CHAPTER 4

MATRIC RESULTS

4.1 Introduction

It seems that proficiency together with aptitude is a reasonable indication of an individual's ability. Aptitude is an indication of potential and proficiency and refers to acquired skill and knowledge according to Malan (1987:42).

School performance according to Smit (1992:8) refers to a pupil's performance in the different exams during his/her high school career with specific reference to the performance in the matric or senior certificate exam. This performance is used as the criterion for Technikon entrance.

General admission requirements differ from one tertiary institution to another, and within one tertiary institution there may also be different requirements for every faculty or learning programme, according to Kotze et al (1996:44).

4.2 Matric results as a predictor of academic success

Fourie's (1989:1) investigation shows that successful first-year students at RAU (Rand Afrikaans University) had obtained significant better (higher) matric symbols as those of unsuccessful students. Behr (1985:108), Biggs (1978:273), Watkins and Hattie (1981:384), Bokhorst et al (1992:64), Van Wyk and Crawford (1984:9) as well as Stoker et al (1985:7) confirm this finding.

As opposed to this the research of Zietsman and Gering (1985:3), Kotze et al (1996:39), van der Walt (2000:4), Botha and Cilliers (1999:144), Brink (1999:522) and Jooste (1988:60) shows that although matric symbols are a

poor predictor of academic success, these are the most often used criteria to determine entrance to tertiary institutions according to Bargate (1999:139).

Mitchell and Fridjhon (1987:555) state that the difference between matric results and first-year performance depends on the particular matric examination that was written.

Zietsman and Gering (1985:3) refer to the influence of milieu disability, which leads to matric results being a poor predictor of academic performance. Miller (1992:98), Gourley (1992:71), Monteith (1988:23) as well as Huysamen and Raubenheimer (1999:171) question matric performance as a predictor of academic success as a result of the difference in instruction approaches between schools and tertiary institutions.

Mitchell and Fridjhon (1987:555), as well as Botha and Cilliers (1999:144) mention that the matric average is still the conclusive criterion. While matric standards of White and non-White schools are not comparable neither are those of European schools in different provinces. Potential testing to determine additional criteria should be investigated by tertiary institutions.

Miller (1992:100), Jacobs (1996:37) as well as Zietsman en Gering (1985:3) are adamant that matric results cannot be used as the sole predictor for entrance to tertiary institutions. Douglas (1971) and Travers (1949) have focused attention on the poor relationship between:
"the pattern of high school subjects and success in university, with the requirements for specific high school credits and courses barring as many superior as inferior students from university" as mentioned in Perkins (1971:106).

According to Jooste (1988:59) the results of matric examination are the only criteria considered to provide entrance to UNISA (University of South Africa).

Much has been said and written about the inadequate high-school training offered by especially the former Department of Education and Training and

about the disadvantages of pupils from this department when they compete for admission to tertiary institutions on an equal footing with pupils from other education departments. Zietsman and Gering (1985:184), Bokhorst et al (1992:59), Mitchell and Fridjhon (1987:555), and Huysamen (2000:146) not only show the discrepancy between academic success and different schools, they also show the discrepancy between the results of the different matriculation boards, eg Transvaal in relation to Natal, etc.

Research conducted by Mitchell and Fridjhon (1987:555) reveals differences in results of first-year students and matrics. This difference is linked to the specific matric examination that was written. It was observed that the previous Joint Matriculation Board's examination and the Indian senior certificate examination produced students who were better equipped for tertiary study than those with a Transvaal senior certificate and, in certain cases, the Natal senior certificate.

Those educational authorities who place a high priority on obtaining a high admission rate to tertiary institutions, without considering whether the scholars will indeed be successful in their tertiary studies, do the tertiary institutions and ultimately the community, an injustice.

Mitchell and Fridjhon (1987:555) mention that only a small percentage of students with matriculation exemption attend university, and it appears, therefore, that examinations that hold additional advantages for future achievements at university, assist only a minority of students. The most persuasive argument is that problem solving skills and the capacity to relate the general to the specific are those skills that should be inculcated during tertiary training. Ironically, those skills are also of value to those students who choose not to attend tertiary institutions.

Taylor and Radford (1986:80) postulate that apartheid practices such as *"..... unequal per capita government spending on educational and social facilities, statutory and informal restrictions on the occupational and geographic mobility of certain groups, and various other consequences of*

the political dominance by one ethnic group of others in a heterogeneous society, are considered likely to have contributed to a differentiation in opportunities for cognitive development...." for different population groups.

