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SELECTION OF OCCUPATIONAL THERAPY STUDENTS FOR THE BSc OT COURSE AT THE UNIVERSITY OF THE WITWATERSRAND

PATRICIA ANN DE WITT

A dissertation submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, for the degree of Master of Science in Occupational Therapy.

Johannesburg 1997

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ABSTRACT

The purpose of this study was to determine if any of the criteria used for admission to the BSc Occupational Therapy (OT) Course offered by the University of the Witwatersrand, could differentiate between those students who passed and failed.

236 students admitted to the BSc OT course between 1982 and 1987 were divided into 4 groups: those who passed all courses on first attempt; those who failed one or more courses on first attempt but had completed or would complete the course; those who failed one or more courses on first attempt and left; those who passed all courses and left. An analysis of variance was then carried out on each of the 4 groups for the following selection variables

*	Pre-admission Interview	non-academic parameters
*	Biographical questionnaire	
*	Academic rating	
*	Matriculation aggregate	academic parameters
*	Matriculation mathematics	
*	Matriculation biology	
*	Matriculation physical science	
*	First language	

All of the above variables, except the Biographical Questionnaire, were found to distinguish significantly between the 4 groups ($p \leq 0.5$), and therefore had the potential to predict success in this course.

DECLARATION

I declare that this dissertation, except for the statistical analysis, is my own unaided work.

The statistical analysis of data was carried out by Dr Bekker of the Institute for Biostatistics of the S.A. Medical Research Council.

This dissertation is being submitted for the degree of Master of Science in Occupational Therapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

PATRICIA ANN DE WITT

9th DAY OF DECEMBER 1997

Ethics Certificate No: 4.3.90.

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CHAPTER 1: INTRODUCTION

1.1 SELECTION OF OCCUPATIONAL THERAPY STUDENTS

Career choice is an extremely difficult milestone in the life of a young adult (Kielhofner 1985). It is a very personal decision which is reflective of the individual's motivation, perceived ability and knowledge of the career (Brollier 1970) in which they anticipate both satisfaction and success (Lund 1970). The decision to pursue a career in Occupational Therapy may be sound for some candidates, while for others, it may be based on misconceptions, ill identified needs and/or pressure from family and peers resulting in the individuals pursuing a career to which they are "ill fitted" (Topetzes 1957) academically or in terms of the skills required.

The purpose of the selection process is to address this problem, by choosing from the pool of candidates *"the individual who will succeed academically and subsequently perform well as a professional"* (Posthuma and Sommerfreund 1985: 441).

Selection of appropriate students has been of ongoing interest to the occupational therapy profession, since it is through appropriate selection and training that the profession renews and builds its manpower resources. As early as 1951, West proposed that American Occupational Therapy Educational programmes should develop student selection instruments that could predict suitable candidates for training.

Over the years a number of alternative selection criteria and methods have been proposed, researched and reported, with disappointing results. To date no reliable method of selecting students using valid criteria that predict success, has been found. According to Clark and White (1983) the selection process is negatively affected by the lack of agreement on what constitutes an ideal Occupational Therapist as well as the profession's inability to determine the most valid criteria on which to base the selection process (Posthuma and Sommerfreund 1985). This has resulted in universities offering occupational therapy education, both nationally and internationally, all using different criteria for admission and having different selection procedures and policies (Sabari 1985).

1.2 STATEMENT OF THE PROBLEM

The University of the Witwatersrand has a well established procedure which is used to select students into the BSc Occupational Therapy course. This selection procedure is different to that of the other seven universities that offer Occupational Therapy courses in South Africa.

The University of the Witwatersrand uses two measures to guide selection of Occupational Therapy students: the academic criteria and the non-academic criteria. The exact nature of these two criteria differs to those used by the other universities. In addition there is no evidence as to the reliability of these two criteria, to discriminate between those students who will succeed in the BSc Occupational Therapy course and those who will fail.

Therefore, the purpose of this study was to investigate the correlation between the selection criteria used for admission and success and failure of students in the Occupational Therapy undergraduate course offered by the University of the Witwatersrand.

1.3 DEFINITION OF TERMS

Throughout this text:

Student refers to the person who is studying and represents one individual in the sample.

Course refers to the BSc Occupational Therapy course, that is being studied.

Subject refers to the individual subjects within the BSc Occupational Therapy Course that the student is studying.

CHAPTER 2: REVIEW OF THE LITERATURE

2.1 INTRODUCTION

During the past twenty years there has been a marked increase in those interested in pursuing a career in occupational therapy. This increase in interest has resulted in more applications being received than there are places available for training (Johnson et al 1974, Blaisdell and Gordon 1979, Lucci and Brockway 1980, Coombes and Bennet 1983 and Brindle 1987). This trend has caused many educationalists to take stock of the selection criteria and the procedure used to admit students and review the validity, reliability and cost effectiveness of these criteria. Although many authors have studied various selection criteria, only Coombes and Bennet have considered the selection process as a whole.

2.2 THE SELECTION PROCESS

Coombes and Bennet (1983) reported that occupational therapy training centres have two approaches to student selection:

* The first approach attempts *"to deal with problems encountered with training, or perceived in the profession which they believe can be redressed by better selection" (p29)*
* The second approach views *"selection as being an integral part of the whole manpower development process" (p.30)*, resulting in a well defined educational policy, aims and objectives which define the training programme.

Blaisdell and Gordon (1979), who appear to have followed the first approach, are the only authors who have proposed a model for the Selection of Occupational Therapy students. Their model uses past academic performance as the criterion for admission.

The proposed model consists of an **objective stage** which analyses pre-college variables to divide the applicant pool into 3 groups: those who would be successful in the course (Group 1), those who would not be successful (Group 2) and those whose success was inconclusive (Group 3). Applicants that fell into group 2 were rejected. Those applicants in groups 1 and 3 went on to the **subjective stage** where they completed a pre-admission interview and a questionnaire. Applicants in Group 1 and 3 were accepted or rejected on the results attained in the subjective stage of the selection process. A diagrammatic representation of this model can be found in Figure 1.

Blaisdell and Gordon's (1979) work focused on determining a procedure to be used in the objective stage. They studied 33 independent pre-college variables (see Table 1) in a sample of 126 students who had been admitted to Elizabethtown College between 1972 and 1977. Table 1 lists the independent variables together with the measurement used to evaluate them. The sample was divided into Group Si which consisted of 99 subjects who had completed or would complete the OT course and Group Fi which was made up of 27 subjects who had withdrawn from the course. Using discriminant analysis they isolated 7 criteria as being different between groups Si and Fi at the time of admission. Students in the Si group had a higher interest in physical, life and social sciences and studied Anthropology more frequently than the Fi group. On the other hand the Fi group had a higher interest in mathematics and achieved a higher overall average than did the Si

group. On the Survey of Interpersonal Values (Gordon 1960) the Si group scored significantly higher on the "support" component ($p=0.034$) while the Fi group scored higher on the "conformity" component.

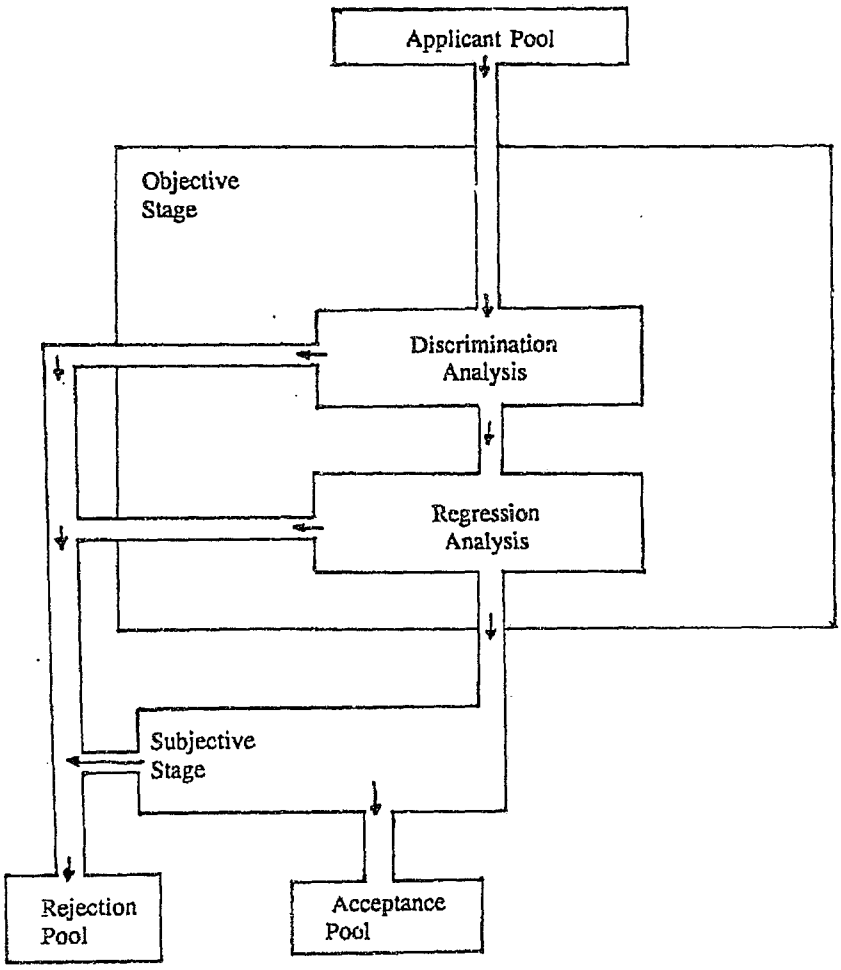


Figure 1 **Blaisdell and Gordon (1979) Proposed Model for Selecting Occupational Therapy Students.**

