

CHAPTER 5

DATA ANALYSIS AND FINDINGS

5.1. Introduction

This chapter provides both qualitative and quantitative data analyses, organized and discussed under the two main concepts that serve as the theoretical framework of this study, namely 'getting in' and 'getting through'. The qualitative data analysis is discussed using emerging themes, whilst the quantitative analysis is reported as a description of enrolment data of the identified and sampled students for this study. The following emerging themes are reported under 'getting in': student recruitment; student readiness; and admission process and funding; whilst under 'getting through' the emerging themes are: the orientation period; student support (academic and psychosocial), and the institutional culture. These themes will be discussed in relation to widening participation (WP) in higher education. I will begin, however, with a description of the Biological Sciences programme and the sample which provides the context of the study.

5.2. Biological Sciences programme and sample description

Biological Sciences (BS) is one of the 17 departments located within the Faculty of Natural and Agricultural Sciences, which offers several science- and agriculture-related programmes. The Bachelor of Science (BSc) is a three-year generic degree which can be registered with a view to diverting to other career tracks or professional degrees, such as medicine, dentistry or veterinary science. Alternatively, students can go all the way, complete the three years and be awarded a BSc degree in Biological Sciences. Since BS is a generic degree, students who register for this programme take a variety of modules, depending on whether they intend to divert to other programmes or to complete a BS degree. Once the student has decided on the area of speciality, he or she can choose from the following modules: Mathematics, Science and World Views, People and their Environment, Medical Terminology, Botany, Zoology, Genetics, or Physics.

In this study, the focus was on one of the popular modules in BS⁷. The module was chosen because of the large number of students who were enrolled and the willingness of the lecturer to provide access and support for this research project. Table 5.1 below gives detailed explanation of the enrolment data for the first-year second-semester students in this BS module at the University of Pretoria (UP) for the 2011 academic year. The purpose of the enrolment data is to provide a general sense of the numbers in this programme with a view to relating them to access and widening participation. This class was divided into English and Afrikaans groups, with 539 students registered in the English group and 225 in the Afrikaans group. This made a total enrolment of 764 for the first-year second-semester students in 2011 in BS. Table 5.1 also gives a racial and gender breakdown for the Biological Sciences first-year class. While the Afrikaans group was comprised mostly of white students, there were more whites than black students in the English class, as the total number of white students was 450 (58,9%), compared with the number of black students which was 314 (41,1%). Furthermore, the data indicated that there were more females in this programme than males, as they made up 64%, with male students only making up 36%. When intersecting gender and race, the enrolment figures indicated a dominance of white female students, since they amounted to 35,6%, compared to white male students, who added up to 23%. Black female students made up 28% and black male students 12,7%. It is evident that black male students were under-represented in this programme, as they made up only 12%, while their white counterparts made up almost double the percentage at 23%. In general, black students were under-represented, albeit black females were better off as compared to black males. In this study, therefore, 'black' will be used interchangeably to describe under-representation in BSc in Biological Sciences.

⁷ In order to maintain anonymity and confidentiality, I will not name the module but refer to it as Biological Sciences (BS).

Table 5.1

Enrolment figures and gender distribution for 1st year Biological Sciences for the 2011 academic year						
	Females	%	Males	%	Total	%
Blacks	217	28,4	97	12,3	314	41,1
Whites	272	35,6	178	23,3	450	58,9
Total	489	64	275	36	764	

Table 5.2 below describes the participants from the first-year second-semester students in BS during the academic year 2011. The total number of respondents was 193, but 2 respondents chose not to disclose their racial group; the percentages were therefore calculated out of a total of 191. The blacks added up to 46,5% and the whites to 53,4%. The sample resembles the total population and is therefore representative of the population in the Biological Sciences for the 2011 academic year; however, the sample is slightly biased towards white females. The sample further confirms the trend that in general whites are dominant in this programme.

Table 5.2

Race and gender distribution of the respondents from 1st year second-semester students in Biological Sciences in 2011						
	Females	%	Males	%	Total	%
Blacks	66	34,5	23	12	89	46,5
Whites	67	35	35	18,3	102	53,4
Total	133	69,6	58	30,3	191	

5.3. Getting in

“Getting in” includes the processes that sit between the secondary school and higher education (Osborne and Gallacher, 2004). These processes are the precursor to entry into higher education studies and play a major role in widening participation. It is evident that in order to transform itself from a predominantly white Afrikaans university which served the privileged to a diverse institution which adhered to the principles of redress and equity, UP had to make a concerted effort to bring black students from under-represented groups into its gates. This was achieved through in-reach and out-reach programmes and student recruitment. However, as the following section indicates, these processes had their own challenges.

5.3.1. Widening participation through student recruitment

The university conducts ‘out-reach’ and ‘in-reach’ (Osborne and Gallacher 2004) recruitment programmes, such as career days and open days, which focus on making potential students aware of what is on offer at UP. The out-reach programmes are partnerships between schools and UP; they are intended to edify the learners about the university and are mainly about career-related information.

The data suggest that the university’s out-reach and recruitment process, which is coordinated and managed by the client service centre (CSC), has the responsibility of recruiting students from both urban and rural areas to the university.

We do have a client service centre with recruiters and they don’t only visit big city schools but also visit the countryside.⁸

According to one policy- maker, during the recruitment drives, the university assures disadvantaged students that support is available for them.

In our marketing, we do indicate that there is a possibility for you if you really want to study at the university, even if you did not go to the right schooling;

⁸ Policy-maker 5, 3 March 2011. [Document 11:13 (119:126) Codes: Student recruitment]

you still have the opportunity to get the right support to continue with education.⁹

Recruitment sometimes takes place during ‘career days’ at different schools around the country, where lecturers accompany the CSC recruiters and speak to potential students.

... [B]ut there are times when we go to Sasolburg [town outside Pretoria], I think during career day, so there are times we go there and talk to Grade 11 and 12 learners...¹⁰

During the recruitment drives, the university officials make presentations to various schools with a view to marketing the UP and encouraging potential students to consider enrolling at the university.

At my school, we had different kinds of presentations from different universities, including UP.¹¹

In the in-reach programmes, potential students come to the university on a particular day, usually Saturdays, in order to get information about programmes on offer, the support systems available at the university, such as financial assistance, and to have a tour of the university campus. Such an activity makes is called an ‘open day’.

The data suggest that the recruitment efforts have a varied impact on students’ decisions to enrol at UP.

Figure 5.1 shows that only 1% of students from both blacks and whites made the decision to enrol at UP via open day. Of course, to come for an open day presupposes that one already knows about the university. As one of the respondents who knows UP puts it: “How could you not know of the University of Pretoria?”

Figure 5.1 indicates that 37% of the sampled black female student respondents became aware of UP through their teachers/schools, compared with 26% of white female respondents. However, very few black and white male student respondents knew about UP from their schools or teachers; only 10% of black male respondents

⁹ Policy-maker 5, 3 March 2011. [Document 11:13 (119:126) Codes: Student recruitment]

¹⁰ First year lecturer 4, 3 March 2011. [Document 5:19 (262:267) Codes: Student recruitment]

¹¹ Focus group interview 1, 31 August 2011. [Document 13:10 (24:27) Codes: Student recruitment]

and 8% of white male respondents indicated that they had information about UP from their schools or teachers. Nonetheless, the significant number of both black and white female respondents who heard about UP from their school or teachers underscore the role that teachers play in facilitating access to higher education for students from under-represented groups. It seems that the collaboration between the university and the schools on projects could have exposed teachers and students to UP:

I was also privileged because University of Pretoria was sponsoring some of the activities [career day] in our school. So I had to attend those activities at this university, that's why I chose to study at this university¹².

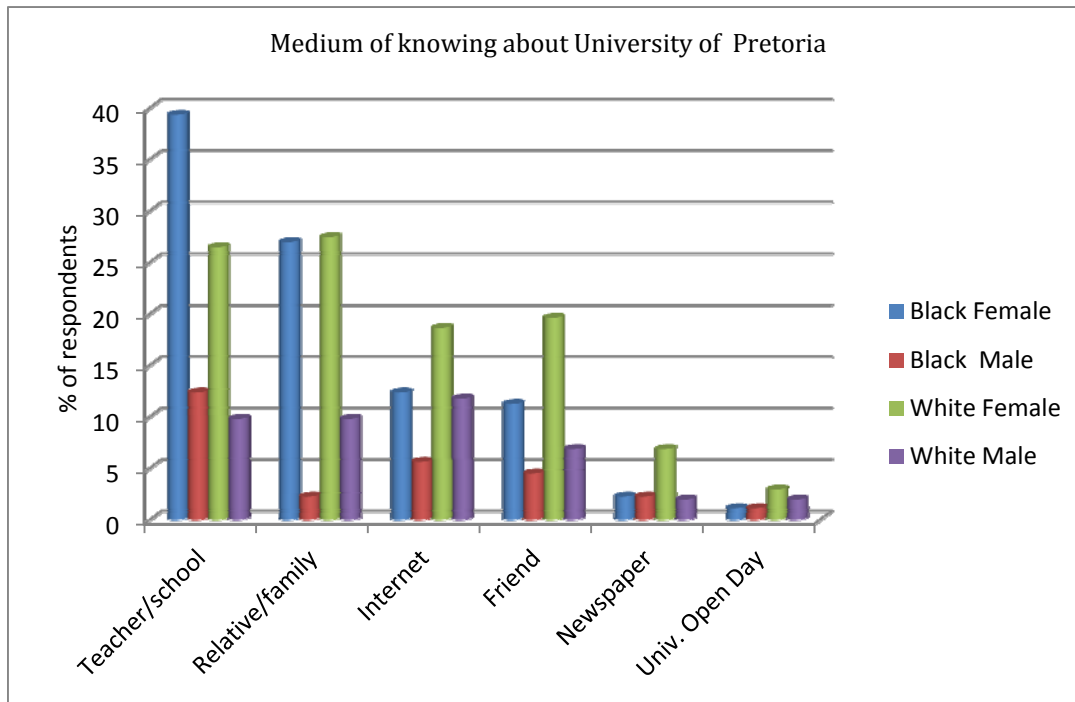
The quantitative data suggest that an overwhelming 25% of sampled black female respondents, compared to the same percentage of white female respondents, indicated strong alumni contacts, as they had become aware of UP either through their family members or relatives who had attended UP before. However, for black males the data suggest that the family or relatives did not influence their decision to go to university or to choose UP, since an insignificant 1% of black male respondents affirmed that they knew about UP through family or relatives. The same applied to white males; just below 10% indicated that they had heard about UP from family or relatives. This suggests that there is a form of communication within families, including black families, regarding their children furthering studies at post-secondary institutions or HEIs and even suggesting which university. The discussions about the choice of university underscore the importance of cultural capital (Bourdieu, 1977b). Being familiar with an institution also seems to encourage students to choose it.

Figure 5.1 indicates that recruitment through the internet is less effective in reaching under-represented students, as only 12% of black female and 5% of black male respondents learnt about this university and its programmes from the internet, compared to 16% of white females and 11% of white male respondents, i.e. 17% of blacks who came from township and rural areas, compared to 27% of whites who came predominately from urban areas, had access to computers and knew about UP from the internet. 5% of white females gained insight about UP from newspapers, as

¹² Focus group interview 1, 31 August 2011. [Document 13:10 (24:27) Codes: Student recruitment]

compared to less than 2% of black female and male respondents. This may be indicative of the lack of resources for black students, either at home or at the schools they attended. It further highlights the social inequality that is linked to the urban-rural divide.

Figure 5.1



Geographical area or location is another factor that affects recruitment of under-represented students. Figure 5.2 below shows the residential or home areas of the respondents. The data suggest that BS draws most of its students from urban areas, as 56% of white female and 28% of white male respondents came from an urban area, compared with 25% of black female students and less than 10% of black male respondents. Slightly more than 30% of black females and about 10% of black males came from township areas and 11% of black females and 5% of black males came from rural areas in and around Pretoria. The data indicate that whites came exclusively from urban areas, while the township and rural areas showed black dominance. This could be informed by the fact that the university has feeder schools which are mainly situated in urban areas, even though the university also recruits students from the neighbouring township and rural areas. Students from rural areas were more likely to have attended poor schools with limited resources.