Such opinions constitute the reason for calls for affirmative action. In the name of affirmative action, appeals are made for the admission of a greater number of applicants from among those who have completed their high-school training under the former department of Education and Training. Because of the poorer selection-test performance of this very group, calls are frequently made for the abolition of such selection tests. However, test bias does not necessarily have to be synonymous with predictive bias and or selection fairness. There are models to ensure unbiased and fair selection procedures when valid tests with significantly different means for different demographic groups are used according to Huysamen (1995:5).

Essentially the demand for the admission of more applicants from underrepresented groups entails a call for assigning higher utilities to the correct acceptances and incorrect acceptances of applicants from these groups than to those from other groups.

Usually a combination of predictors, which may include matriculation performance and biographical variables, is developed in an effort to increase the multiple correlation with criterion performance. All models require that the variable or combination of variables that have the maximum correlation with the criterion for a particular group be used with that group and that these variables or combinations of variables may be different for various groups.

4.3 Swedish formula

4.3.1 Introduction

Several tertiary institutions have introduced an admission rating system, known as the Swedish formula, in which the symbols obtained in the matric examination, are weighted according to Behr (1985:107) and Phala (1992:73).

Fourie (1989:1) stipulates that matric symbols should be interpreted in an effective and simplistic manner in order to predict academic success and therefore the Swedish formula, also referred to as the M-mark, was developed.

4.3.2 Technikon Pretoria

Technikon Pretoria uses the Swedish formula and weights are additionally allocated to specific biographical information as well as positions of leadership. The formula allocates different weights for different matric subjects, see Tables 4.1, 4.2 and 4.3.

Elements of the Swedish formula for Human Resources Management students currently being used at Technikon Pretoria (1993:1) are reflected in Tables 4.1, 4.2 and 4.3.

TABLE 4.1: CONVERSION TABLE 1 FOR THE SWEDISH FORMULA - TECHNIKON PRETORIA.

MATRIC SUBJECTS	WEIGHT	
	Higher Grade	Standard Grade
Mathematics	15	10
Accountancy Business Economics Economics	12	6
Afrikaans English Mercantile Law Biology	10	5
Other	8	4

TABLE 4.2: CONVERSION TABLE 2 FOR THE SWEDISH FORMULA - TECHNIKON PRETORIA.

MATRIC SYMBOL	WEIGHT
A	5
B	4
C	3
D	2
E	1

TABLE 4.3: CONVERSION TABLE 3 FOR THE SWEDISH FORMULA - TECHNIKON PRETORIA.

VARIABLE	WEIGHT
Chairperson SportS captain Editor Army officer Junior Counsellor Head girl/boy Vice head boy/girl	10*
Library leader Leader Vice chairperson Vice head girl/boy Class captain Junior city counsellor Other leadership positions Cultural involvement Sports achievements Previous studies	5*
Previous study subjects passed	2

* All items added up to a maximum of 15 marks

Students with a total score of 100 or more are unconditionally accepted.

4.3.3 Natal University

Natal University introduced the Swedish formula in 1984 according to Behr (1985:108). The maximum mark is 48 and applicants with a mark of 32 and higher are unconditionally accepted. Selection is done according to the ranking order-method until the quota has been reached according to Jacobs (1996:3).

TABLE 4.4: CONVERSION TABLE FOR THE SWEDISH FORMULA – NATAL UNIVERSITY.

MATRIC SYMBOL	WEIGHT	
	Higher grade	Standard grade
A	8	5
B	7	4
C	6	3
D	5	2
E	4	1
Lower than E	3	0

4.3.4 RAU (Rand Afrikaans University)

Table 4.5 reflects the application of the Swedish formula at RAU and research conducted by Zietsman and Gering (1985:185) concludes that the Swedish formula is a good predictor of the first-year subjects, physics and chemistry. Fourie (1989:2) who adapted the Swedish formula refers to it as the M-mark. Fourie (1989:2) concludes that all first-year students with a M-mark of nine or above are accepted.

Basson (1981:18) on the other hand mentions that an adapted Swedish formula specifically for the selection of nursing students has been found to be valid.

TABLE 4.5: CONVERSION TABLE FOR THE SWEDISH FORMULA RAND AFRIKAANS UNIVERSITY.

MATRIC SYMBOL	WEIGHT	
	Higher grade	Standard grade
A	5	4
B	4	3
C	3	2
D	2	1
E	1	0
Lower than E	0	0

4.3.5 University of the Witwatersrand

Table 4.6 reflects the Swedish formula used by the University of the Witwatersrand. Different faculties use variations of the Swedish formula according to Behr (1985:108). The Swedish formula is used in the Faculties of Arts, Medicine and Science (Jacobs 1996:31). Weights are allocated to six matric subjects and the numerical value for Mathematics, Science, Biology and Geography are doubled. Students with a mark of 42 and higher are accepted for a three-year course; those with a mark between 38-41 are accepted but have to distribute their subjects over a period of four years; those with a mark between 33 and 37 are only accepted pending a recommendation from their school principals, while those with a mark of 33 and lower are not accepted according to Jacobs (1996:31).

