increases.
- Beyond the fact that Technikon Pretoria has four satellite campuses outside Gauteng, the Ministry of Education may want to investigate the reasons for the inordinately high popularity of the Technikon as an institution for HE study. In this regard, the proposed establishment of a National Higher Education Information and Applications Service is to be welcomed, particularly if high priority could be given to the applications clearing house function of such a service. The finding that 36% of learners who had not yet applied to any institutions at the time of the survey in August 2001 cite not being able to get enough information about universities and technikons as their main reason for not having applied to any institution renders the establishment of such a service all the more critical.

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- A further aspect of institutional choice the Ministry and institutions may want to take into account in planning exercises concerns the provincial anomalies in learners' choices of certain institutions. Notwithstanding the fact that Technikon Pretoria has three satellite campuses in Mpumalanga and the University of the Free State has a satellite campus in the Northern Cape, the Ministry may want, in particular, to investigate the choices of learners in the Northern Cape and Mpumalanga more closely ahead of its proposed establishment of National Institutes for Higher Education in these provinces.
- Another aspect of institutional choice has possible policy implications for the planning of distance education provision. Only 5% of learners in Mpumalanga and 3% of learners in the Northern Cape want to study through UNISA or Technikon SA: nearly two-thirds of learners in Mpumalanga would prefer to study at contact-mode institutions in Gauteng (especially Technikon Pretoria) – possibly at the satellite campuses of Technikon Pretoria in Mpumalanga – while a quarter of learners in the Northern Cape would prefer to study at the two contact institutions in the Free State (possibly at the satellite campus of the University of the Free State in the Northern Cape). The other disproportionate findings are that 55% of learners in Limpopo want to study at contact institutions in Gauteng and that in the North West only 9% of learners want to study at institutions in the province, 52% preferring to study at institutions in Gauteng. Further research might investigate why learners in the provinces housing the University of Venda, the University of the North, the University of the North West and Potchefstroom University are not choosing to study at these institutions.
- There is a great deal of variance between the provinces in terms of the percentages of learners choosing to study at traditionally contact-mode institutions. These range from the Western Cape, where only a quarter of learner choices are not accounted for through choice of study at the traditionally contact-mode institutions in the province, to the North West, where *almost all* learner choice (were the proposed shifting of Technikon North West to Gauteng to take place) is not for contact-mode study at provincially-based institutions.
- That the province in which learners go to school is the most significant predictor of the outcome of two of the three dependent variables in the analysis – which institution learners choose to study at and which field of study they choose to study within – suggests that, notwithstanding the espousal in the *National Plan for Higher Education* of HE institutions as a national resource, the Ministry of Education needs to take provincial differences into account in its planning of HE provision. A balance needs to be struck between *institutional diversification* (learners' choices being most strongly constrained by the range of institutions and study programmes available to them in their home province) and *institutional specialization*, to ensure that duplication of provision is minimized and that institutions are both responsive to local labour market needs and fulfil their own mandate to produce new knowledge – preferably iteratively, in response to changing labour market conditions and national imperatives, where appropriate.
- The finding in the study that male and female learners differ significantly in terms of choosing to study in the field of Manufacturing, Engineering & Technology but not

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with regard to study in the SET fields combined should both give some impetus to the Ministry's insistence that HE institutions be required to indicate in their three-year 'rolling' plans the strategies they will put in place to redress the gender imbalances in the enrolments of students in different programmes and simultaneously allay Ministry concerns, were study intention to translate into enrolment, about gender imbalances in HE. The fact that Business & Commerce is more popular amongst female than male learners (56%:44%) should provide some evidence about changing perceptions of gender-stereotyped choice.

- Ministry of Education concerns about inequities of enrolment in different fields by different population groups – African students, like female learners, remaining clustered in the Humanities, with low enrolments in SET and Business & Commerce – should be allayed to some extent by the study choice profile of African learners in the survey. *Should choice translate into enrolment*, African learner choice of both SET and Business and Commerce would be higher than white learner choice of these fields and lower than white learner choice of the Humanities.
- The finding that Africans and coloureds are far more influenced than are Indians and whites in choosing a field of study by opportunities of finding a job in South Africa after graduation should come as no surprise to the Ministry of Education. Nor should the similar finding that Africans and coloureds are more influenced than are Indians and whites by the notion of their qualification contributing towards the country's development raise many eyebrows. These findings require, however – if the skills of whites are to be retained – some creative incentives for making study and work in South Africa more attractive to white learners.
- That the vast majority of those intending to study in the field of SET took Mathematics on the standard grade underscores the need for national interventions:
 - To counsel learners in the selection of their subjects for their upper secondary schooling and in the level (higher, standard or lower grade) at which they take those subjects;
 - To improve the quality of the teaching and learning of Mathematics in the General Education and Training (GET) band (pre-Grade 10) to enable more learners to select Mathematics as a higher grade subject for their upper secondary schooling; and, concomitantly,
 - To improve the quality of the teaching and learning of Mathematics in the Further Education and Training (FET) band – Grades 10–12 – to ensure an adequate throughput of Mathematics higher grade learners.
- Allied to the previous point is the relatively low level of interest in studying in the Education, Training & Development (ETD) field evinced by learners of all population groups (the national percentage is 1.4). If the quality of teaching and learning across all subjects is to improve, the Ministry of Education will need to embark upon a national campaign to attract particularly university graduates into the profession through, amongst other means, providing competitive remuneration packages for educators and improving the image of the teaching profession.

10 Conclusion

Of the two hypotheses formulated in the report – that a range of factors exerts an influence on student choice behaviour with regard to HE, and that family background (in particular SES) is strongly correlated with learner choice particularly at the predisposition (to enter HE) stage – the first is clearly borne out by the findings of the survey. The second is supported in large measure: though intention to enter HE differs between African, Indian and white learners on the one hand and coloured learners on the other (coloured learner intention to enter HE being markedly lower than that of the other three groups), the findings reveal that the higher the learner's SES, the greater the intention to enter HE.

The CHAID analyses have indicated that, from amongst a range of largely objective factors,

- Whether learners have siblings with HE connections is most strongly associated with intention to enter HE;
- The province in which the learner goes to school is most strongly associated with choice of institution; and
- The province in which the learner goes to school is also most strongly associated with choice of field of study.

However, the findings suggest that a range of factors exerts an influence on student choice behaviour with regard to HE rather than one factor having exerted a disproportionately and therefore overridingly strong influence upon learner choice.

Importantly, this study canvases learner *intentions* with regard to higher education. Subsequent research is needed to ascertain the extent to which intention translates into enrolment.

This project constitutes the first large-scale quantitative study of the factors affecting student choice behaviour in the South African education system. While more such studies are needed, such research needs to be complemented by qualitative studies, which will capture the nuances of learner perception and choice. The long-term interest of the Research Programme on Human Resources Development at the Human Sciences Research Council lies in tracking learners as they move from secondary to higher education and thence into the labour market – with a view to comprehending the changing nature of learners' perceptions about study and work as they make choices in relation to each.