Table 1 **33 Variables analysed during the objective stage of Blaisdell and Gordon's (1979) Model for Selecting Occupational Therapy Students.**

1. Mathematics 2. Verbal 3. Rank 4. Public High School	Scholastic Achievement test - maths score Scholastic Achievement test - verbal score High School Rank (percentile) . Type of high school student attended (public/ private)
5. English 6. Mathematics 7. History 8. Language 9. Social Science 10. Physical Science	Ranking of high school subjects according to interest. 1 = highest interest 6 = lowest interest
11. Chemistry 12. Physics 13. Biology 14. Psychology 15. Sociology 16. Anthropology	Self reported grades at high school
17. Homework	Average number of hours spent doing homework during school year
18. Work	Average number of hours spent working full-time or part-time during school years
19. Decision Years	Number of years before applying to do O.T. course
20. Age	Age at entering O.T. programme
21. Siblings	Number of children, including self in family unit
22. Family Rank	1 = eldest, highest number of younger children
23. Health Profession	Number of family members in health care
24. Leadership	Number of major positions of leadership held in high school
25. Activity	Number of years of participation in high school
26. Support 27. Conformity 28. Recognition 29. Independence 30. Benevolence 31. Leadership	Survey of interpersonal values was used to obtain a:- - support score - conformity score - recognition score - independence score - benevolence score - leadership score
32. Sex 33. Percentage of graduates	Male/Female percentage of high school peers going to university

A regression study was undertaken on the first sixteen variables (see Table 1) to establish cut off points to divide the sample into 3 probable groups: those who would probably pass (Group 1), those who would probably not pass (Group 2) and those where passing was not conclusive (Group 3). The results of 77 students, drawn from both the Si and Fi groups were used to check the reliability of the model. 90% of the Si group were correctly classified, 0% were incorrectly classified and 10% could not be conclusively grouped and were therefore placed in group 3. In the Fi group 63% were correctly classified, 8% were incorrectly classified and the results of 12% were inconclusive. This result indicates that the cut off points that were established were better at predicting the results of the Si group but not as useful at predicting the results of the Fi group.

Although this model reflects the individual nature of the Elizabethtown Occupational Therapy College, the principles could be applied to any setting. Blaisdell and Gordon's Model of Student Selection closely resembles the procedure used at the University of the Witwatersrand which is described in Chapter 3.

Coombes and Bennet (1983) have a different attitude to student selection. They advocate a total manpower strategy, where student selection is one component of a strategy for Occupational Therapy Education (see Figure 2). They emphasise that recruitment should be an integral part of the selection and aim to:-

* *"create a population of students, with sufficient diversity of backgrounds appropriate to the defined focus of the occupational therapist's role in*

providing opportunities for patients to cope with life roles at home, work and leisure.

* *increase the probability that students were well suited to meet the objectives of the curriculum and fulfil the roles and functions of an occupational therapist.*

* *ensure that the selected students had an awareness of the training and practice requirements of the profession" (p32).*

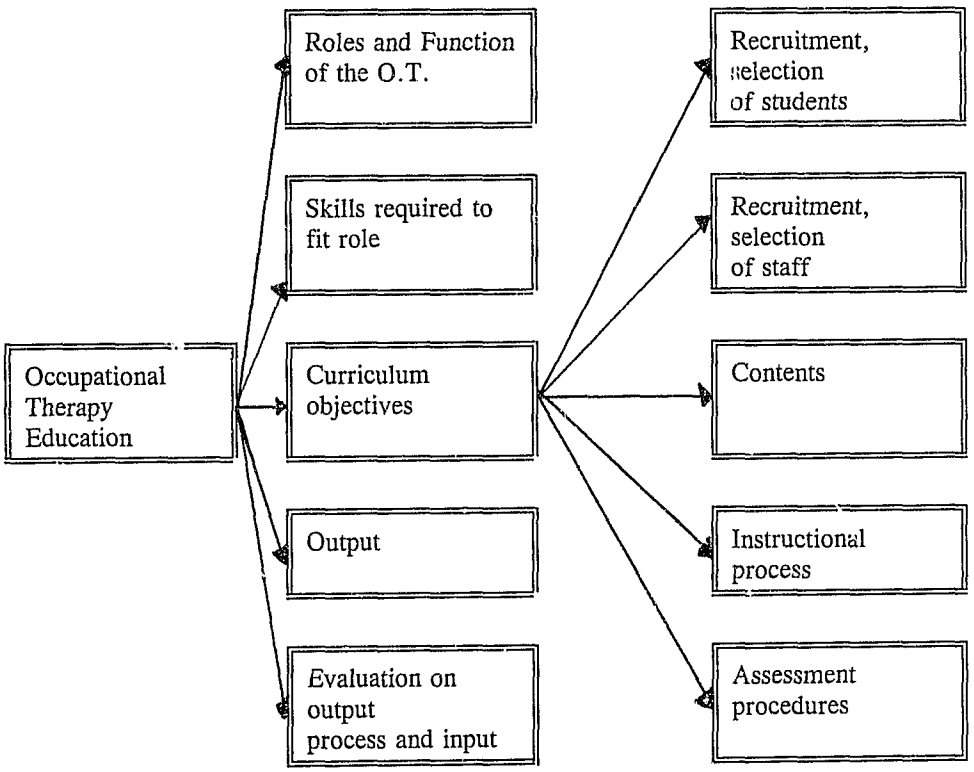


Figure 2 **Relationship of Factors Considered in the Recruitment and Selection of Students for the Degree of O.T. at Cumberland College of Health Sciences.**

The recruitment procedure was seen as an "induction process" during which potential candidates were given sufficient information and understanding of the profession to select themselves in or out of the programme. The only formal selection procedure was a pre-admission interview, which was undertaken by Occupational Therapy staff who were specifically trained in simulated interviews and who agreed on: *"qualities believed to be important for performing well in training and achieving job satisfaction in occupational therapy" (p33)*. The qualities unfortunately were not noted.

Two different approaches to the elimination of candidates from the selection process have been proposed. Blaisdell and Gordon (1979) suggested that candidates be eliminated on the basis of identified pre-admission criteria, while Coombes and Bennet (1983) suggested that candidates eliminate themselves on the basis of knowledge ascertained during the recruitment procedure. All authors used the pre-admission interview to finalise a candidate's acceptability for their Occupational Therapy course.

2.3 SELECTION PROCEDURES

2.3.1 INTRODUCTION

Johnson et al (1974) noted that one of the difficulties facing those responsible for selection of candidates for Occupational Therapy courses is that insufficient attention has been given to the development of policies, procedures and criteria for selection.

The only guidelines that have been published state that the *"criteria for selection and retention of students should be pre-defined, non-discriminatory in terms of race, creed, colour, sex or natural origin and should allow interdisciplinary career mobility"* (AOTA, 1973, p118).

As a result many different procedures have been used in the student selection process and include:-

Pre-admission interview

Previous academic performance

Biographical questionnaires

Personality ratings

Attitude and interest inventories

Learning styles

Special inventories

The selection procedures that were investigated in this current study include the pre-admission interview, previous academic performance and the biographical questionnaire, so this literature review will focus mainly on literature pertinent to these 3 procedures. However findings on other selection procedures that might be considered in a selection process in the future, will also be included.

2.3.2 THE PRE-ADMISSION INTERVIEW

2.3.2.1 Use of the interview in student selection

Introduction

The pre-admission interview is used to obtain and clarify information (Pinder 1985) about a candidate in order to decide whether he has *"the personality characteristics, academic ability and motivation to become an occupational therapist"* (Johnson et al 1974: 597).

The interview is the most widely used selection procedure (Johnson et al 1974), in recognition of the importance of interpersonal skills in the health professions (Caughey 1969, Vargo et al 1986).

In spite of their being widely used there is no consistency in the literature about the format of pre-admission interviews. There are varying reports on how long an interview should last (Posthuma and Sommerfreund 1985, Mitchell et al 1987a), and the structure the interview should follow (Lucci 1974b, Mann 1979, Posthuma and Sommerfreund 1985).

The advantages and disadvantages of using this selection tool are difficult to determine since the research is contradictory. Two main themes emerge from the research with respect to the use of this selection procedure: what attributes can be evaluated and how reliable are the scores that candidates are given.

■ Attributes that can be evaluated within the interview

Chaisson's (1976) research indicated that interviewers were not always clear about what was being evaluated in the pre-admission interview. Barkley (1976), Coombes and Bennet (1993) however suggested that outstanding practitioners and specially trained interviewers were clear and able to identify attributes. Mann (1979) and Posthuma and Noh (1990) each proposed a list of attributes that could be measured within the interview. While self confidence and maturity appear common attributes, all the other attributes are different (see Table 2).