Figure 5.2

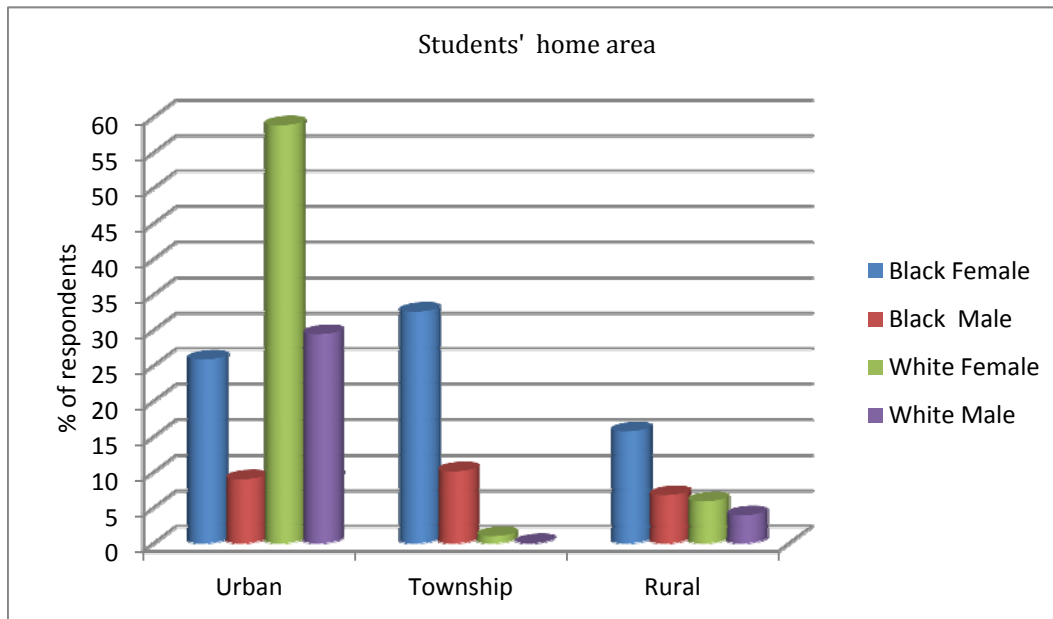
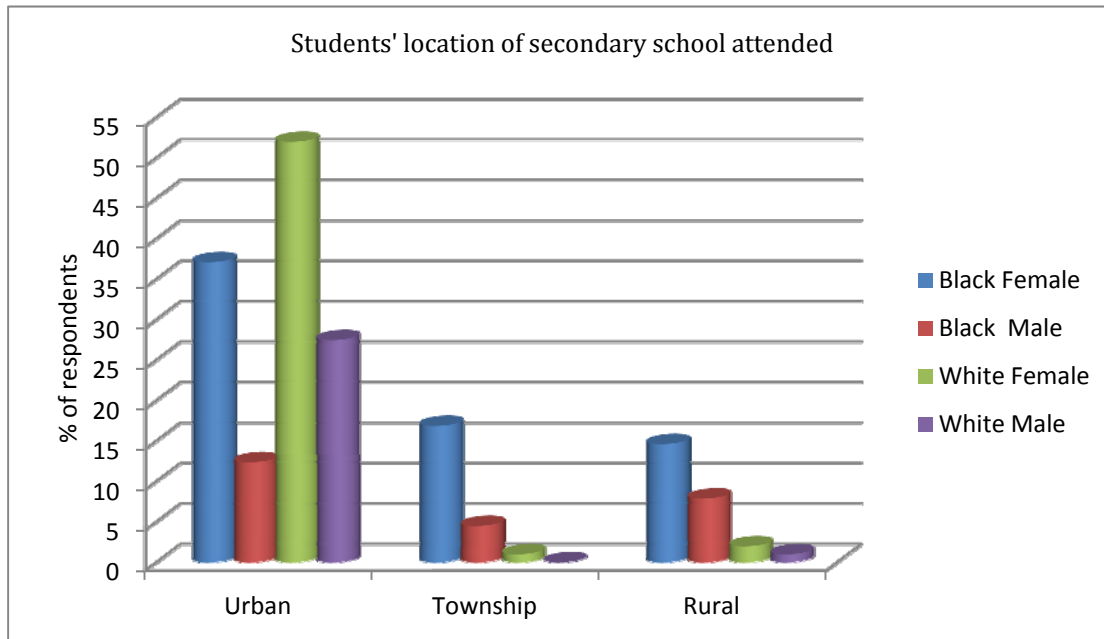


Figure 5.3 below describes the location of the secondary schools attended. The data suggest that the residential or home area and the school attended have a bearing in determining access at UP. Figure 5.3 shows that 50% of white females and 25% of white males attended secondary schools in urban areas and in most cases within their home area. Of black females, 15% attended schools in townships and 10% attended rural schools, while less than 5% of black males attended schools in township and rural areas. That is to say, 75% of white students in Biological Sciences attended school in an urban area, compared with 30% of black students who attended schools in township and rural areas. The data suggest that most students attended secondary schools in their home area. The black students from rural areas also attended secondary schools in their areas. This limited student mobility of rural blacks could be attributed to the exorbitant travel and school fee costs that are obligatory in urban areas. Thus poverty locks them in their area. Nonetheless, UP's recruitment drive was able to reach a small percentage of students from rural areas. On the other hand, township students commuted from their townships to town for schooling purposes. The data indicate that 35% of black female and 12% of black male student respondents from townships attended schools outside their residential areas, which could mean either that they were commuting to the city or were staying in boarding or lodging houses and were perhaps attending

better schools. This has a potential for widening participation because attending schools in urban areas could expose them to resources which might otherwise not be readily available in township and rural areas.

Figure 5.3



The geographical area or location has a major impact on access to higher education for students from disadvantaged backgrounds, especially given the shortage of residences at UP. The fact that UP is spread over six campuses in the city and its surroundings and the lack of reliable public transportation compounds this issue, which is described by a policy-maker:

Housing is a problem, we don't have enough residences, and we don't have as much as we would like to have. Transport is a problem, because if people are living farther away then they need transport and the public transport system is poor after hours. So for example, you have classes in the evening, then it becomes a problem and it's usually the people that have problems with housing that get caught up with issues of transport in the evenings or when there are sporting events over the weekends. And it's very difficult to deal with all of those and the university is generally full. We are still growing and we

intend to grow but we have to create facilities before we can grow; as you can see, we are building all over the place. We have huge building programmes but we don't admit students until we have places, so the university remains full, so the timetable is very busy and the tests will be in the evenings because the halls are constantly full. This university is also very diverse in its academic from sciences to drama and everything else in between, so the university is very complex and if there is a bus, where is it going to go, east or west or south? The university is spread over six campuses, one day it's this campus, the next it's that, so just the logistics will be problematic and we are trying to resolve them. The public transport system is not good enough to deal with these issues, so I think that things like that make it very difficult.¹³

The insufficient residences and the transport problems make studying at UP challenging for students, as due to the large classes, tests are sometimes written from eight to ten o'clock in the evening. Of course, all of these issues will have a greater effect on black students from rural and township areas who do not reside near UP.

I sympathize with those students who live far from the university, especially those from townships like Soshanguve [one of Pretoria's township areas]. Sometimes we write tests from 20h00 until 22h00 and it is late and not safe for students to travel alone late at night, especially girls. But if we can all be accommodated in residence or if there was reliable and safe transport this will not be a problem at all.¹⁴

To sum up, student recruitment in BS at UP is conducted through the in-reach and out-reach programmes which are facilitated by both the CSC personnel and the first-year lecturers. UP's recruitment drives are not limited only to urban areas but reach the far-flung rural areas, albeit to a limited effect. This could be linked with lack of residences and transport which negatively affect black students in the BS. Data suggest that the most effective recruitment strategy to widen participation is working closely with teachers/schools, while the least effective is the open day.

¹³ Policy-maker 3 , 18 March 2011.[Document 2: 27 (481:507) Codes: Student challenges]

¹⁴ Focus group interview 1, 31 August 2011. [Document 1:1 (13:18) Codes: student readiness]

5.3.2. Student readiness and widening participation

This section analyses a crucial factor in widening participation which is raised by most respondents, that of student readiness. This is assessed in terms of the students' expectations and preparedness for higher education studies.

The general perception among the participants was that students are not adequately prepared for higher education studies, especially in BS.

The data indicate that university personnel have to deal with students who have obtained inflated marks in the matriculation examinations. This creates expectations of access to higher education, but the students are not ready and sometimes they do not have the capacity to succeed, despite their high expectations. The data in figure 5.6 (in section 5.3.4) showed that 17% of black female students were of the view that they were fairly well prepared for university studies, compared to 12% of white female students. The students' perceptions were based on their performance at secondary school level. This underscores the expectation created at school level that they will be able to manage the rigour of university studies. Furthermore, 81% of whites (56% female and 25% male) came from urban areas, compared to 60% of blacks (40% township and 20% rural) who came from township and rural areas and may not have been adequately prepared for university studies. Thus, they may not have had realistic expectations as far as their academic performance was concerned.

The present situation creates expectations with students who do not qualify (sic). What we saw during the past two to three years was that with inflation in marks – which ranges between ten and twenty percent – students may qualify for university entrance with very poor marks ...This is a dangerous situation for both Higher Education sector and the country.¹⁵

The inadequacies of the school system are pointed out as one of the factors that manifest themselves as barriers to access, particularly for students from under-represented groups.

¹⁵ Policy-maker 2 , 31 March 2011.[Document 4: 23 (284:292) Codes: Student readiness – poor schooling]

On the other hand, it's also challenging, especially sitting in this situation with the current state of education. The secondary school education and the students that we get out of the schooling system are not well prepared for university studies. I've been involved with first year students for many years, for over seven years and even more, and I've been teaching first years for about six years in this course...¹⁶

The assertion by the policy-makers (as quoted above) not only underscores the challenge regarding inadequate preparation of students for higher education studies but also questions the standards of the secondary school system in South Africa. It is evident that university policy-makers and first-year lecturers lack trust in the schooling system. For instance, they view the standardization process by the quality assurance body at the Further Education and Training (FET) level of schooling with suspicion. The standardization process purports to eliminate external factors which might negatively influence the learners' results. This occurs when the final Grade 12 learners' marks are statistically moderated and can result either in either acceptance of the raw scores or their adjustment downwards or upwards within the norm of 10% (DoE, 2001b). That is to say, the policy-makers seem to understand the standardization process in one way, i.e. in terms of positive adjustments only.

While the gap between school and first-year university studies is well documented (Boughey, 2010; Downs, 2010), there was a perception among the participants that it was up to the university alone to try and bridge this gap. One of the policy-makers made this observation and pointed out the inadequacies of the schooling and the chasm that exists between the secondary schools and first-year university.

... [T]he work expected at school level in grade 12 and university first-year level is widening. Unfortunately, the secondary school system is somewhat abdicating their responsibilities in this regard. This creates a huge problem for the university. It is now the universities' responsibility to ensure that students overcome the gap.¹⁷

Furthermore, the secondary school system does not provide students with sufficient intellectual capacity and motivation to succeed in university studies.

¹⁶ First-year lecturer 1, 7 April 2011. [Document 10:3 (25:33) Codes: Student readiness]

¹⁷ Policy-maker 2, 31 March 2011. [Document 4:28 (268:278) Codes: Student readiness]

The university system is developed to accommodate students who have the intellectual capacity and motivation to be successful. We need a senior secondary system which will ensure that we do get students who qualify exactly for that purpose.¹⁸

Lack of preparation at school level is compounded by inadequate career guidance and counselling, which seems particularly to affect black students from township and rural areas. It is argued that many black students attended township and rural schools and consequently did not have sufficient information regarding career choices and university studies. It was maintained by one of the policy-makers that “wrong career choices because of poor career guidance at school level are a great obstacle to achieving success.” As a result, students end up selecting whatever programme is available. Lack of information may mean failure to gain access to the programme envisaged as first choice career, because one may not know the admission requirements and the required subject mix. Prospective students need to know the correct subject mix and grades needed for university programmes as otherwise their application will not be successful; for example, to meet the minimum requirements for entry to BS, mathematics, physical sciences and English at secondary school level are essential.