TABLE 4.6: CONVERSION TABLE FOR THE SWEDISH FORMULA – UNIVERSITY OF WITWATERSRAND.

MATRIC SYMBOLS	WEIGHT	
	Higher grade	Standard grade
A	8	6
B	7	5
C	6	4
D	5	3
E	4	2
Lower than E	3	1

4.3.6 University of Durban–Westville

Table 4.7 reflects the Swedish formula used by the University of Durban-Westville. Different cut-off points are used for academic programmes. Behr (1985:109) found that at least 72% of success in first-year studies was attributable to background knowledge gained at school.

TABLE 4.7: CONVERSION TABLE FOR THE SWEDISH FORMULA – UNIVERSITY OF DURBAN-WESTVILLE.

MATRIC SYMBOLS	WEIGHT	
	Higher grade	Standard grade
A	8	6
B	7	5
C	6	4
D	5	3
E	4	2
F	2	1

4.4 Conclusion

Huysamen (1996:8) emphasises that it would be unfair to apply matric results or use results of aptitude tests for those applicants who had inferior schooling as well as for those of who had privileged schooling. This is confirmed by Zietsman and Gering (1985:3), Jacobson (1986:16), Taylor and Radford (1986:80), Mitchell en Fridjhon (1987:555), Jooste (1988:60), Monteith (1988:23), Malan (1989:198), Gourley (1992:71), Bokhorst et al (1992:59), Louw (1997:2), Miller (1992:98), Kriel (1997:15), Kotze et al (1996:45), Rademeyer and Schepers (1998:33), Huysamen (1999:132), Huysamen and Raubenheimer (1999:171), Huysamen (2000:147) as well as Mpho (2000:20).

Koen (1980) as mentioned by van der Vyfer (1984:17) states that school achievement and school subjects should not carry the most weight when selecting students for admission to Technikons.

Under the previous government, each population group had its own Department of Education which followed its own curriculum. White schools had one teacher for about 13 pupils as opposed to 32 at black schools. Although the number of adequately qualified teachers in white schools was low (especially in mathematics and science), there were almost none in black schools. Tertiary institutions were blissfully unaware of these differences, and of the effect it would have on tertiary education, until the wave of inadequately trained black students hit them in January 1996.

Tertiary education, however demands specific acquired skills from applicants such as a basic understanding of functional language, especially English, (Barnard, 1992:5) and (Kilfoil, 1999:46). Whether it is the responsibility of tertiary education to re-train applicants of inferior school training or not is debatable. Du Plessis (1992:6) clearly states that it is not the duty of tertiary education to re-train the products of inferior schooling.

However, Huysamen (2000:146) opines that tertiary institutions should embark on presenting bridging courses to cater for historically disadvantaged students who have had inferior high school education.

If tertiary education is perceived as the right of every citizen then tertiary institutions have to re-train, but in reality, not every citizen has the potential to acquire a tertiary education. Samuelson (1991:50) and Du Plessis (1992:5) confirm this. Tertiary education is a privilege which is not accessible to everyone according to Smit (1992:1) and Grobbelaar (1992:5).

The greatest challenge is to select those applicants that have the ability, regardless of their deprived backgrounds and school training for admission. Only then can re-training be done successfully.

The criteria for establishing the validity of new measures ought really not to be grades at school, but 'grades for life' in the broadest theoretical and practical sense.

Shochet (1986) as cited in Bokhorst et al (1992:60) and Botha and Cilliers (1999:144) states that scholastic performance usually provides little information on the intellectual potential and aptitudes of especially black applicants and their ability to succeed in tertiary studies. It therefore becomes clear that it is paramount that additional information on tertiary applicants should be obtained.

Kilfoil (1999:47), Botha and Cilliers (1999:144) and van der Walt (2000:2) confirm the unreliability of school results and stress that assessment of tertiary applicants is becoming increasingly important.

The National Commission on Higher Education (NCHE) recommends that additional selection criteria in addition to the Further Education Certificate (FEC) be implemented according to Louw et al (1998:149).

Kotze et al (1996:46) and Barnard (1992:5) suggest that the following components be measured to determine whether students do have the necessary learning and developmental potential to complete their studies successfully:

- Language proficiency in the preferred language of instruction;
- Learning potential; and
- Other cognitive aspects.