Table 2 **Attributes Rated in Pre-Admission Interviews.**

Mann (1979) : rated each item on a 7 point scale	Posthuma and Noh (1990) : rated each item on a 10 point scale
* Appearance * Earnestness about a career in occupational therapy * Voice, speech, verbal skills * Listening skills * Concern for others * Knowledge of occupational therapy as a profession * Self confidence, maturity * Poise, ability to handle stress * Attitude towards disabled * Personality, friendliness	* Maturity * Adaptability * Self confidence * Sensitivity * Initiative * Creativity * Leadership * Commitment * Social Awareness * Articulateness * Non judgemental * Problem solving

The reliability of interviewers' scores

Greenwald (1976), Mann (1979) and Concha (1987) found poor inter-rater reliability between interviewers and high levels of subjectivity in the scoring. Posthuma and Sommerfreund (1985) while accepting poor inter-rater reliability, felt this could be eliminated by having 2 interviewers, who each scored the candidate and where there was a discrepancy of 10 or more points a second interview was granted. Mitchell et al (1987a) found that evaluations obtained through the interview were surprisingly objective and interviewers were consistently able to distinguish between those applicants who were thought to be desirable and those who were not.

While the pre-admission interview appears to be the most widely used selection tool, there is no agreement about how it should be used nor its validity or reliability. There is however agreement that it is expensive in terms of time (Posthuma and Noh 1990) and effort (Vargo et al 1986) and if it is to be cost effective its value and use within the selection process should be determined.

2.3.2.2 The predictive value of the pre-admission interview

Introduction

A number of workers have investigated the predictive value of the pre-admission interview to determine success or failure of a candidate in an Occupational Therapy course. The research has only focused on using the pre-admission interview to select in "appropriate"

candidates into a course, rather than **select out** those considered to be unsuitable (Posthuma and Noh 1990). Studies have been undertaken to determine the value of the pre-admission interview to predict attrition, academic and clinical performance. While no study has conclusively determined the predictive value of the pre-admission interview, some researchers have found its inclusion in the selection proves to be advantageous while others have not.

Advantages

Mitchell and Haupt (1990) in their study of one thousand and twenty six medical students found that the interview scores of the 67 students who voluntarily withdrew were significantly lower than the 232 students who failed and repeated. They concluded that the pre-admission interview may be useful to exclude those candidates who appeared to have inadequate commitment to their course. Unfortunately the authors did not propose a cut-off score.

Posthuma and Sommerfreund (1985) found that the pre-admission interview could be a valuable predictor of academic success when used for candidates with only secondary school experience. Their study identified a significant correlation between ratings in the interview and problem solving, adaptability, commitment and academic performance in the OT1 course.

Posthuma and Noh (1990) proposed that the pre-admission interview may be a useful predictor of clinical performance since students admitted on the basis of high interview

scores achieved significantly higher results ($p > 0.038$), on their first and final period of clinical practice as well as greater overall improvement, than students admitted on the basis of previous academic achievement.

All authors who found the pre-admission interview to be advantageous suggested that some desirable characteristic(s) is being evaluated using this selection tool although the exact nature of this characteristic is unclear (Mitchell, Mitchell and McGregor 1987a, Posthuma and Noh 1990).

Disadvantages

A number of workers found the pre-admission interview to have few prediction benefits. Brindle (1987) in her eight year study on student selection methods concluded that the interview could not conclusively be used to predict attrition nor academic performance. This last finding was supported by the work of Lucci (1974b) and Vargo et al (1986), although the results of this last study may have been biased by limiting their sample to individuals who had passed the Occupational Therapy course. In addition Posthuma and Sommerfreund (1985) and Vargo et al (1986) all found a low correlation between the pre-admission interview and performance in clinical practice, suggesting that the pre-admission interview could not reliably determine clinical ability.

Conclusion

Research on the use of the pre-admission interview is contradictory. While there is no uniformity in the format of the pre-admission interview, there is uncertainty about what can be evaluated and how interviewers ascribe points, it remains the most widely used selection procedure. The predictive value of the pre-admission interview is also questionable. Mitchell and Haupt (1990), Posthuma and Sommerfreund (1985) and Posthuma and Noh (1990) have suggested that the interview has predictive value and might exclude students who drop out due to inadequate commitment and that it may be useful with some candidates to predict academic and clinical performance, while Brindle (1989), Lucci (1974b) and Vargo et al (1986) have found it not reliable in predicting attrition, academic or clinical performance.

2.3.3 PREVIOUS ACADEMIC PERFORMANCE

2.3.3.1 Introduction

Most occupational therapy programmes require prospective students to submit transcripts of all academic work completed at the time of applying and prior to acceptance into a course (Lucci 1974b, Johnson et al 1974, Mann and Banasiak 1985, Posthuma and Sommerfreund 1985, Posthuma and Noh 1990, Katz and Mosey 1980). Johnson et al (1974) reported that previous academic performance was the second most frequent method used to select occupational therapy students.

However, because of the considerable difference in the structuring of secondary and tertiary education in the countries generating occupational therapy literature, the information was not comparable from one country to another and may have very little relevance to our education system in South Africa.

According to Mitchell and Haupt (1990), South African students are admitted to the medical school of the University of the Witwatersrand with four types of academic background:-

i) current matriculants who have just completed the matriculation examinations.

ii) past matriculants who have some post matriculation experience e.g. national service, or working before admission.

iii) applicants with a qualification issued by another country (foreign applicants).

iv) applicants who have had one or more years of university education at the time of admission.

While the international literature describes students being admitted to occupational therapy courses with similar backgrounds to those described above, students are also admitted to occupational therapy programmes with a certified Occupational Therapy Assistant Education (Lucci 1974a) and on grounds of mature age (Mocellin and Bryce 1988).

At the time of this current study applicants to the BSc OT course graduated from the South African secondary school system with matriculations offered by 7 different matriculation authorities viz Transvaal Senior Certificate, Natal Senior Certificate, Joint Matriculation Board, Cape Senior Certificate, Department of Education and Training, Coloured and Indian Senior Certificate.

Mitchell et al (1987b) undertook a study to determined whether all these matriculation examinations were of equal standard. They found that students who wrote the matriculation examinations of Natal, Cape and Indian Senior Certificates, Joint Matriculation Board and Department of Education and Training Examination all scored significantly higher marks in the first year at university, than did candidates who wrote the Transvaal Senior Certificate. They deduced therefore, that the Transvaal Senior Certificate matriculation results consistently overrates the candidate's ability to perform at university (Mitchell and Fridjhon 1982). This inequality advantaged students who wrote the Transvaal Senior Certificate in the selection process, in relation to candidates who wrote the examinations of the other examining authorities.

The above study also revealed that between 1980-1983 the mean academic rating, which was based on the matriculation aggregate (see Chapter 3), rose from 68.3 to 70.00 for medical students admitted to the Medical Faculty of the University of the Witwatersrand (Mitchell and Haupt 1990). No corresponding figures are available for occupational therapy students.

2.3.3.2 The predictive value of previous academic performance

Introduction

McBride (1980) stated that admission to any programme for which there are a limited number of places, demands that the successful applicants exceed the minimal level of academic competence. In 1980 an academic minimum, calculated from matriculation marks, was introduced into the selection process for medical students at the University of the Witwatersrand (Mitchell 1989). An academic minimum for selecting Occupational Therapy students was not introduced at this time as occupational therapy students were not included in the sample of the research undertaken by Mitchell (1989).

The reliability of this academic minimum is dependant on all secondary educational authorities examining at the same standard and all schools' teaching policy and practice being reasonably equal. Variations in academic achievement by different secondary education authorities and schools has been reported by Johnson et al (1974), Posthuma and Sommerfreund (1985), Mitchell et al (1987b) and Mitchell and Haupt (1988).

A number of authors have investigated the value of previous academic performance to predict attrition rates, academic performance within an occupational therapy course and performance in clinical practice. It appears that previous academic performance is advantageous in predicting academic success and of less value in predicting attrition and clinical performance.

Advantages of using previous academic performance in the selection process

Katz and Mosey (1980), Vargo et al (1986) and Brindle (1987) all found a positive correlation between previous academic scores and academic performance within occupational therapy courses. This positive correlation was significantly better than that of the pre-admission interview score and clinical performance within the occupational therapy courses (Vargo et al 1986 and Brindle 1987). However Brindle (1987) noted that while students admitted on the basis of previous academic performance scored significantly higher academic marks than those admitted on the basis of the interview ($p = < 0.05$) the difference in actual marks was so small as not to be practically useful. Brindle assumed the reason for this similarity in actual marks was due to all students having met a predetermined minimal academic level before selection.

Mitchell (1989) reported that the academic minimum mark used in the selection of medical students differentiates between those students who pass and those who fail. Mitchell reported that this academic minimum was attained by comparing marks achieved in the matriculation examinations to those achieved in the first year of university education.

Mitchell (1989) also found that the matriculation aggregate was a good indicator of success or failure, but the combined score of matriculation mathematics and physical science was in fact a better predictor. Students whose combined scores for these two subjects was less than 135, failed two or three times more frequently than those whose scores exceeded this level. However, Mitchell (1989) stated that the value of the

matriculation mark to predict success or failure declined with increasing years of study (Mitchell, Fridjhon and Haupt 1997).

As students are admitted to Occupational Therapy courses either straight from secondary school or with some university experience, Posthuma and Noh's (1990) finding that there is no significant difference in academic performance within the occupational therapy course between students admitted straight from high school and those with university experience is interesting. Posthuma and Noh (1990) did however find that students admitted from a university, selected on the basis of previous academic performance, scored significantly better during the first period of clinical practice. She attributes this to experience of university education giving them a degree of self confidence. However, this advantage was no longer evident in the scores for the final period of clinical practice.

Brindle (1987) and Posthuma and Noh (1990) found that previous academic performance did not predict success in clinical practice as no significant difference was evident between the final year clinical performance scores of students admitted on the basis of previous academic performance when compared to students admitted on the basis of high pre-admission interview scores.