The data suggest that students end up settling for second- or third-choice careers or even enrolling for any available programme.

Well, for me, the reason that I study Biological Sciences is the same as hers. I wanted to do Veterinary Science but my application was unsuccessful. So, in order to for me to get selected into it; I had to study Biological Sciences throughout the year and hope that I'll get selected.¹⁹

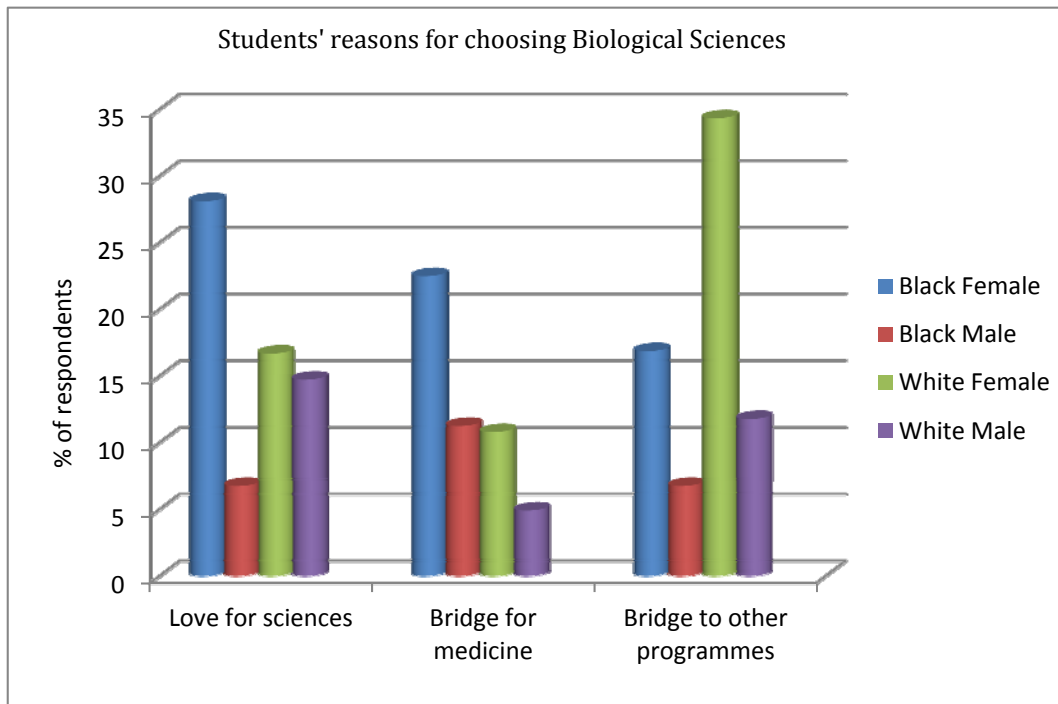
Student readiness includes among other factors the ability to ferret out information about the university programmes and other opportunities available at the particular institution of choice. Figure 5.4 describes the students' reasons for choosing Biological Sciences. The data indicate that 25% of black female students, compared to 16% of white female students, chose Biological Sciences because they loved science, and 6% of black male students and 14% of white male students chose the

¹⁸ Policy-maker 2, 31 March 2011. [Document 4: 23 (284:292) Codes: Student readiness – poor schooling]

¹⁹ Focus group interview 2, 14 September 2011. [Document 14:7 (28:32) Codes: Admission process]

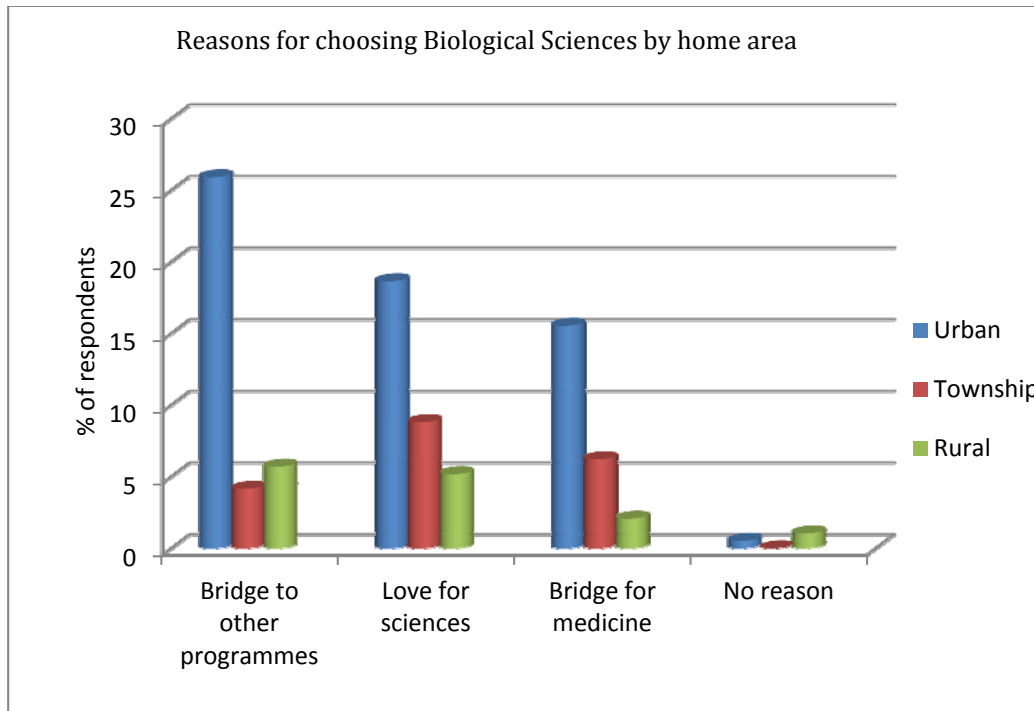
programme for the same reason. Further, 34% of black students (23% female and 9% male) registered for the programme with a view to bridging to medicine, compared to only 13% of white students (9% female and 4% male) who also wanted to bridge to medicine. While black students wanted to bridge to medicine, 45% of white students wanted to bridge to other programmes. The reasons given may indicate how knowledgeable the students were about the programme prior to registering for it; however, the opposite could also be true, that is, students enrolled for the programme, not because they had sufficient information about it, but simply because it was available.

Figure 5.4



The data show that about a third of the black and white students enrolled in the programme because they wanted to do science, while the other two-thirds enrolled for other reasons. Figure 5.5 below shows that the majority of students from urban areas (25%) registered for Biological Sciences in order to bridge to other programmes, compared to 5% from rural areas and 4% from township areas. This may have a negative impact on widening participation for under-represented groups.

Figure 5.5



The other challenge that potential students may face is their lack of adequate exposure to university and how the university operates. Some prospective students applied for admission late, as they were not aware of closing dates. Others indicated that they applied late because their parents did not have the application fees. Some waited for their final Grade 12 results and arrived at the university to make a self-application. These students who arrive at higher education institutions to make a self-application are known as ‘walk-ins’.

My mom did not have money so that I could apply to various universities. So I only applied here [University of Pretoria] and it was already late and then I took Biological Sciences.²⁰

It is the role of the career counsellor to be armed with a wide variety of university material and be able to guide learners in general, including about fees and application closing dates.

²⁰ Focus group interview 1, 31 August 2011. [Document 13:14 (63:65) Codes: Funding]

Now how do you write the final Grade 12 exam and your subject combination is not correct? The career guidance teacher in schools should be able to tell you that your subjects are not correct so you are not going to qualify for university studies. The students just come here and have heard that there is BSc IT and they do not know what it's about and I struggle to figure out whether it's the rural or township schools that don't have good career guidance teachers or what the problem is. But there is a huge problem with the preparedness of students even though we have recruitment officers from client services.²¹

The phenomenon of student readiness was lamented not only by policy-makers but by first-year lecturers as well. Under-preparedness was manifested by the inability of the first-year students in this programme to conduct the practical work which is an essential component of the BS course. It was suggested that schools tended to focus more on the theory part and neglect the practical component of the subjects. This correlates with the inadequate resources associated with schools in rural areas.

It is an experience that I am not surprised of. It is an experience that poor students might know how to handle the questions and answers, in the course one situation but depending where they come from, most of them will not have seen a thermometer and let alone touch it, let alone some instruments. I know that the African students in particular would not have seen many of the equipments that we use here in first year of physics.²²

For some students, the BSc course provided their first experiences with science equipment. It was exciting and enjoyable, as one of the black students pointed out: "The chemistry practical sessions are enjoyable, even if it's something that we had not done previously in high school."

The first-year lecturers who were interviewed were in accord that the problems of inadequate preparation lay in the secondary school system. This phenomenon was also highlighted by one of the aims of the national plan for higher education, that in order to transform HE and increase participation rates, the secondary school system should produce sufficient numbers of learners who qualify for higher education

²¹ Policy-maker 4, 4 April 2011. [Document 12:18 (179:190) Codes: Student readiness]

²² First year lecturer 2, 11 May 2011. [Document 9:3 (31:39) Codes: Student readiness]

studies (DoE, 2001a). The quality of the learners who manage to go through the secondary school system and meet the degree entry requirements, however, remains questionable.

Inadequate preparation was also confirmed by students in the Biological Sciences. Most of the black students interviewed, as well as the sample who completed the questionnaire, maintained that they were not prepared to deal with the amount of work in this programme. Figure 5.6 (in section 5.3.4) below indicates that 24% of black female students confirmed that their schooling had not adequately prepared them for university studies, as compared to 23% of the white female respondents. The question of inadequate preparation was further underscored by one of the black students, who indicated that “at the beginning I thought I was prepared for university studies but my first semester here proved me wrong.”

Inadequate preparation is fuelled by insufficient exposure of students to high-level academic activities at school level. This was lamented by one of the university policy-makers:

... [I]f students are used to high level activities in their school work, they will be better prepared for University.²³

Inadequate readiness led to a number of first-year student repeaters occupying space that could have been taken up by new entrants. This was compounded by students transferring from one programme to the other, i.e. those who discovered that they had registered for programmes they did not like or those who wanted to do something else for one reason or another. These students clogged the system, thus creating a barrier to widening participation.

... [B]ut we are experiencing a high degree of repeaters and transferring students impacting on our intakes because when we have so many students that transfer and repeat they take places in our first year classes.²⁴

The data point out that under-preparedness applies not only to students but also to lecturers. Hence UP has established a unit for education innovation which aims at

²³ Policy-maker 2 , 31 March 2011.[Document 4: 23 (284:292) Codes: Student readiness – poor schooling]

²⁴ Policy-maker 6, 3 March 2011. [Document 3:22 (318:326) Codes: Student readiness – barriers to access]

preparing both students and staff to handle teaching and learning issues differently, such as using technology to mediate learning.

We also have a department of education innovation which deals with trying to identify academic problems and it assists both students and staff in dealing with teaching issues that may be put to these students.²⁵

However, the first-year lecturers were overwhelmed by the huge number of students that they had to teach. This phenomenon also related to the lecturers' preparedness for handling a large class.

When I went to Mamelodi [township where UP has a satellite campus which used to cater for black students mainly for foundation programmes] and you stand in front of 500 students, it was a nightmare for me. I think you need some special skills for controlling large classes; and they have workshops here to give tips on how to handle large classes, some students will be sleeping and others will be on 'mix it' [social media network] on their cell phones; others will be going in and out disturbing the whole class and it's very difficult to maintain discipline in those large classes.²⁶

The inadequate preparation of students for university studies not only has a negative impact on widening participation in BS but also affects the general role and mission of the university. The University of Pretoria perceives itself as a research-intensive university, with knowledge production as its mission. The question is how to balance widening participation with the primary mission of the university. The following quote indicates how a policy-maker vacillated between the two imperatives of equity and redress on the one hand and research and development on the other.

Education at whatever level is never wasted. If the University can make a difference in the life of an individual by providing remedial teaching, we are fulfilling our mandate as an educational institution. However, this is a research intensive university and it is a fact that the lecturing staff must have time to do research. The more time they spend on teaching, the less time they have for research. We must be careful that our remedial teaching component does not

²⁵ Policy-maker 3, 18 April 2011. [Document 2:10 (177:188) Codes: Admission process]

²⁶ First year lecturer 5, 3 March 2011. [Document 8:8 (64:74) Codes: Admission process – challenges]

overwhelm postgraduate teaching and research. That's why you need to have some sort of a balance and you need the school system to deliver. People ask whether research universities are not a luxury in a developing country like South Africa. Research skills enable people to solve problems. As a developing country we are confronted with problems in all sectors of our society. We need knowledgeable people that can address these problems. As a country we need people with the high level skills a research degree will give you.²⁷

There are number of issues at play here, such as the time that university lecturers spend on remedial teaching, rather than on research. This has a negative impact on their research output; the university, on the other hand, pushes them to produce more publications. The financial burden that HEIs have to carry cannot be overemphasized.

It is perceived that, as a developing country, South Africa needs to develop research in order to solve its problems. However, by focusing on research it seems to neglect the same under-represented groups of people it is attempting to help.

Student readiness plays a critical role in widening participation. Inadequate preparation of students for university studies not only becomes a hindrance to WP at university level but also affects the mandate of the university. Furthermore, it has proved to be a costly exercise for the university. The exorbitant costs are not only in terms of the monetary value but also in terms of time, including the time lecturers spend on remedial teaching.

In summary, student readiness is affected by various factors, in the main emanating from inadequate preparation for university studies. The inadequacy of the school system is fuelled, *inter alia*, by the lack of highly trained career counsellors, especially in township and rural areas. Furthermore, 'grade inflation' (Govender and Moodley, 2012) that occurs at Grade 12 level not only results in raising the students' expectations but also has a negative impact on widening participation in BS.

²⁷ Policy-maker 1, 11 April 2011. [Document 1:23 (264:273) Codes: Student readiness]

5.3.3. Admission process and widening participation

An admission policy is a document that details how a university enrolls its students, as well as how it intends dealing with the issues of equity and redress. In terms of the Higher Education Act, each institution of higher learning is obliged to conform to the country's call for equity and redress (DoE, 2001a). The admission process encapsulates the minimum admission requirements set by the government and is used by HEIs to determine entry into university programmes. The school exit qualification in South Africa is the National Senior Certificate (NSC), which translates into what is colloquially known as being matriculated.

Whilst asking about access policy, most respondents spoke about admission policy, and seemed to use the two terms interchangeably.

The data indicate that the UP has an admission process that is developed through consultations at the faculty level and approved by both the senate and the university council. The admission policy is then implemented at faculty level. This is in line with the prescripts of the Higher Education Act and the university statute.

The access policies for the various programmes originate on faculty level and are dealt with by the respective faculty boards. In terms of the Higher Education Act it is then approved by Senate and Council. At UP we do not have a central admissions office. Faculties take responsibility for managing admissions in the faculties in accordance with the Higher Education Act, the UP statute and UP policies and institutional rules. Given the fact that it is in essence an administrative process, one has to take into account general principles of administrative law as well.²⁸

The notion of 'policy as practice' (Levinson and Sutton, 2001) seems to be the basis on which UP develops and implements its admission processes in BS. These admission processes have been refined over the years and are thus steeped in years of experience and practice. Furthermore, the data show that access policy for BS at UP is very fluid and is adjusted every year on the basis of the lessons and experiences of the previous year. The lessons include those relating to changing circumstances, such as improvement in the learner cohort performance, and the

²⁸ Policy-maker 1, 11 April 2011. [Document 1:12 (154:248) Codes: Admission process – Access policy]

balance between available resources and demand for access, as determined through enrolment planning.

Firstly, it [admission process] is a process that should be reviewed annually and it should be based on research of the previous year so we should continuously see how is UP doing in terms of the students that apply and the students that are actually admitted. That ratio should be taken into account and within that we should look at who are these students that we admit, are they representative, are they the best, how are they doing and based on the research of the current intake we should formulate a policy for the following year. Now it becomes a little bit of a short term process but in a dynamic environment like this you can't really work on a long broad policy, you have to review it annually.²⁹

The other critical factor gleaned from the data that impedes widening participation in Biological Sciences is enrolment planning and its impact on resources. The university has to strike a balance between resources and student enrolment. That is to say, it has to have a clear growth strategy that will assist administrators to enrol the number of students that could be accommodated in the available lecture rooms and also ensure that there are sufficient resources including human resources.

We have to negotiate the growth plan targets with the department of education and we are very much on the targets that have been agreed on... For first year admissions there were about 33 000 applications for 8 500 places. So reaching a target is not a problem, the problem is there isn't a room in the university... so we manage to make sure that the admitted students have a reasonable chance of getting into a lecture hall if they have. So we keep an overall control of admissions in that way, each programme has quota to make sure that it's maintained.³⁰

The data suggest that there has been a general increase in enrolment numbers. The massification process lent a hand to the university in its quest to widen participation, but it brought with it issues and challenges which need to be managed, such as resources. Massification puts a huge pressure on resources, as was underscored by

²⁹ Policy-maker 6, 3 March 2011. [Document 3:29 (29:42) Codes: Admission process – Access policy]

³⁰ Policy-maker 3, 18 April 2011. [Document 2:39 (220:237) Codes: Admission process]

the first-year lecturers. Having more than five hundred students in a lecture at a time requires more time to assess their work or get extra resources for assistance. On the other hand, the students also feel the impact of massification; for example, one of the black students indicated that “the large amount of students and insufficient space to accommodate registered students make learning difficult as they do not get necessary attention from the lecturers.”

Any organizational disequilibrium creates an undesirable situation within that organization or institution. The data point out that some first lecturers feel overloaded and challenged by large classes, while students feel that they do not get adequate attention from lecturers; they also experience limited reading space and insufficient books in the library. In this sense, the pressure on resources encourages the university to manage the numbers by balancing the student enrolment with the number of available resources, such as lecture halls and lecturers.

In order to encourage diversity, the University of Pretoria employs the carefully crafted quota system. This system is intended to ensure that the university reflects the diverse population, but not necessarily the demographics, of the country.

We would like to have a diverse university. We think that is what the country is about and it's important that students should study together because they are going to work and live together. What we are trying to achieve is that there is at least 40% black or white students in a group so that diversity is maintained. Given the numbers that apply and the quality of applications, this tends to happen naturally in the university.³¹

This subtle quota system, however, does not reflect the demographics of the 20-24 year-olds in South Africa, as the blacks of this age cohort make up 9.08%, compared with 0.6% of whites of the same age (Statistics SA, 2011). On the one hand, 40% of white students may be interpreted as the university's deliberate attempt to reserve places for white students, since they are in a minority in the country; on the other hand, it could indicate the slow transformation of the previously white university into a diverse institution. Undeniably, most whites attend well-resourced schools and are likely to get good grades and meet the university entry requirements (Jansen, 2010).

³¹ Policy-maker 1, 11 April 2011. [Document 1:22 (280:287) Codes: Admission process]

This could explain the over-representation of white students in the Biological Sciences, as they make up 59%, as compared to 41% of black students (see table 5.1). Black students make up fewer numbers than whites in the Biological Sciences, due to having been exposed to poor schooling, and thus cannot achieve the grades required to make them eligible to register for this programme.

The persistently dysfunctional school system is characterized by less than 50% of the learners who started Grade 1 in 1995 completing the full quota of 12 years of schooling, with about a third of them failing the Grade 12 examinations. Of the few who managed to pass Grade 12, only 16% met the admission requirements for university studies. Only 5% or less passed mathematics and science at the advanced level, allowing them admission into subjects with a high exchange value in the global economy, such as engineering, information technology, natural sciences and medicine. Most of the 5% were white students, with a small percentage from the black middle class, leaving most blacks in South Africa behind at this critical stage in their educational lives (Jansen, 2010; Yeld, 2010).

All prospective students who wish to enrol for BS at UP need to meet the minimum admission requirements for bachelors' degree studies, obtained by passing 7 subjects, including mathematics, physical sciences and English. The university ranks the applications from those with highest scores down to the lowest, and selection is done on the basis of the ranking order. As well as the NSC minimum admission requirements, the university uses the APS as additional criteria to select students. However, six 20-credit subjects are used to calculate the APS, so Life Orientation, for example, which is a 10-credit subject, is excluded. A student is required to have the correct subject mix and grades, which is at least 50% or more in Afrikaans or English, a first additional language (any of the indigenous languages), mathematics, physical science and two additional NSC subjects. The student must obtain APS scores of 30 and then write the National Benchmark Tests (NBT). Those who are successful in meeting the above requirements and are proficient in the NBT are enrolled in the extended programme. This programme is the slow path, since the curriculum is spread over four years for a three-year degree programme. It should be noted that the minimum admission requirements in this programme, as with all other university degree studies, is the NSC-reflecting qualification for degree studies.

My APS scores were low, thus I had to write two NBT tests English and Mathematics. I had to travel from home and come to Pretoria to write the test because I'm not staying in the university residence. People who usually write these tests go into a four-year programme; otherwise I had no idea what the test is all about.³²

The use of 'sociotechnic tools' (Goastellec, 2010) such as the NBT could also be seen as playing contradicting roles, both acting as a barrier and widening participation. It could be perceived as limiting participation when used as a selection tool, which implies writing the test prior to registration at HEIs. The test may disadvantage some students who may not be able to travel to the exam venue to sit for the test, while others may not have the means to pay the levy required prior to taking the test. One of the students pointed out that: "I had to travel a distance to come to the University of Pretoria to sit for this NBT test."

Furthermore, some learners may not have made the necessary preparations which could increase their chance of success in the test. Thus the test that was intended to widen potential access in BS may instead serve as a limiting factor, especially to this science programme. In contrast, when the NBT is used as a placement tool, which means that it is written when the student is already registered at the university, it may widen participation.

We use the NBT and I mean it's easier to say that if you struggled in Grade 11 or if your marks for Grade 12 aren't good enough, then you can go write the NBT and if you are successful then you can be enrolled in the extended programme. So I think we have an access policy that works.³³

This policy-maker suggests that the NBT may also be used as compensation for low marks, which would then give access to extended programmes. Furthermore, the NBT is also a tool that could be used to obtain additional academically-related information about the prospective students, especially those with low performance scores (Nel and Kistner, 2009). The significance and value of NBT are underscored by correlation of its qualitative literacy (QL) scores and first-year students'

³² Focus group interview 2, 14 September 2011. [Document 14:22 (56:60) Codes: Admission process – admission test]

³³ Policy-maker 4, 4 April 2011. [Document 12:4 (18:23) Codes: Admission process]

performance (Marnewick, 2012). Whilst the application of the NBT has some challenges, and could be perceived in some cases as a barrier to widening participation, it does seem to assist students from disadvantaged and under-represented groups, since it offers them an opportunity to gain access to foundation or extended programmes which in turn could lead to entry into other science-related degrees.

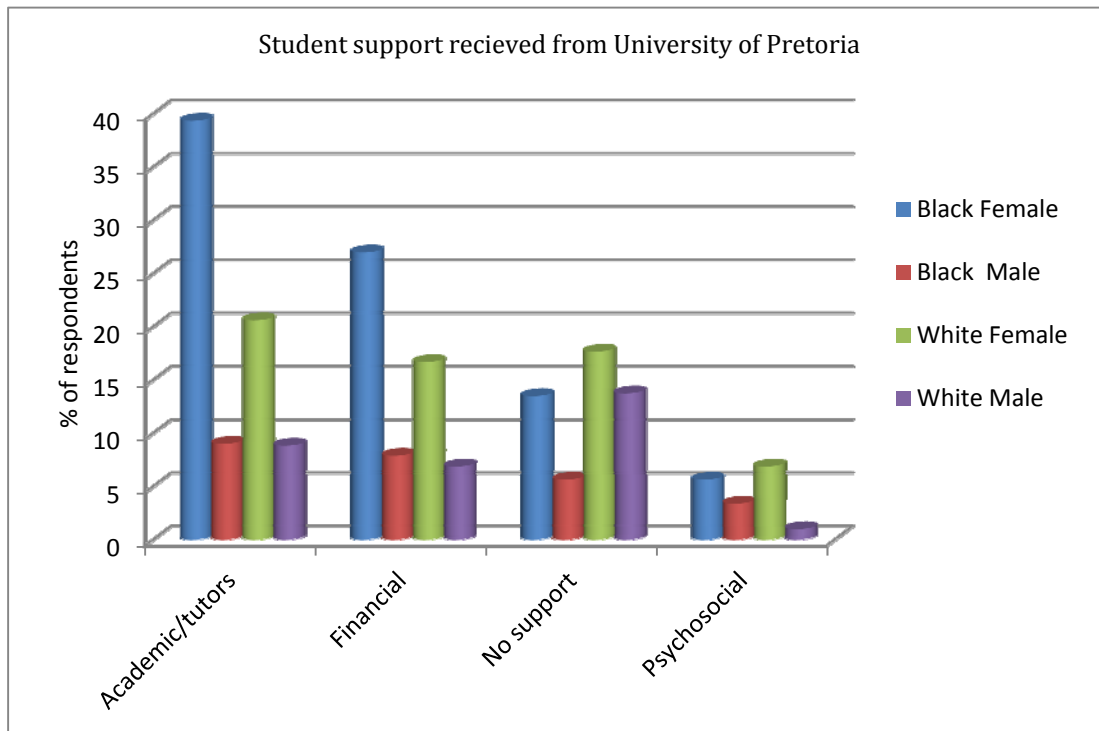
To sum up, the admission policy for BS at UP is flexible and fluid enough to adjust itself to current circumstances. There are some processes in place to widen participation, though they may be contested. Widening participation in BS at UP could be undermined by a deliberate 40% percent split between black and white students, albeit UP would perceive this effort as a way of encouraging diversity. This endeavour seems to circumvent the positive efforts of the institution of WP through the employment of NBT.