However, Katz and Mosey (1980) and Vargo et al (1986) felt confident that previous academic performance was a better predictor of clinical competence than the pre-admission interview. Mosey and Katz (1980) reported that this varied with the field of practice and a significant correlation between previous academic performance and clinical

practice was found in the mental health field of practice but a non-significant correlation in the physical field.

- **Use of previous academic performance that was not helpful in the selection process**

Bridle (1987) found that the attrition average of students selected on the basis of their previous academic performance, was not statistically different from those admitted on the basis of the interview and those randomly selected.

- **Conclusion**

Finally, Mitchell (1989) warned that, on the whole, the relationship between previous academic marks and university performance is quite weak and that the correlation decreases with increasing years of study. He stated that matriculation skills account for only 20% of first year performance and only 4% of sixth year performance, although it is not clear how this was calculated. Also of the top one hundred medical students in first year, only fifty were the top matriculants and this decreased to twenty-five in final year. In view of this weak relationship he suggested that: *"the best we can hope for is a relationship between matriculation performance and the risk of failure" (p26).*

2.3.4 BIOGRAPHICAL QUESTIONNAIRES

Although biographical questionnaires have been cited as one of the procedures for selecting students (see 2.3.1), they have seldom been the focus of scientific investigation. While many researchers have collected biographical data about candidates for occupational therapy courses, only Bailey (1968) attempted to analyse this data. He compared the biographical data of occupational therapy students to those of physiotherapy, medical technology, education and nursing students at the University of Florida. While the results of this study proved more relevant to recruitment than selection, it highlighted the belief that *"past performances of a person are good indices of his future behaviour"* (Bailey 1968: p259).

This biographical information may therefore contribute positively to the selection process of occupational therapy students, when no absolute scientifically proven criteria are available. However, when each criterion is taken individually, it probably has little predictive value, but collectively they might be useful.

2.3.5 OTHER SELECTION PROCEDURES THAT HAVE BEEN STUDIED WITH RESPECT TO OCCUPATIONAL THERAPY STUDENTS

2.3.5.1 Personality ratings

Introduction

In the first edition of the American Journal of Occupational Therapy in 1947 Otto reported that:-

> *"when considering an applicant for training the director of the occupational therapy course is concerned with obtaining information on the future student's health, character, academic ability, manual dexterity, personality and interests. Information is assessed quite easily on the first four - medical examination character references, high school records and tests of manual dexterity. It is when it comes to appraise the personality and interests of the applicant that we seek some means of pinning down those particular aspects that contribute to occupational therapy education."* (p115).

From the review of the literature it would seem that the solution of this problem is no closer in 1997 than it was in 1947, despite Vocational Development researchers being in agreement that professional groups have a set of distinguishable personality traits.

Vocational Development researchers also reported that various occupations provide different kinds of gratification or satisfaction and require different abilities, identification, values and attitudes (Holland 1963, Brollier 1970, Westbrook et al 1976). However, whether these differences in personality traits can be identified before entering an occupational therapy training programme or whether they are the product of learning

through professional socialisation is uncertain (MacDonald 1976, Sabari 1985) as studies have produced conflicting results.

Studies by Clark and White (1983), Brown (1989) and Donohue (1995) suggested that some personality traits, measured at the commencement of an occupational therapy programme, were significantly enhanced by the educational programme, while others remained static or deteriorated.

Clark and White (1983) found no significant differences in the personality traits of 98 students measured using the deference, affiliation, intraception and endurance scales of the Edwards Personal Preference Schedule, between the 4 years of study in a 4 year OT course. However, a significant difference at the 0.05 level was found in personality traits measured on the achievement, order, dominance and abasement (humiliation) scales demonstrating a marked linear relationship from first year to the final year of study. A most interesting finding in this study was the negative linear relationship on the nurturance scale (need to assist those less fortunate than themselves), considering that this is one of the reasons most frequently stated for entering the profession. See Figure 3.

Brown's (1989) results from his investigation into the characteristics of OT students and clinicians supported Clark and White's finding that nurturance deteriorated over the four years of training. Brown (1989) suggested that this was due to "burn-out" caused by stress of the occupational therapy students holding roles of both student and clinician. However, contradictory to the findings of Clark and White (1983), Brown (1989) found that no personality characteristics appeared to be enhanced by occupational therapy training.

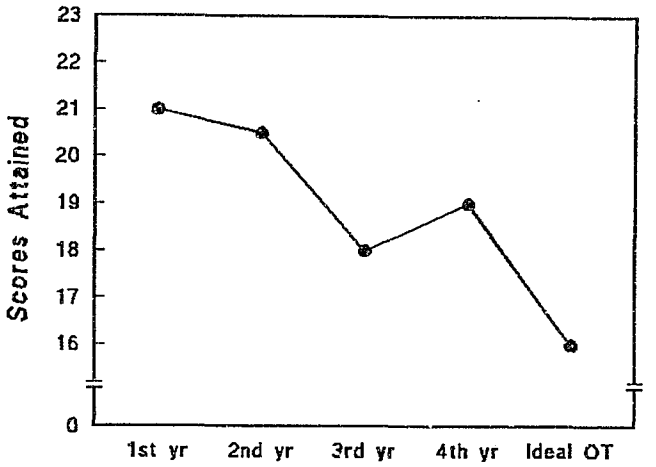


Figure 3 Scores Attained on the Nurturance Scales by Occupational Therapy Students and Ideal Occupational Therapists (Clark and White 1983).

Personality profile for occupational therapists

Hendrikson (1962) made the first attempt to study the personality profile of occupational therapists, in order to be better able to evaluate who should be accepted or rejected from the application pool in the selection process.

She was concerned with identifying the different behaviours required during the performance of occupational therapy and how these could be measured. She administered the Cattell's Sixteen Personality Factor Test (1946) to a small group of occupational

therapists working in the psychiatric field. The scores of each item were then compared to the United States population means.

She has been the only researcher that found that her sample differed significantly from the general population and concluded that psychiatric occupational therapists were: *"warm, friendly, intelligent, aggressive, tough, unpretentious, highly flexible and broadminded"* Hendrikson (1962)" (p130).

Subsequent studies by Brollier (1970), Clark and White (1983), Peacock and O'Shea (1984) and Brown (1989), using a variety of measuring instruments, each looked at slightly different components of personality, but all failed to identify personality characteristics that would identify occupational therapists as being significantly different from the general population.

Brollier (1970) attempted to identify the personality differences between physiotherapists, social workers and occupational therapists working in the physical and psychiatric fields of practice. The results failed to demonstrate significant differences between the three professional groups on the achievement (need to achieve tasks that require skill and effort), intraception (need to analyze behaviour of self and others) and nurturance (need to assist others less fortunate than self) scales of the Edwards Personal Preference Schedule.

However some differences were noted on the autonomy scale, which measures the need to be independent in thinking and actions; social workers and occupational therapists

working in the psychiatric field scored the highest. These two groups also scored higher on the dominance scale, while physiotherapists and occupational therapists working in the physical field scored higher on the deference scale, which looks at the need for interpersonal feedback and approval, and the order scale.

She suggested that the slight differences that were found may be a product of different "vocational concerns" rather than personality structure.

Researchers in an attempt to determine the personality structure of an "ideal occupational therapist" were not in agreement as to who represented the ideal. Brown (1989) based his ideal on the profile of 7 occupational therapists responsible for education of students while Peacock and O'Shea (1984) felt that the "ideal" should be based on the personality characteristics of the competent clinician.

Peacock and O'Shea (1984) aimed to determine the personality profile of occupational therapists by comparing personality characteristics and on the job performance of occupational therapists to those of the general population. They administered the Personality Research Form E, the same instrument used by Brown (1989), to 87 occupational therapists. In addition supervisors of these occupational therapists had to complete a job performance rating scale which was designed to give a global impression of work performance. The Personality Profile that was developed from their results can be found in Figure 4.

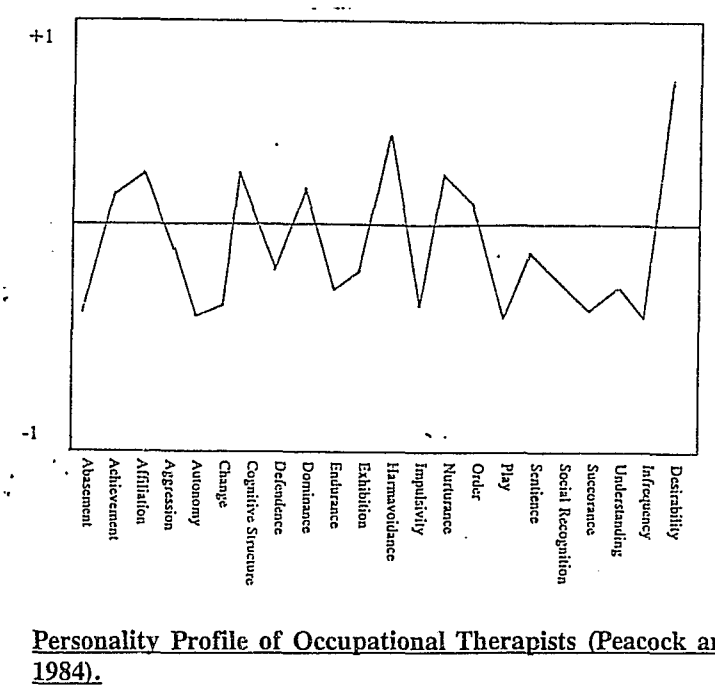


Figure 4 **Personality Profile of Occupational Therapists (Peacock and O'Shea 1984).**

Disappointingly this personality profile also failed to be statistically different to that of the general population, as was the case in Brollier's (1970) and Brown's (1989) studies.