5.3.4. Student funding and widening participation

Student funding plays a critical role in success in their studies. This can be challenging with regard to widening participation, particularly for those students from under-represented groups. The funding model introduced by the government plays a role in alleviating the financial challenges faced by students. UP also assists needy students through waiver of admission fees and in this way widens participation.

Figure 5.6 below indicates that the percentage of black female students who received financial support from the university was slightly higher in comparison with white females, with 26% for black females and 20% for white females. The data indicate that a small number, slightly above 5% for black males and slightly below 5% for white males, received financial assistance from the university. 31% of black students and 23% of white students in Biological Sciences received financial assistance from UP. The data do not indicate the level of the financial assistance received from the university in the form of bursaries, loans and a government-sponsored financial assistance namely; National Student Financial Aid Scheme (NSFAS).

Figure 5.6



It is evident from the data that funding impedes widening participation in a number of ways. First, there is the lack of funds for application. Prospective students need to send applications to various universities in order to increase their chances of acceptance. These application forms must be accompanied by an application fee. For people from poor families, these fees are exorbitant and unaffordable. The prospective student may therefore have to wait for his or her parents to make ends meet, but when the money is finally received, the closing date for programmes may already have gone by. In this case, the application is accepted for programmes that still have some spaces available. In other words, the prospective student no longer has a choice but accepts what is available, as demonstrated in the excerpt below.

My mom did not have money so that I could apply to various universities. So I only applied here [University of Pretoria] and it was already late and then I took Biological Sciences.³⁴

³⁴ Focus group interview 1, 31 August 2011. [Document 13:14 (63:65) Codes: Funding]

In the second case, funds are insufficient to cover living expenses for students from low socio-economic backgrounds. This refers to students who are eligible to receive NSFAS funding. This mainly covers tuition fees, so that students have to source different funding to cover the shortfall for residences, books and other study materials.

The NSFAS funds are not enough as they cover tuition fees. The university has to decide whether to cover full costs of few students or to divide the available NSFAS fund to a few more students but covering only tuition. We only consider people that comply with the NSFAS requirements, there are many more students who need this kind of assistance, but money is not enough and money is always needed.³⁵

In spite of all these problems, the data suggest that the university's policy-makers were satisfied with the NSFAS funding model, despite its weakness. They also acknowledged that the financial problems are huge and that more is required to assist needy students to succeed in their studies at university.

Socio-economic and funding issues are big problems... In this regard I must mention that NSFAS is one of the best policy interventions made by government in the immediate past. NSFAS is of great assistance to students³⁶.

The students themselves also seemed to appreciate the financial assistance offered by NSFAS via the university, despite the insufficient money received.

Financial help from NSFAS is much appreciated. In fact any financial assistance I receive comes in very handy and it really helps me. The money pays for my tuition only and I'm not in residence because of that. But my mom is trying to make ends meet. I hope to get a UP bursary and things will be better.³⁷

Often the problem with the NSFAS funds is in their administration by the university. One of the students repeating this module indicated that: "I applied for NSFAS in

³⁵ Policy-maker 5, 3 March 2011. [Document 11:16 (181:187) Codes: Funding]

³⁶ Policy-maker 1, 11 April 2011. [Document 1:23 (294:300) Codes: Funding]

³⁷ Focus group interview 2, 14 September 2011. [Document 14:15 (135:139) Codes Funding]

2010 and I did not receive any reply. It is a struggle to get by every month and when I enquire, the administrators told me to wait and now it is 2011 and no response yet.”

In order to lessen the financial burden, the University of Pretoria offers bursaries specifically to students who excel in academic performance. The government is aware of this funding challenge and is reviewing the NSFAS funding framework. It also offers students a bursary that waives the application fees, since the NSFAS can only be accessed once the applicant has registered as a student of the university. The data, however, indicated that this information was unknown to the target groups.

Funding plays a critical role in the students’ success, as financial constraint with regard to living expenses is one of the key challenges in higher education (Mdepa and Tshiwula, 2012). The role played by NSFAS is essential and critical, but may impact negatively on widening participation since it mainly covers tuition fees, leaving students to find other ways of taking care of living expenses which can be high. Thus NSFAS allow students to “get in”, but does not support them as they are struggling to “get through” their studies. Some of these difficulties are dealt with by the university by issuing bursaries that waive the admission fees for students, allowing them to register and become eligible for NSFAS. However, some of these efforts to widen participation are hampered by lack of information and students being unaware of the available resources.

5.4. Getting through

‘Getting through’ presupposes that admission to higher education has already taken place. It therefore addresses the processes and systems put in place to support students in order to widen participation and achieve access with success. Two of the main components of ‘getting through’ examined in this study are the orientation period and student support. The orientation period seems to be more compelling for both students and lecturers, particularly those lecturers who offer introductory lessons during this programme. In contrast, the least compelling component of ‘getting through’ is psychosocial support.

5.4.1. Orientation period and widening participation

During the orientation period new students are given a general introduction to the university. The orientation programme in BS at UP is designed to help students adjust socially, to equip them with study skills, including the use of the library, as well as to introducing them to the lectures. It is also used to conduct competency tests, such as computer literacy.

The two-week orientation is normally conducted at the beginning of the year at the University of Pretoria. It is open to all first-year students and is therefore not designed specifically for those from under-represented groups or for BS. The orientation is supposed to benefit all the students, since even some of the students from advantaged backgrounds have difficulties in adjusting to university life.

According to one of the policy-makers, the orientation programme for students enrolled at the Biological Sciences attempts to encompass the administrative, academic and social aspects of the first-year students:

We have an orientation period programme where general information about the university and information on all sorts of academic issues is provided to first-year students. Study issues, time management, curriculum assistance and compulsory study hours are also addressed. We have all sorts of social activities and societies that students can participate in and belong to. Having friends at university is probably more important than formal support services³⁸.

The orientation period, therefore, helps to enhance the social networks of the new students, as they will need such support to survive at university and succeed in their studies.

During orientation, the first-year students are taught skills, such as how to study. In addition, assessment tests are conducted which could illuminate the kind of support that the students will require. These tests may lead to students taking programmes which might help them to succeed with university studies.

...[T]here are very different ways, depending on the student, what the course is, and these are not just for previously disadvantaged students, they are also

³⁸ Policy-maker 1, 11 April 2011. [Document 1:38 (316:323) Codes: Orientation period]

for students from advantaged background, sometimes they have difficulties too. In principle, everyone has access to these measures, but they tend to be used more by people from previously disadvantaged backgrounds. There is a two-week orientation programme which is designed to give students a good introduction to university, how you study, how you choose your subjects, and if you have difficulty where to turn to for finance, for housing and pointing out all the different systems you can access, that's largely academically orientation for those two weeks. There are also tests that students take to see if they fit into programmes where there is specific assistance, so they will write a number of tests and according to those they could be required to take some of the programmes that offer this assistance.³⁹

The lecturers have an opportunity to give an overview of some of the main courses during the orientation period. The purpose of such presentations is to whet the students' proclivity as well as to help them confirm that they have chosen the programme they really like. The lecturers were positive about the orientation period and supported it.

The vice-principal started the presentation sessions as part of the orientation week for the first years, to have the introductory lectures in all main courses, for example, before we actually start with academic year classes, the BS students will all get a lecture on cell biology to explain to them what it is about, how does it link to what they are doing at university, and then also what's going to be expected of them to help them to bridge the gap between what happened at schooling and university.⁴⁰

Some of the students acknowledged the introductory lessons, but were worried about finding accommodation, as not all of them could be accommodated in residence; as a result, they did not pay sufficient attention to the lessons. Nonetheless, the first-year students applauded the orientation period, regardless of their personal challenges.

At the beginning of the year students were orientated around the university and attended the introductory lessons. These lessons seemed interesting,

³⁹ Policy-maker 3, 18 April 2011. [Document 2: 9 (164:177) Codes: Orientation period]

⁴⁰ First year lecturer 1, 7 April 2011. [Document 10:25 (361:371) Codes: Orientation period]

but we were still trying to find our feet and get accommodation. The students in the residences had books that told you at this time go to this venue. We did not know anything by ourselves; however, when you are in residence you had people that would take you everywhere and showed you around the university.⁴¹

Students from outside Pretoria who were not in residences struggled a little to find themselves within the university during the orientation period. It was evident that in order to widen participation to students from rural and semi-rural areas more attention needed to be given to full access to the residences.

Despite the challenges with residences, those students who were in the residences seem to have enjoyed and benefited from the orientation week. “I live at the residences and therefore get exposed to several activities, including sports. The orientation week really opened my eyes and now I feel that am a university student, as I know where the library is and I enjoyed the introductory lessons.”

In this sense, the orientation period had achieved its purpose, as it managed to make some students feel settled and raring to get on with their studies. However, very few students mentioned the orientation week as a positive experience.

Indeed, those students who were already settled in residences benefited the most from the orientation programme. These were the same students who had planned their university year in advance and had not simply wandered off into a course. Those who were not accommodated in residences or did not have an alternative accommodation nearby found it harder to focus on the orientation programme.

⁴¹ Focus group interview 3, 14 September 2011. [Document 14:16 (47:53) Codes: Orientation period]

5.4.2. Widening participation through academic support

The student support offered by the University of Pretoria is divided into three categories, namely academic, psychosocial and financial. The other forms of academic support that are offered by UP are foundation and extended programmes which play a critical role in widening participation in Biological Sciences.

Figure 5.6 (in section 5.3.4) illustrates the efforts of the University of Pretoria in offering general support to first-year students. The support not only aims at improving the lives of individual students but it is also part of UP's endeavour to widen participation. The graph indicates that academic support had a high uptake among first-year BS students. 36% of black female and 18% of white female respondents indicated that they received academic support and had benefited from such support. It is interesting to note that 16% of white female and 12% of black female respondents indicated that they had not sought any form of support from the university. These could be students who felt that they were already well prepared for university studies and did not need to solicit any form of assistance, particularly academic support. The other possibility could be that these students were not aware that this kind of support was available to them, and therefore had not tried to access it.

The data indicate that academic support was anchored in both the systems of mentoring and tutoring which were offered to first-year students with a view to facilitating their transition from secondary school to university. One policy-maker explained the difference between mentoring and tutoring:

Mentoring is applicable to first-year students only. Tutoring is presented more widely. However, we have found that some of the students from NSC need support in the second and third year also. This is very expensive and we don't have enough resources to do this on top of everything else that is required from us⁴².

Mentorship encompasses the kind of support in which a senior student in the same or a similar programme is assigned to mentor a first-year student in his/her studies. The mentorship programmes in some cases also includes variants on the buddy

⁴² Policy-maker 1, 11 April 2011. [Document 1:18 (214:219) Codes: Academic support]

system, such as ‘big-sister-little-sister’ programme. This kind of relationship creates a form of safety net for the first-year student who finds him/herself in an urban university which in some cases is in a completely unfamiliar place. Thus the first-year student will know who to turn to in time of need or when seeking counsel about studies.