Considering that career development theorists believed career choice to reflect on an individual's desire to implement their self concept, occupational therapy is attracting people from a wide variety of personality structures. Peacock and O'Shea (1984) stated the positive component of this was that: *"such diversity of need structures can create a healthy heterogeneous profession"* while the negative component was that *"people who enter the profession may not have a clear idea of what occupational therapy involves"* (p500).

Although no differences could be found between occupational therapists, the general population and other professional groups, some differences were found between occupational therapy students and other student groups.

Patterson et al (1970), instead of looking at personality test variables, tried to identify differences between occupational therapy students and other students, by studying characteristic behaviour shown towards others. He used Schultz's (1967) Fundamental Interpersonal Relations Orientation-Behaviour (FIRO-B) test as his instrument, which measures three dimensions of interpersonal behaviour - inclusion, control and affection. A sample of 1 054 students completed the FIRO-B test. The analysis found that occupational therapy students were most similar to the psychology students but were less inclined to exert control over others and demonstrated a higher desire for inclusion. When compared to the general student group, occupational therapists again had less desire to exert control over others and also made a greater effort to be friendly and close. Occupational therapy and teaching students were found to be most different. Occupational therapy students desired and expressed more behaviours designed to include them in the affairs of others, and again demonstrated less desire to control, and more behaviour designed to promote interaction with others on a close and intimate basis. Patterson et al (1970) speculated that these differences, may be related to professional perceptions.

Westbrook et al (1976) like Patterson et al (1970) examined the personality characteristics of students. They used the Edwards Personal Preference Schedule to examine five groups of Australian first year health science students; occupational therapy; physiotherapy; speech therapy; medical records administrators and nurses. The results of each student

group were compared to one another and then to the American Norms for tertiary students. They found that Australian Occupational Therapy students were: *"significantly more nurturant, autonomous, succorant and aggressive, more open to change, more interested in the opposite sex, while significantly less achieving, deferent, orderly and dominant than their American counterparts" (p129).*

Nordholm and Westbrook (1987) studied the changing attitudes of occupational therapy students towards self, between 1976 and 1986, using the Bem's Sex Role Inventory (1974). The researchers found that the 1986 students had a more positive self concept when compared to the 1976 group which was reflected in their being more *"self reliant, assertive, strong personalities, willing to take risks, make decision easily, self sufficient, willing to take a stand and act as a leader, more willing to defend their stand and more ambitious"* (p102).

These changes, in students who came from similar backgrounds, were ascribed to *"more liberated attitudes in society"* (P103).

Conclusion

Research done to date suggests that occupational therapists do not have a specific vocational personality profile, are no different from the general population and cannot be distinguished from other groups of health professionals on the basis of personality traits. The same applies to occupational therapy students. However it is important to note that some personal characteristics in Occupational Therapists have been reported to have

changed over time, as well as a difference being noted in the personality characteristics of students in different countries. It can be assumed that personality traits and values were influenced by professional socialisation and training, however results have been contradictory. Some researchers suggest that education programmes influence personality traits and values while other authors disagree with this.

2.3.3.2 Learning styles

Introduction

Although using learning styles has not yet been mooted as a selection criteria, Kolb (1984) suggested that *"many people in the same profession have similar learning styles and the individual may be influenced into selecting a profession that is consistent with his learning style"* (p127).

Understanding how occupational therapists are different to other professional groupings in terms of learning style may therefore assist in building up information to establish a *"profile of an occupational therapist"* which would in turn assist in selecting those candidates for Occupational Therapy courses.

Learning styles for occupational therapists

Two studies on the learning styles of occupational therapists have been reported in the literature. The first is by Rogers and Hill (1980) who looked at the learning preferences

of two consecutive classes of occupational therapy students at the University of California. The second was by Katz and Heimann (1991) who studied the variance between the learning styles of students and practitioners in five different health professions viz nursing, occupational therapy, physiotherapy, clinical psychology and social work.

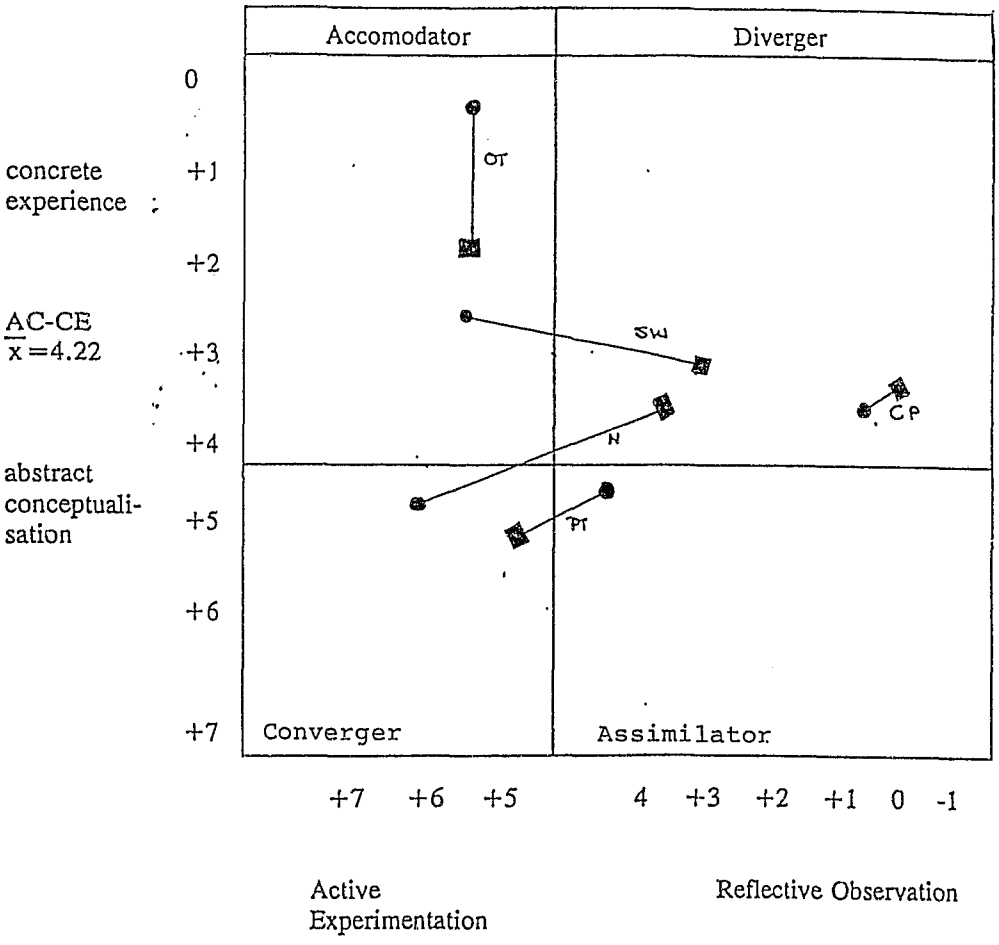
The study by Rogers and Hill (1980) found that occupational therapy students preferred teacher structured, concrete and interpersonal learning activities. Although there were some differences in the learning preferences between the students in the before and after course work testings, these were inconsistent and not statistically significant. These results are supported by Llorens and Adam (1978), Cahill and Madigan (1984) and Barris et al (1985).

Rezler and French (1975) also compared the learning styles of occupational therapy students to those of five other student groups viz Medical, Arts, Medical Dietetics, Medicine Laboratory Sciences, Medical Record Administration and Physiotherapy using the Learning Preference Inventory. They found that all groups preferred teacher structured learning experiences, dealing with concrete rather than abstract course content and practice orientated learning. This study did not contribute information on the differences between the groups.

The study by Katz and Heimann (1991) found that there were significant differences in learning styles between the five different groups of health professionals and students they studied (see Figure 5). These researchers found occupational therapists, both students and clinicians, to have an accommodator learning style (doing, risk taking, active concrete,

practical and intuitive). Social work and nursing students as well as both groups of clinical psychologists had a diverger learning style (imaginative brainstorming, innovative concrete and reflexive). Physiotherapy clinicians had an assimilator learning style (create theory, not practical, basic science, abstract and reflexive) while physiotherapy students and qualified nurses had a converger style (things orientated, abstract testing out, one correct answer, active experimentation).

From Figure 5 it can be seen that clinical psychology and occupational therapy are most similar to their clinicians, although the learning style of these two groups are different. Although differences between the clinicians and students of the other three groups were noted they were only significant at the $p<0.05$ level. Occupational therapy students differed significantly from the other student groups on the Abstract Conceptualisation scale, social work students on the Reflective Observational Scale; Nursing students on the two scales: Abstract Conceptualisation and Active Experimentation; while physiotherapy students differed on the Concrete Experience Scale. Results of comparisons of the practitioner groups showed the same trends as the students but were more extreme on each scale.



KEY: * **Students**
■ *Clinicians*
OT Occupational Therapists
SW Social Workers
CP Clinical psychologists
PT Physiotherapists
N Nurses

Figure 5 **Graphic Plotting of Average Learning Style for Students and Clinicians in Professional Groups (Katz and Heimann 1991).**

The predictive value of learning styles

The failure of research to identify the unique characteristics of the occupational therapist and the ongoing need to determine the factors that predict those *"most likely to function effectively as practitioners and professional leaders"* Stafford (1986) p34, has fuelled interest in the relationship between learning styles and clinical performance.