The mentors also encourage first-year students to participate in various university social activities, such as the float and fund-raising activity called ‘reach out and give’ (Rag). One of the students indicated that: “My mentor says life is not about books only and she encourages me to participate in various activities, but I cannot as I spent most of my time catching up with work.”

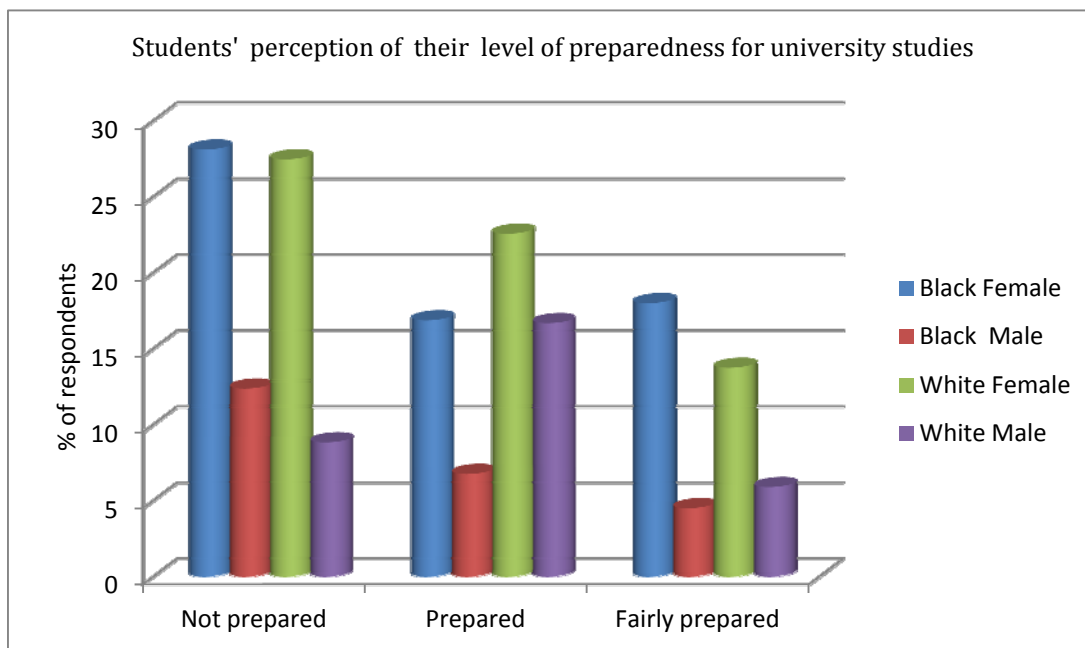
Tutorship is a subject-based kind of academic support. That is to say, students who are struggling with their studies or perhaps need assistance in a specific subject may solicit help from tutors. The tutors are senior students in the same programme who have successfully completed the relevant subjects and have sufficient grasp of the subject content to enable them to tutor the first-year students. There is a compulsory study period in residences for first-year students. This study period is monitored by the personnel responsible for the residences. This kind of support is essential, as it mediates one of the challenges facing black students. If this intervention is successful, it can lead to access with success in the Biological Sciences at the University of Pretoria.

Academic support in the form of mentoring and tutoring is experienced differently by first-year students in Biological Sciences. The majority of black students, who made up 63% (36% female and 7% male) (figure 5.6), compared to 27% (20% female and 7% male) of white students, appreciated this form of academic support but there were those black students who were not impressed either with the tutors or their tutoring skills. This may vitiate the good intentions of the tutorship and mentorship programme.

The tutor comes there and just does five problems [subject-related questions, such as mathematical problems]. He just stands there and does the problems and then he leaves. He does not make sure that you understand, and then we keep on failing.⁴³

The level of academic support offered by the university is determined by the level of student preparedness to deal with university life and academic demands. Figure 5.7 below indicates the perception of first-year students in BS on their own level of readiness to handle the academic rigour required at university level. The data show that 23% of the black female students believed that they were not adequately prepared for university studies. Only 16% of black female students, compared to 23% of the white female respondents, maintained that they felt prepared for such studies. About 13% of black male respondents, compared with 6% of white male respondents, felt they were not being adequately prepared. The data show that altogether 36% of black students were not adequately prepared for university studies. This resonates with the overall impression that many blacks feel they are unprepared for BSc studies which they relate to their attendance of low-performing schools.

Figure 5.7



⁴³ Focus group interview 1, 31 August 2011. [Document 13:21 (126:131) Codes: Student support - academic]

Another support mechanism used by the University of Pretoria is a sophisticated student-lecturer on-line communication computer programme called 'click-up'. This is a platform on which lecturers can post study material, practice questions, and additional information that they would like to put across to students. This tool is a viable and efficient form of communication with students. The students use it because they know the lecturers post vital information there, for example, presentations, lecture notes, etc. Students at the university have access to computer laboratories where they can use internet and are thus able to use the 'click-up'. Those who have access to internet at home can also use it but those from townships and rural areas without this facility can only access it when at the university.

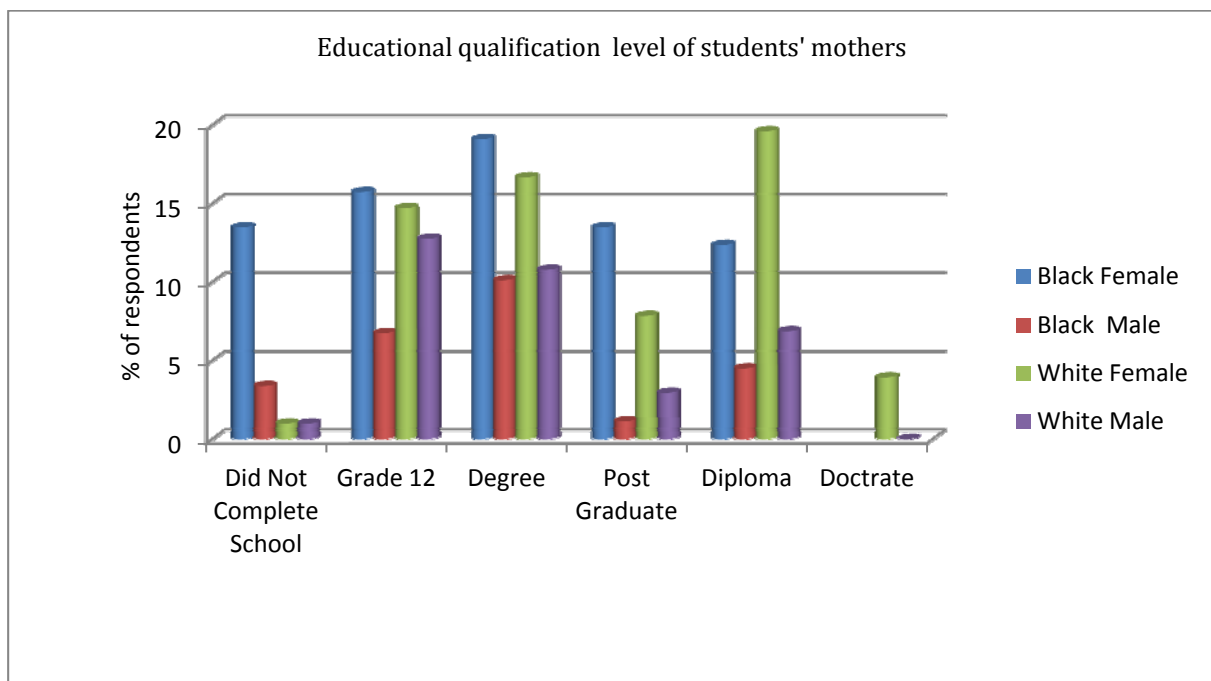
The foundation and extended programmes are additional mechanisms used by UP not only as forms of academic support but also as part of the attempt to widen participation in Biological Sciences. The foundation programme is a first-year programme that is designed to provide a strong anchor for those students who have potential but who have not met the required grades. It aims at narrowing the chasm between school and university studies as it covers some sections from the secondary school curriculum and introduces some curriculum content covered in BS at university. The foundation programme thus adds an additional year of study to a three-year programme. The extended programme also increases a three-year programme to four years. However, unlike the foundation programme, it is a slow programme. Students who have potential but missed the admission requirements by small margins are placed in this programme and their curriculum is spread over an extended period.

... [W]e have developed over the years a number of access programmes that are aimed specifically to try and address these issues. We have in the sciences, for example, but also in some of the other faculties' programmes in which there's an additional year where there are foundation programmes in the first year and then the students do a three-year degree. But also a slightly slower presentation of the first-year work in the extended programme that is spread over 18 months, and then in the middle of the second year they will

join the main stream... So these programmes are designed to facilitate access by students that aren't fully prepared but that have potential.⁴⁴

Parental support plays a critical role in education. Parents play a crucial role in providing a stimulating home environment and 'cultural capital stock' in the form of books, the computer and internet (Jaeger, 2009). Their own educational level is also important. Figures 5.8 and 5.9 below describe the educational level of parents or guardians of the sampled first-year students in BS for the academic year 2011. Figure 5.8 shows the educational qualifications of the mothers. The data indicate that 19% of the white female student respondents' mothers had obtained diplomas and 16% of the same respondents' mothers had degrees. In comparison, 12% of the black female respondents' mothers had diplomas and 18% had degrees. Furthermore, 5% of the white female mothers had doctoral degrees while none of the mothers of the black female respondents had a doctoral qualification. The data suggest that fewer South African black females pursue studies until doctoral level (ASSAf, 2010). The dearth of black females who pursue studies to doctoral level could be attributed to the fact that females carry the burden of family responsibilities.

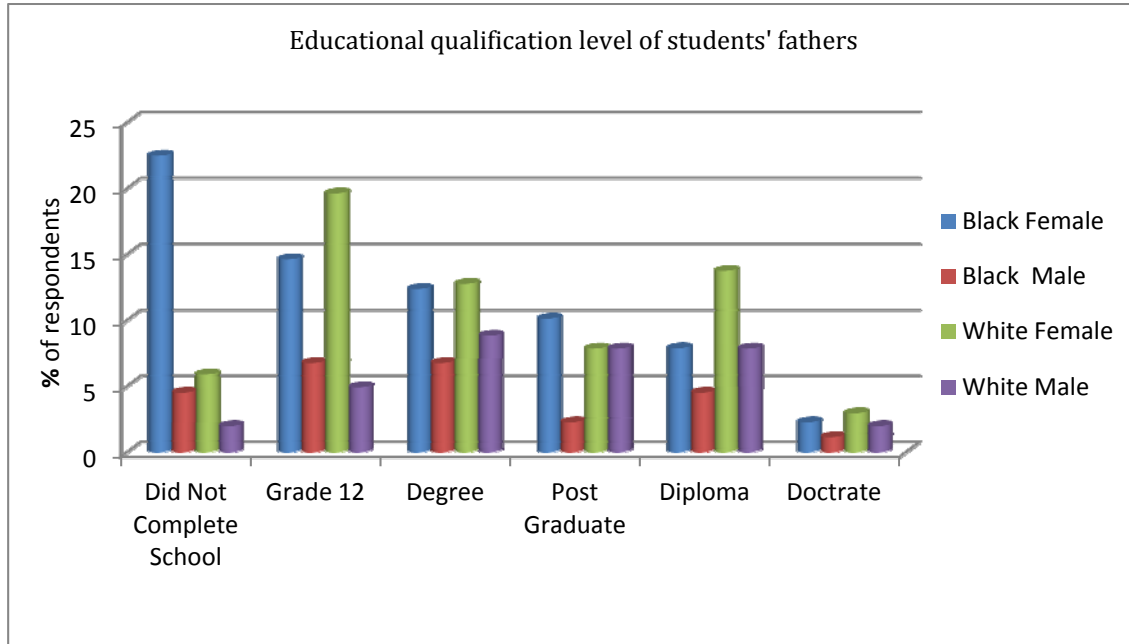
Figure 5.8



⁴⁴ Policy-maker 3, 18 April 2011. [Document 2:5 (85:103) Codes: Admission policy]

The educational level of the fathers of the sampled first-year students in BS is shown in figure 5.9 below. The data show that 25% of the fathers of black females did not complete school, i.e. they did not have a Grade 12 school qualification. White fathers who did not complete school made up less than 5% from the sampled white female respondents. About 14% of black female respondents' fathers had Grade 12 school qualification as compared to almost 20% of white female students' fathers. Although both black and white female respondents' fathers made up 12% an equal percentage of white females' fathers had diplomas. This gave them an advantage in terms of having information about higher education. Almost 1% of black females' fathers had doctoral degrees, as compared to black females' mothers, who did not have doctoral degrees. It is clear from this data that mothers of white female students had better access to schooling than mothers of black female students.