Presseller (1983) stated that putting theory into practice is the most difficult task in the occupational therapy education process. Wong (1979) noted that teaching strategy alone will not guarantee transfer of theoretical knowledge into clinical application.

Stafford (1986) investigated the relationship between learning style and clinical performance. In her small sample of 33 she used two instruments to measure learning styles viz Kolb's Learning Style Inventory (LSI) (1996) and Your Style of Learning and Thinking - Form C (SOLAT). The scores of these 2 tests were correlated with the results attained by the candidate on a physical and mental health clinical placement using the American Fieldwork Performance Report.

Using Pearson's product moment correlation co-efficients she found:-

* a significant correlation between SOLAT-L (logical, initiative and integral approach) and professional characteristic scores on the report obtained for the physical placement;

* a significant positive correlation between the SOLAT-L Active Reflective score and all the components of report in the physical placement;

* a significant positive correlation between the SOLAT-R (synthetic, appropositional thinking and characteristics of left hemisphere) and treatment planning, treatment implementation and total scores of report achieved in mental health practice. There was also a significant positive correlation between LSI Active-Reflective scores and the communication score on the mental health placement report.

As a result of her study Stafford (1986) suggested that a:-

> *"learning style characterised by logical, systematic, processing of information (SOLAT-L) may be more relevant in physical disability settings, than in mental health dysfunction settings. In contrast, clinical performance in mental health dysfunction settings may be enhanced by a more intuitive, appositioned style of processing information (SOLAT-R) or by the ability to employ a systematic, holistic or integrated approach (SOLAT-I)"* (p 39).

Conclusion

From the literature it appears that all groups of students studied prefer teacher structured concrete, interpersonal and practice orientated learning activities. Occupational Therapy students favoured the Accommodator Style of learning and differed from students in other allied medical professional groups.

While learning styles have never been used as a selection criteria, the available research seems to suggest that there could be explored as a selection tool. Although the results of

the predictive value of this measure are contradictory, neither study quoted was extensive and the subject needs more rigorous examination. However the suggestion that a different type of learning is needed for clinical practice in physical and mental health settings would indicate that the selection process should isolate individuals who process information using SOLAT L+R criteria, since the undergraduate BSc Occupational Therapy course demands competence in both fields of practice.

2.3.5.3 Assumptions about prospective candidates that may influence selection

It is assumed that prospective candidates for a career in Occupational Therapy may have attitudes and abilities that may be useful to examine in the selection process.

2.3.5.3.1 Attitudes towards a disabled person

The profession has traditionally assumed that the people who select occupational therapy as their career had a positive and caring attitude towards disabled people (Benham 1988). If this trait could be identified it may be a criterion that could be considered in selection. Studies to explore this idea have been disappointing.

Benham (1988) is the only author to have demonstrated that occupational therapy personnel have a positive attitude toward the disabled. She studied the attitudes of different categories of occupational therapy personnel. Results indicated that the 619 respondents had a very positive attitude towards the disabled, with the only significant difference between the groups relating to years of experience, where respondents with sixteen years and more experience were more positive.

The majority of respondents agreed that a negative attitude towards the disabled would adversely affect the occupational therapy process and proposed that only individuals who had a positive attitude should be selected into occupational therapy courses.

Research by Westbrook and Adamson (1989) suggested that this may not be practical. They studied occupational therapy students' knowledge of and attitude to disabled people. Results indicated that the students had a poor knowledge of disabled people but a reasonably positive attitude, which was low in the first year of training but improved towards the final year.

Lyons (1991) used the Attitude Towards Disabled People Scale to compare the scores achieved by occupational therapy students from all four years of study, to those of first year business students. Results indicated that, in contrast to the Westbrook and Adamson's study (1987), no significant difference could be found between any of the four years of study of occupational therapy students and no significant difference could be found between the attitude of occupational therapy students compared to first year business students. Unfortunately, as the exact scores for the different groups were not given a comparison to the Westbrook and Adamson study (1987) was impossible.

In discussing these results Lyons noted:-

> *"the failure to find a significant difference between the attitude scores of first year occupational therapists compared to business students was unexpected. I thought that aspiring occupational therapists would manifest more positive attitudes towards the persons with whom they work than would aspiring business students. Of course, this belief was based on the assumption that students who are drawn to a career in occupational therapy will stand out from their peers for the vigour of their humanistic concerns regarding people with disabilities. The findings suggest the importance of maintaining a healthy scepticism in attributing to*

aspiring occupational therapists any particular set of beliefs and the folly of trying to select candidates using these beliefs" (p314).

Based on these limited findings the value of using a prospective students' attitude towards the disabled as a selection criterion is questionable.

2.3.5.4 Values and interests

Otto (1947) proposed that establishing the values and interests of prospective students would contribute to the selection process. Studies undertaken to explore this issue have also been inconclusive.

MacNab (1985) showed that the values held by students in the fields of business, education and rehabilitation were significantly different. This study also indicated that although students in the rehabilitation field shared many similar values, they differed in the "level of value endorsement", with the greatest similarity evident between occupational therapists and physiotherapists.

Madigan (1985) studied the value system within the occupational therapy profession. She found that values between the different levels of occupational therapists were not consistent, and that there were significant differences in values between under- and postgraduate students.

Rovezzi-Carol and Incavitt (1984) also found a similar trend in physiotherapists who were aiming to specialise and to those planning to be generalists.

Madhill et al (1989) undertook a study to investigate the pattern and level of endorsement of values, interests and preferences, that were evident in the early stages of career development, in order to try to isolate values that may be considered in student selection. Two hundred and seventy six students from two Canadian universities participated in the study. The sample consisted of one hundred and fourteen occupational therapy students, seventy three physiotherapy students and eighty nine speech pathology/audiology students.

They concluded from the Life Role Inventory value scale that the same six values were of primary importance to all three groups of students, but the endorsement level was different. This conclusion supported the findings of MacNab (1985). Madhill et al (1989) suggested that these differences may be useful to distinguish between the groups. Occupational therapy students were found to value creativity and variety more highly than physiotherapy students did. They also valued aesthetics, creativity, physical activity, risk taking, social interaction, variety and physical prowess significantly more highly than speech pathology and audiology students did.

Conclusion

The foregoing research has indicated that it may be possible to distinguish between health science students and other students on the basis of their values and interests. It is not possible to distinguish between the different groups of health science students on the basis of values, however the different groups do appear to endorse values and interests at different levels. This difference in endorsement level of interests and values may possibly be an issue pertinent to selection but it needs further investigation.

2.4 SUMMARY

The review of the literature found few studies that focused on the process of selecting occupational therapy students. Most literature focused on the different selection procedures and on trying to isolate the characteristics which distinguish occupational therapists and occupational therapy students from the general population and from other allied health professionals.

While the literature review focused mainly on the three selection criteria currently being used to select occupational therapy students to the University of the Witwatersrand BSc OT course, other selection criteria which hold promise for selecting occupational therapy students were also investigated.

The review revealed selection of students to be a complex process. There are two fundamental approaches to selection, the first being to redress the problems identified in the profession and the second being a component of a total management strategy for development of the profession. Both approaches underline the importance of selection not taking place in isolation but in the context of the professional environment where recruitment, selection, educational outcomes and professional practice are interdependent. The selection process should fairly and equably identify those candidates who have the potential and desire to succeed both as a student and a professional.

While there is a suggestion that the skills needed to be a student and professional are different, there is no clarity on the exact difference or what criteria can be used to identify and measure these skills.

The three selection criteria used to select occupational therapy students at this university, viz. interview, biographical questionnaire and previous academic performance, were explored in detail. Criteria that had been proposed for the selection of occupational therapy students at other universities such as personality characteristics, learning styles, attitude to disabled people and values and interests were also explored.

All the selection criteria that have been tried or proposed have been found to have difficulties, either with validity, reliability or the efficiency with which they predict results. No procedure proposed to date has been found to be infallible. Research also has failed to isolate a profile for occupational therapists, suggesting that they have no specific isolating characteristics, values and interest profiles that differentiate them from the general population or other professional groups. This implies that at this time, it would be presumptuous to try to select students based on any of these, as they have no proven basis.

When an individual applies to be admitted into an occupational therapy course, certain assumptions are made about her attitude towards disabled people and her values and interests. Studies have indicated that these assumptions are not based in truth, and trying to select students according to these assumptions would be inadvisable.

The review of the literature holds a number of important lessons for the selection of candidates to the BSc OT course.

* Selection is a complicated process. It requires clinicians and academic staff to sift through many candidates and to isolate a few, who are believed to be desirable, suitable and capable, when no concrete reliable information about any of these parameters exists. Not one of the selection tools had been found to be completely reliable or valid, although all have been found to have some merit. Our own personal assumption about the interests and values that a perspective occupational therapist should have, have also been found to be unreliable and may prejudice selection.

* It would seem that a selection process needs to be developed that is fair to all candidates and looks at a wide range of possible criteria, accepting that none are foolproof. The process should not be too expensive in terms of time, manpower and financial considerations but it should separate candidates that are likely to succeed in the course and serve the profession, with reasonable accuracy from those who will not. This may indicate that future research should focus on minimal requirements for success rather than trying to establish ideals.

CHAPTER 3: SELECTION OF CANDIDATES FOR THE BSc OT COURSE AT THE UNIVERSITY OF THE WITWATERSRAND

3.1 INTRODUCTION

The Faculty of Medicine at the University of the Witwatersrand has developed a model similar to that proposed by Blaisdell and Gordon (1979), to standardise the selection process for all candidates applying for undergraduate courses. This model for selection has been developed through consultation and the ongoing analysis of the performance of admitted students, in an attempt to efficiently select the best possible candidates within the constraints of limited manpower and financial resources.

This process has three aims:-

i) to be fair - no applicant should be advantaged or disadvantaged by the selection process.

ii) to admit a group of students with a broad range of attributes.

iii) to admit a class that has an acceptably low failure rate.

(Faculty Document: Admission of medical students 1980-1989).

3.2 THE SELECTION PROCESS

The model for the selection process has a number of steps and uses three assessments to sift candidates. The three assessments consist of one academic assessment based on previous academic performance and two non-academic assessments, the biographical questionnaire and pre-admission interview. Figure 6 is a diagrammatic representation of the selection process used.

Pre-requisites for admission

Applications are invited from any candidate wishing to study occupational therapy, irrespective of age, sex, colour, creed or nationality, provided they meet the following criteria:-

i) have a university entrance matriculation or equivalent education.

ii) have a 50% pass in mathematics at the higher grade or a 60% pass in mathematics at the standard grade.

iii) have either matriculation Biology or Physical Science, but both are considered an advantage.

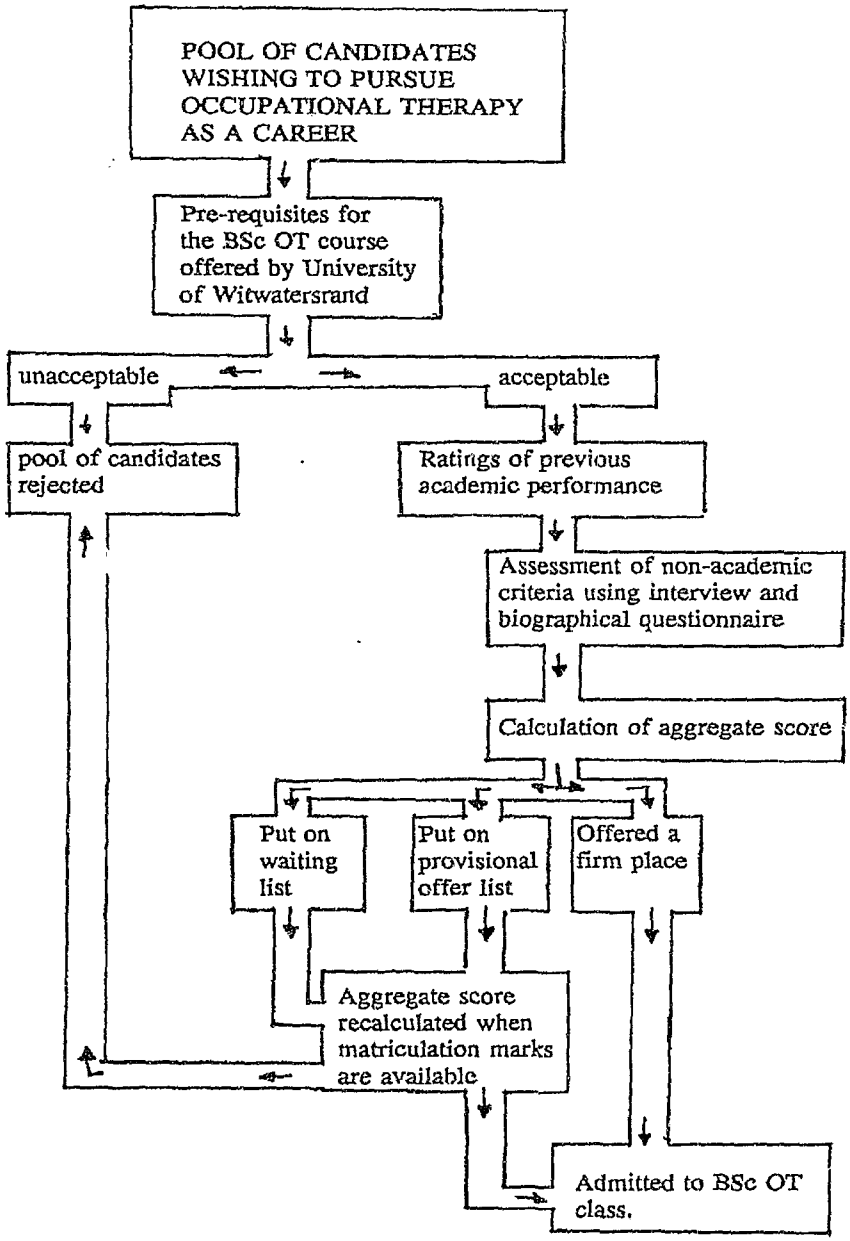


Figure 6 Diagrammatic Representation of the Selection Process used to Select Students Applying for Courses in the Medical Faculty.

■ Rating of previous academic performance

Rating of previous academic performance is the first step in the sifting of candidates who have met the pre-requisites. It involves establishing an academic rating which is calculated from the candidate's previous academic record.

■ Assessment of non-academic criteria

i) The biographical questionnaire

The biographical questionnaire was introduced into the selection procedure in 1984. It was designed by members of the faculty of medicine responsible for student selection and aimed to gather information of a non-academic nature about the candidate i.e. his/her interests and achievements outside the academic arena.

ii) The pre-admission interview

This is a ten minute unstructured interview conducted by two or three interviewers. The interview aims to:-

1. *exclude applicants who seem to the interviewers to be unsuited to the profession.*
2. *attempt to gauge the applicants' long term potential to succeed in and contribute to the profession.*

3. *mark/check the biographical questionnaire.*

(Faculty Documents Guidelines for Interviewers August 1987 and May 1989).

Aggregate scores

Scores of each assessment in the selection process are summed and all candidates in the applicant pool are ranked.

During 1982-1989 a number of changes were instituted in the calculation of the aggregate score:-

1982 and 1983	:	the interview score was added to the academic rating
1984	:	academic rating constituted 80% of the aggregate score, biographical questionnaire and interview, each 10%.
1985 to 1989	:	academic rating constituted 80% of the aggregate score and the interview 20%. The biographical questionnaire although completed by each candidate, was not scored nor included in the aggregate score (see 3.3).

Offering places

Provisional offers were made to the candidates with an aggregate score of 64 and more until 1988 and 67 and above in 1989, based on Standard 9 or preliminary matriculation results. Firm offers were made to those with an aggregate score of 64 (1988) and 67

(1989) or more where the matriculation marks were known. Students with scores of less than that stipulated but with interview scores of 6 and more were put on the waiting list. Once the matriculation marks were available, the academic rating and aggregate scores of students on the provisional waiting list were recalculated. Places were then offered to the students with **the highest ranking** until the maximum number of places negotiated for that year had been filled (Faculty Document Allied Medical Disciplines Admission procedure for 1980 and S87/633).

3.3 PROBLEMS RELATING TO THIS SELECTION PROCESS FOR THE BSc OT COURSE

Over the last thirteen years the admission process for medical students has been enthusiastically researched to ensure that the selection process was fair, that the students admitted had a broad range of attributes and that the failure rate was acceptably low. No such studies have been carried out on the selection process for BSc OT students. The only study carried out concentrated on the inter-rater reliability of interviewers in the pre-admission interview (Concha 1987).

Candidates applying to the BSc OT course continue to go through the standard selection process, although there have been a number of changes in the assessment scores included in the aggregate score used for offering places.

The biographical questionnaire score was only included in the aggregate score in 1984 and 1985. The staff of the occupational therapy department, when evaluating the biographical

questionnaire, were not convinced that the questionnaire addressed the non-academic criteria that were pertinent to a prospective occupational therapy student. However, there was very little agreement as to which characteristics were needed. It was therefore proposed that all candidates complete it, that the questionnaire be scored and the results kept for research purposes.

The pre-admission interview score was excluded in 1990 as a result of a two year double blind study carried out by Concha (1987). This study revealed very poor inter-rater reliability between interviewers and teams of interviewers. It was decided that the scores generated from pre-admission interviews were not sufficiently reliable and that some candidates may have been disadvantaged. Thus since 1990 despite completing a biographical questionnaire and attending a pre-admission interview only previous academic performance rating was used to attain the aggregate score for the offering of places.

In addition it appeared that the selection process for occupational therapy was failing to meet its other two aims:-

i) Admitting a class with a broad range of attributes

A demographic analysis of the classes admitted between 1982 and 1989 revealed that the two hundred and thirty six students admitted were very homogenous limiting the range of attributes to be found in a class. 97.8% of the sample were female, 82% between 17 and 18 years of age, 83% were admitted directly from school and 86% were white.

This limited range of attributes within the sample, is however representative of homogeneity of the applicants in the selection pool.

A number of factors contributed towards the sample being so homogeneous. Occupational therapy is perceived to be a female profession and the poor salaries paid to Occupational Therapists discourage males from considering this as a career option. All recruitment efforts were focused on school children rather than mature individuals. Until 1984 Black candidates required ministerial permission to study in the Medical Faculty, so access was limited. However in spite of admission being open to all racial groups, between 1986 and 1989 candidates from the Black and Coloured communities remained severely under-represented in the sample. It is probable that Occupational Therapy, unlike Medicine, is not a well known profession in these communities. They have very few occupational therapy services in their communities and therefore few occupational therapists to disseminate information.