Figure 5.9



The data showed that mothers of both races had better qualifications than the fathers. The educational level of the parents suggested that they knew the value of education and in some cases had been to higher education institutions. Thus they could serve as point of reference and provide 'cultural capital' to their children and reinforcing the need for them to go to university and in so doing widening participation. Given this background, it is clear that support for student success comes not only from the university but that parental support also plays a critical role.

Despite of all the academic support available to them, students still seemed to struggle with academic demands. The data suggested that there was a deep-rooted challenge with students expressing displeasure at their poor academic performance and claiming that one of their main problems was the workload. According to the first-year students the workload was unwieldy, often overwhelming for them, and this resulted in poor academic performance. Despite their hard work and a significant amount of time spent on studying, they did not score good grades and those who passed just barely made it.

The students gave various reasons for their poor performance. These included firstly, the schedule of exams and not having enough time between classes, examinations and practical sessions, overwhelming workload and long days, i.e. classes from morning until late in the evening.

Here [at UP] I always get 56% and I seldom get 60% or above. When you are at varsity you need to work harder and you will reap what you have sown. But here is the problem: if you have a semester test on Wednesday and had another one on Tuesday and then a practical session in the afternoon you will not perform well due to this enormous workload. We attend lessons from 7h30 to 17h30, there's simply no time to study during the day.⁴⁵

Secondly, there are differences in study approaches between school and university. For instance, volume of the work, the rhythm of progress and the degree of independence in relation to work and the departure from the secondary school pastoral approach were some of the domains that created difficulties for new

⁴⁵ Focus group interview 1, 31 August 2011.[Document 13:24(133:141) Codes: Student readiness – academic performance]

students in coping with university studies (Cross and Carpentier, 2009). The teachers at school level, however, followed up learners and gave them extensions.

I was so good at high school, you know. I know this is not high school but I'm just comparing. However, I now realize that my teachers always pushed me and gave me additional time to complete my work. They made sure that you submitted your work, but here at varsity the lecturers do not follow you up, they just issue assignment and due date and if you do not submit you suffer the consequence thereof.⁴⁶

To recap, it seems that academic support is considered by the policy-makers as the main policy instrument to widen participation to BS at UP. The mentorship and tutorship programmes offer students assistance and the foundation and extended programmes also help alleviate pressure on students who are already struggling. Thus academic support plays a role in widening participation. Whilst there are challenges with regard to the academic support programmes offered at UP, the data point out that more support in terms of time management, extended time between examinations and practical sessions could ease the transition between school and university and thus encourage widening participation, especially in Biological Sciences.

5.4.3. Widening participation through psychosocial student support

In order to cater for the wellbeing of the students including those from under-represented groups, the University of Pretoria has psychosocial student support facilities. These facilities are available to registered students and include both psychosocial and medical support.

After registration; within faculties there is support staff who help to run the tutor programmes. We have these processes of trying to identify the students that have difficulties and then the Dean's office is there to provide comprehensive student support services. This is their purpose, to help students with medical, psychological [problems], and can even help them with

⁴⁶ Focus group interview 3, 14 September 2011.[Document 13:15(35:46) Codes: Student readiness]

where to go when they have financial problems, so it's really a central place for them to go to in terms of support.⁴⁷

The data show that this kind of support encapsulates various structures that are available to students, ranging from counselling (career, life skills, HIV, etc) to 'day-house' and recreational clubs. The day-house plays a significant role, as it provides one decent meal a day for students who do not have the means to buy meals. The support, however, always comes with the word 'but'.

We have a large number of support systems and programmes. We also have support structures in place in the residences. We also have a special unit for students with disabilities. There are social workers, psychologists, etc. available at the Student Support Centre for registered students. But in the end the University unfortunately is not a welfare organization and the problem is that, whatever you do, it's never enough. We have to deal with capacity and resource constraints. In the process, we must not lose sight of our primary mission.⁴⁸

The University of Pretoria uses specialist professionals such as psychologists and social workers to provide the psychosocial service support to students. This service aims at helping students, particularly those from disadvantaged backgrounds, to succeed in their studies.

... [T]here is a whole range of systems in terms of psychological help and social work help and the financial aid and all of those sorts of things. So, they [students] are given assistance on those things and such as how to use the library, etc ... The services that I mentioned earlier, like psychological help and medical services, those are in the department of student affairs, so they are specialist groups that are there to address these sorts of issues.⁴⁹

Figure 5.6 in section 5.3.4 indicates that an overall 8% of black students (5% female and 3% male) used these services. The uptake rate of the psychosocial services by white students was also low, as only 7% of these students (6% female and 1% male) used them. This lack of popularity could be ascribed to a stigma which may be

⁴⁷ Policy-maker 6, 3 March 2011. [Document 3:21 (303:312) Codes: Academic support]

⁴⁸ Policy-maker 1, 11 April 2011. [Document 1:21 (264:273) Codes: Psychosocial support]

⁴⁹ Policy-maker 3, 18 April 2011. [Document 2:10 (177:188) Codes: Student support]

attached to such services. One of the students pointed out that “it is difficult to go to psychosocial services because people look at you differently if you are seen going in there.”

Regardless of the low uptake, psychosocial support played an important role. Although not directly linked to academic studies, it contributed significantly to the students’ success. The kind of help they receive in this support system was like water in the oasis. One of the black students, for example, recalled that he had been given a psychological counselling to help him deal with personal issues that were affecting his academic performance:

I got a letter last semester because my results were not good and I was struggling to cope with school work because of my personal problems. The letter indicated that I should go there [student centre] and see someone who asked me about the reason for my failure. I saw a professional person, a psychologist who gave me advice and counselled me. They find out about your problems and disappointments and they help you deal with your issues.⁵⁰

Psychosocial support is conducted within the faculty and uses tutors to assist in identifying students in distress who are then directed to the student service centre to seek help. This comprehensive support service is not academically inclined and the uptake seems low, but it is nevertheless essential to students’ success in their studies and therefore important for widening participation. One of the students who received assistance from the psychosocial service pointed out: “I don’t like counselling, but, yes, it is helpful and the people there are doing a wonderful job. I am here now because of them”.

5.4.4. Institutional culture and widening participation

This section on institutional culture will analyse students’ lived experiences at the University of Pretoria. The main question asked is: *Do students feel ‘at home’ at the University of Pretoria?* It was noted that the experiences were varied. Some black students expressed cultural shock but enjoyed their independence. Networking helped students through their first year of studies. In general, more white students

⁵⁰ Focus group interview 2, 14 September 2011. [Document 1:1 (13:18) Codes Psychosocial support]

than black referred to networking as a positive experience and more female than male students. Networking can thus be used to leverage widening participation in Biological Sciences.

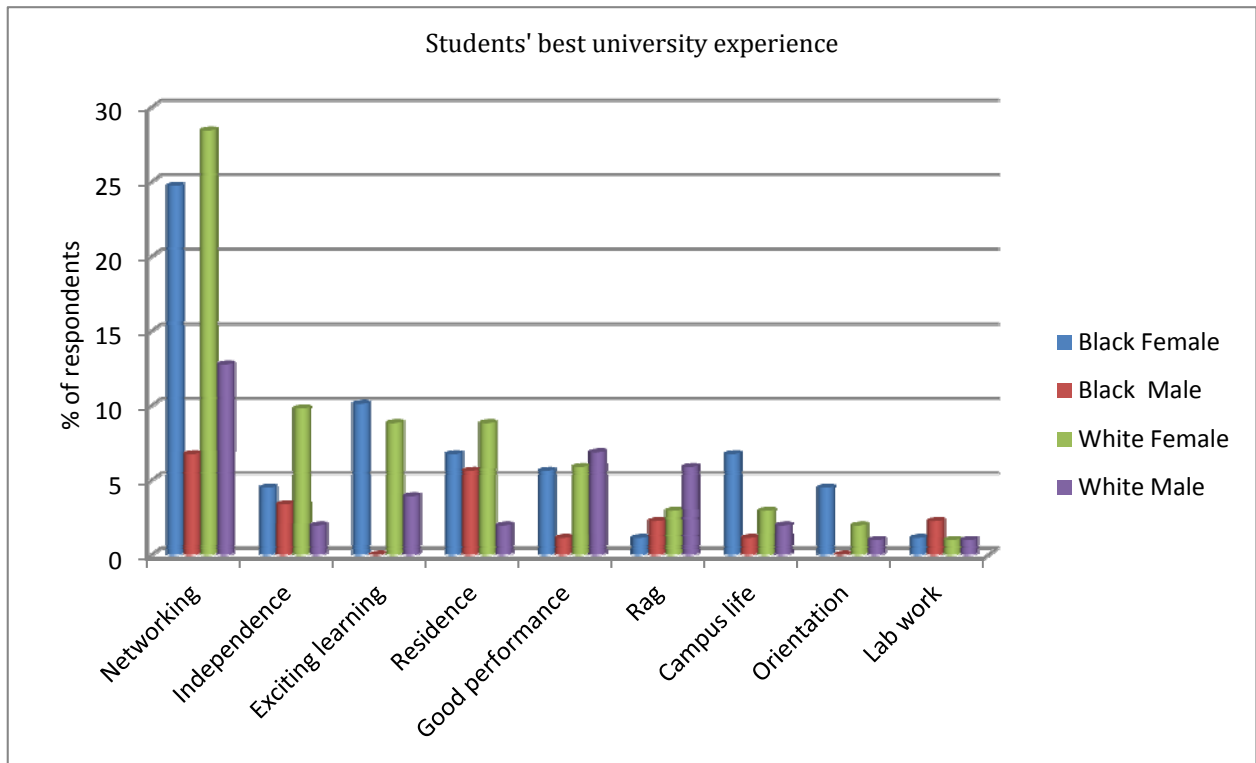
Figure 5.10 below shows that 24% of black female students indicated that their best experience was networking, while 32% of white female students had a similar experience. Networking seemed not to be as important for males as it was for females, because only 6% of the sampled black male students and 12% of the white male respondents put it as their best experience. This could mean that both black and white female students perceived forming new networks as important because these networks and new relationships could perhaps help them survive university life. Forming networks could also be understood in the sense that the students found themselves in a new and unfamiliar environment. Having abandoned their secondary school networks, it had become apparent that they needed to form new networks.

Only a very small percentage of students mentioned independence as a positive experience. It seems that more white female students (10%) than black female students (5%) enjoyed the independence that university life offered them.

When asked about their worst experience, a large number of the white students singled out sharing a room with a stranger (62% of white female and 34% white male students). At the same time, very few black students referred to this as a bad experience. This begs the question, whether most of the black students in this programme had not been accommodated in a residence, especially those who had registered late or wandered into the programme without planning it in advance, or whether they did not find sharing accommodation problematic but instead rather enjoyed the experience and the networking.

Two of the popular experiences were 'exciting learning' and 'good performance', as 10% and 5% of black female students, respectively, picked these as their best experiences, compared to 8% and 5% of white female students. It is interesting to note that 4% of black female students from the sample said they had had their best experience during the orientation week. Laboratory work (practical work), including computers, received the lowest percentage from both races and genders, as it rated less than 1%. However, one respondent noted that "the view from the building is breathtaking."

Figure 5.10

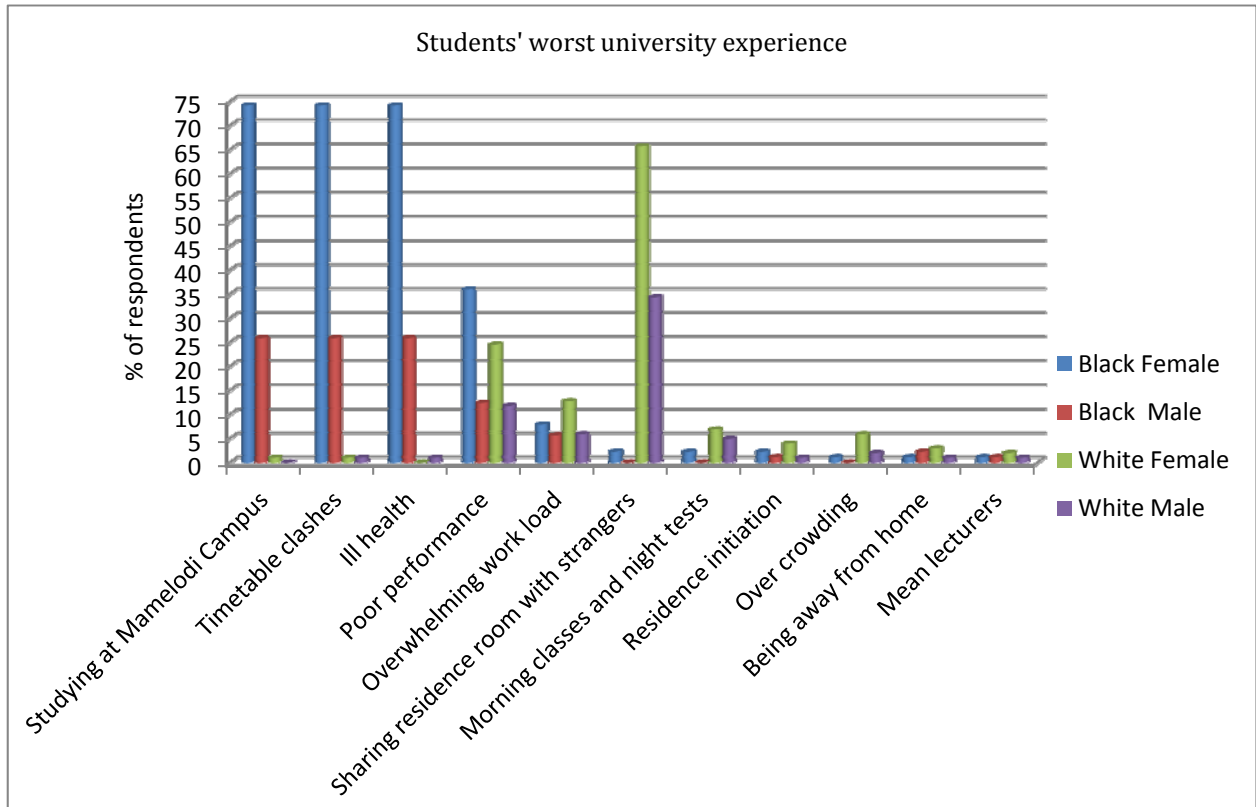


The questionnaire also sought to find out about the worst experience of the BS students in their first year at university. The percentages for worst university experiences varied, with the most highly ranked worst experience for black females being studying at UP's Mamelodi Campus, followed by timetable clashes and ill health with each amounting to 72%. In comparison, the white female students' worst experience was sharing a room in a residence. Poor performance was also a key factor, picked as their worst experience by 34% of the black female students and 22% of white female students. The percentages for worst experiences seem a little low nevertheless, assessing such experiences is important in widening participation in Biological Sciences at University of Pretoria.

Other factors that the students, both black and white and both genders, raised as their worst experiences were mean/rude lecturers, residence initiation rituals, and staying off-campus, with each category making 1% (see figure 5.11 below). Residence initiations could be detrimental to students' success. The evening classes

could have been a challenge for students who were not accommodated in a student residence, given the unreliable public transport in and around Pretoria.

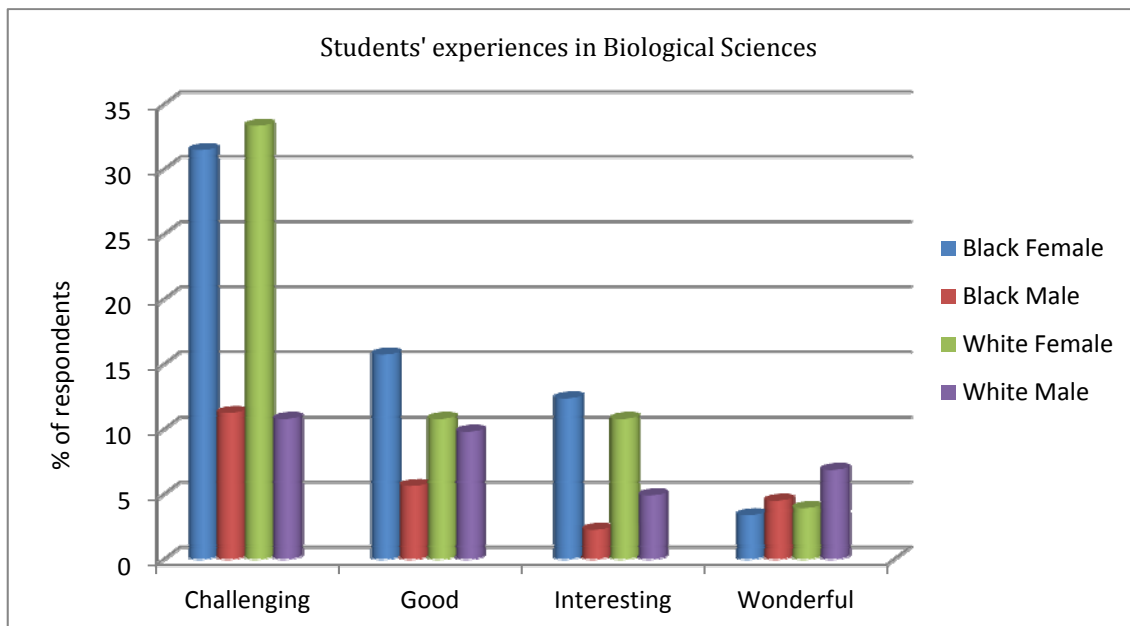
Figure 5.11



The first-year students' experiences in Biological Sciences are myriad and varied; however, four main key words were used by the respondents, namely 'challenging', 'good', 'interesting' and 'wonderful'. Figure 5.12 below records these experiences in terms of race and gender. 34% of white female students were of the view that the programme Biological Sciences was challenging. The same view was expressed by 32% of black female students, with 10% of both black and white male students sharing similar views. 15% of black female students described their experiences in the Biological Sciences as good, compared with 10% of white female students. Very few students said their experiences in Biological Sciences were interesting and wonderful; 12% of black females and 10% of white females said their experiences were interesting, while wonderful experiences were below 5% for all races and gender groups, except white males, whose wonderful experiences were slightly

above 6%. It is important that all stakeholders create memorable experiences for students in Biological Sciences, so that they can stay the course and realize ‘access with success’.

Figure 5.12



The institutional culture plays a critical role in enhancing students’ ability to negotiate access with success in Biological Sciences at the University of Pretoria. Such a culture resonates with Bourdieu’s (1977b) concept of habitus – feeling at home away from home - which may contribute to the success or failure of the student. The student’s ability to ‘feel at home’ in an institution is enhanced by artefacts, names, food and other cultural objects that relate to the student or with which he or she can identify. The absence of these fundamental elements may lead to the university environment appearing harsh and unwelcoming. In this light, the students, particularly black students, may feel alienated, and this may have a negative impact on their studies. Poor performance in turn could lead to possible academic exclusion. One of the first-year students pointed out that:

It's a cultural shock. You come at the residences and you are one of the ten black students there. I mean, it's a big cultural shock, there's also language difference.⁵¹

The black first-year students had to adjust in order to 'feel at home', despite the fact that being at the institution did not feel that way. The 'white' culture made them feel alienated. It was, therefore, a question of adapting or 'fitting in' with a view to completing their studies. Failure to adapt could result in them dropping out of university. However, some of the students pointed out that things needed to change.

Some of the residence traditions need to change to accommodate black people because we did not feel accommodated. Most of the things [activities] we did during the orientation week were English things [activities] or white things [activities], we don't sing black songs, and there are no games commonly played by blacks. We do not have such things [activities]⁵².

Positive experiences could help first-year students to 'feel at home' and thus fit in with the university culture and establishing cultural capital that would help them to survive in their university studies (Thaver, 2006; Bourdieu, 1997b). However, negative experiences may lead to poor performance and to the student abandoning studies and leaving the university. Assessing student experiences is therefore important, as it helps to unravel how students from under-represented groups negotiate access with success in the Biological Sciences at the University of Pretoria.

Language is a vehicle used to transmit culture and cultural practices. The language policy of the University of Pretoria insists that teaching be done in Afrikaans and English. However, these are not home languages for many students, especially for black students. In this light, the language as medium of instruction does not only become an impediment to learning and teaching but also a barrier that precluded these students from pedagogical engagement. The situation was aggravated by the lecturers' inconsistency in applying the language policy. The lecturers code-switched between Afrikaans and English; i.e. they might teach in English but gave examples in Afrikaans, or vice versa. They would "teach in English with class notes in Afrikaans

⁵¹ Focus group interview 1, 31 August 2011. [Document 13:17 (84:89) Codes: Institutional culture]

⁵² Focus group interview 2, 14 September 2011. [Document 14:20 (179:184) Codes: Institutional culture]

or teach in Afrikaans with class notes in English or teach in both English and Afrikaans at the same time” (CHE, 2010:116). The students pointed out that they were taught in English, but that the lecturers sometimes mixed the languages making it more difficult for them.

We are taught in English, but some lecturers mix with Afrikaans and it becomes difficult. The Afrikaans group are taught in their mother tongue and get the questions in Afrikaans and if they don't understand they resort to English.⁵³

Either way, black students were short-changed as some of them struggled with English. In this context, the language or medium of instruction at university level continued to serve as a barrier to epistemological access and thus limited widening participation in Biological Sciences of those from under-represented groups. The use of languages interchangeably not only affected international students but university personnel as well:

I mean, if I am struggling about the usage Afrikaans, then what about the poor students? I think that there is an effort when it comes to some faculties where they actually try to help, for example, they lecture in some modules in English and then some modules are offered in Afrikaans, but students do suffer because of the language issue, especially the international students. When taught in English it's better, but they suffer even more when the lecture is in Afrikaans. University policy is that we are supposed to have lectures in dual medium, either in English or Afrikaans; however, not all the lecturers do that. So it's up to the lecturer to make sure that all students are accommodated. But in some modules, students can either go to the Afrikaans or English class, and students complain that students in the Afrikaans class get a better scope than those in the English class, but you will find that, I guess, in all institutions that use both English and Afrikaans.⁵⁴

One of the key issues that emerged from the data analysis with regard to the first-year student experiences at the University of Pretoria and in Biological Sciences was

⁵³ Focus group interview 1, 31 August 2011. [Document 13: 29 (202:204) Codes: Student readiness]

⁵⁴ Policy-maker 4, 4 April 2011. [Document 12: 31 (353:373) Codes: Student readiness]

the issue of adapting to the 'white' culture. The students' experiences were closely linked to the institutional culture and to the values of the institution, but varied between the different groups. Both black and white females indicated that networking was their best experience. Some students perceived the university environment as harsh. White females, for instance, disliked sharing accommodation with strangers. Some of the students, however, welcomed their new independence.

5.5. Conclusion

This chapter gave detailed descriptions of the findings and their interpretations. It was found that participation could be enhanced with student recruitment conducted through the in-reach and out-reach programmes facilitated by both the CSC personnel and the first-year lecturers at UP. The University of Pretoria recruits students across the length and breadth of the country including in both urban and rural areas.

One of the emerging themes was student readiness. This plays a critical role in widening participation because inadequate preparation of students for university studies not only become a hindrance to WP at university level but also affects the mandate of the university. Furthermore, it has proved to be a costly exercise for the university. There is a need for the school system to better prepare the students for higher education by exposing them to a high level of cognitive activities and a better exposure to career guidance. One of the key issues that emerged was the alienation brought about by 'white' culture, compounded by the question of language.