In addition since all candidates scored so low on the biographical questionnaire (1985 mean 2.5) it was assumed that the classes admitted had a very limited range of interests, a factor thought to be undesirable. This supported the concern that the biographical questionnaire did not assess the attributes needed for occupational therapy.

ii) Bringing the failure rate within acceptable limits

An evaluation of the 236 students admitted between 1982 and 1989 revealed a failure rate of 51.7% and an attrition rate of 34.7% (see Chapter 5). When compared to the average 22.8% failure rate and 19% attrition rate for medical students between 1980 and 1986 found by Mitchell and Haupt (1990) the failure and attrition rates for occupational therapy students were considered high.

These defects prompted the research reported in this dissertation.

CHAPTER 4: RESEARCH METHOD

4.1 INTRODUCTION

As a starting point for this dissertation it was decided to focus on investigating the current selection process to try to establish the relationship between the different assessment procedures being used in the selection process and their ability to discriminate between students who are successful or fail in the current BSc OT course. In order to achieve this the following null hypotheses were formulated to be tested:-

1. There is no relationship between the pre-admission interview score, the score attained for the biographical questionnaire and eventual success or failure in the course.

2. There is no relationship between the academic rating or matriculation aggregate and eventual success or failure in the course.

3. There is no relationship between the individual matriculation marks for mathematics, physical science, biology and the candidates' first language and eventual success or failure in the course.

4. There is no relationship between students who are admitted with matriculation biology and physical science and those who are admitted without these two subjects and their eventual success or failure in the course.

The expected outcome of this study is that it will give those responsible for the selection of candidates to the University of Witwatersrand's BSc OT course a better:

- understanding of the value of each of the three admission assessments being used, for predicting success or failure in the course as a whole or in individual subjects.

- understanding of the value of the combination of the three admission assessments being used, for predicting success or failure in the course as a whole.

- idea of whether the selection criteria and method should be the same or different to that of medical students, which has been well researched by Mitchell et al 1987, 1988, 1990 and 1997.

To test these null hypotheses and achieve these aims a retrospective descriptive and analytical study was undertaken. Past matriculation records, selection assessment scores and marks attained in each subject of the BSc OT course were collected and analysed to determine the relationship between selection assessments and performance within the BSc OT course.

4.2 SAMPLE

The sample consisted of all two hundred and thirty six students admitted to the BSc Occupational Therapy course, offered by the Faculty of Medicine of the University of the Witwatersrand, from 1982 to 1989 inclusive.

4.3 DATA COLLECTION

The following data was collected from the Medical Faculty Archives on each of the students included in the study (see Appendix 3).

- **Demographic data**

This included:-

* year of admission
* age at admission
* gender
* whether the BSc OT course was their first, second or third choice
* the High School attended
* post matric activities if the candidate was not admitted straight from secondary school.

- **Previous academic record**

This included:-

* the matriculation authority who had issued the matriculation certificate

* matriculation aggregate

* matriculation marks for:-
  - mathematics
  - physical science
  - biology
  - first language.

This combination of matriculation marks was selected as the first three are either prerequisite or recommended subjects for admission, while the other was identified as a possible indicator for success or failure, in the study which had been undertaken on the Medical students. Sixth and Seventh matriculation subjects were not included in the current research due to the diversity of the subjects taken.

Where students had passed subjects on the standard grade, these marks were converted to a higher grade equivalent so that the results obtained were all comparable. This was done by multiplying the marks by 0.75 which is the procedure used by the admissions office to equalise the standard and higher grade subjects.

■ **Selection assessments**

This included:-

* **the rating of the biographical questionnaire** completed by each student (see Appendix 1). All scores were equalised by converting the score to a total out of 10.

* **the consensus score of the 10 minute interview** by the two or three interviewers according to the set guidelines (see Appendix 2). It is important to note that the rating scale used to score the pre-admission interview was changed from an eleven point scale to a five point scale in the 1987 admission year. These two scales were difficult to align, so no attempt to equalise them was undertaken. This adjustment to the scoring system was taken into account when the results attained on the pre-admission interview before 1987 were compared to those attained after 1987, to determine if there was a significant difference between these two time periods.

* **the academic rating.** During the research period three slightly different procedures were used to calculate the academic rating. In 1982 the nominal matriculation aggregate was used. From 1983 to the present, the academic rating was calculated by multiplying the matriculation aggregate mark by 0.8. In 1989 bonus points were added to the academic rating of candidates who had written matriculation examinations with certain authorities, to ensure that all candidates were able to compete equally in the selection process (see 2.3.3.1).

For the purpose of this study, in order to equate the academic ratings, the matriculation aggregate of the 1982 admission year was multiplied by 0.8 and the bonus points added in 1989 were excluded.

Thus, one hundred points were allocated to the three selection assessments. The biographical questionnaire and pre-admission interviews were allocated ten points each. Therefore 20 points are allocated to the two non-academic criteria. Eighty

points were allocated to the matriculation aggregate, representing the academic criterion.

4.4 GROUPING THE SAMPLE

Following the data collection, the sample was divided into five groups based on the students' academic record within the BSc OT course:-

Group A — students who passed all subjects in all 4 years on the first attempt

Group B — students who failed one or more subjects but completed the course

Group C — students who failed one or more subjects but had not yet completed the course

Group D — students who failed one or more subjects and dropped out of the course

Group E — students who passed all subjects on first attempt but dropped out of the course

4.5 DESCRIPTIVE STUDY

This component of the study analysed the demographic characteristics and the overall performance of the sample in the BSc OT course, in order to examine the failure and attrition pattern and establish if any of the demographic characteristics were linked to the failure and attrition pattern.

■ Demographic characteristics of the sample

The following information was collected from the raw data:-

* the number of students admitted in each year in the research period (1982-1987).

* the gender of admitted students.

* the number of students admitted from each matriculation authority.

* whether the BSc OT course was the students' first, second or third choice.

* post university experience of students admitted.

* the schools where OT students did their secondary schooling.

Percentages and means were calculated where necessary.

■ **Overall performance of the sample in the BSc OT course**

The following data was calculated from the raw data:-

* the number of students in each of the five research groups (see 4.3.4).

* the number of students in each group in each year (1982-1987).

* the failure rate and courses most commonly failed.

* the attrition rate of the whole sample and in each year of study.

Percentages and means were calculated when appropriate.

4.6 ANALYTIC STUDY

In order to determine the relationship of three selection assessments to the performance of the students in the BSc OT course, three analytical procedures were used:

i) A two-way analysis of variance (ANOVA) was used to determine whether differences existed between:

   * the 4 groups into which each student was placed.

* the matriculation aggregate and each of the matriculation subjects (i.e. Mathematics, Physical Science, Biology and First Language) and the four groups into which each student had been placed.

Each parameter listed above was analysed in two time periods (before 1987 and after 1987) since a major curriculum change took place in 1987 as well as a change in the scoring of the interview. In the two time periods the sample was analysed as a whole and then according to the 4 groups into which each students had been placed. Thereafter a pairwise comparison was undertaken on all of the groupings mentioned above to determine specific differences. In the analytical study a result was considered significant if $p < 0.05$.

ii) The Pearson's Chi-square test was used to determine if there was any difference in the performance of students in the 4 groups, between those who had matriculation biology and those that did not. Exactly the same procedure was used to determine differences in performance between those that had matriculation physical science and those who did not.

iii) A logistic regression study, using a statistical model designed by Dr P. Bekker of the Biostatistical Department, was used to test if the matriculation aggregate or individual matriculation variables could be used to predict outcomes in the BSc OT degree.

The logistic regression study allowed for the establishment of an odds ratio to predict the probability of passing or failing in the BSc OT course based on the number of variables,

in this case the matriculation aggregate, and the matriculation marks attained in the following subjects: Mathematics, Biology, Physical Science and First Language.

The odds ratio was calculated using the median of the above matriculation variables. Mathematics was tested at both the 50% and 40% levels.

The significant p value was tested for each of the five matriculation variables. The cut-off for p was decided after evaluation of the sensitivity and specificity associated with each of the different variables tested.

The odds ratio was used to estimate the relative risk for each variable to determine if students are correctly classified i.e. this is used to check that students are correctly classified to prevent prediction of false positives (that they will fail when they should pass) and false negatives (that they will pass when they should fail) (Munro 1986).

Figure 7 summarises the steps that were taken in the research method used in this dissertation.

During the planning phase of the analytic study, it was decided that Group B and C would be combined into one, Group BC, because the groups are similar and the number of students in each group was too low for statistical analysis.

Sample	All students admitted to BSc OT course 1982-1989
Data Collection	Information on each student was collected from Faculty Archives * demographic data * previous academic record * selection data * academic record in course
Grouping of Data	Candidates were divided into 5 groups based on academic record in course:- A : students who pass all subjects at first attempt B : students who fail one or more subjects but qualify C : students who fail one or more subjects and who are still in the course D : students who fail one or more subjects and drop out E : students who pass subjects on first attempt and drop out
Methodology: i) Demographic study	* to examine the demographic characteristics of the sample * to examine the overall performance of sample in BSc OT course to determine passing, failure and attrition rates.
ii) Analytical study	* two way analysis of variance to examine the differences between: • 3 assessment ratings and performance in the 4 Groups. • matriculation aggregate and matriculation subjects and performance in the 4 Groups. * Pearson's Chi-square test was used to examine whether a significant difference exists in performance of students admitted with and without matriculation Biology and Science. * Logistic regression study was used to examine the predictive value of matriculation aggregate, individual or combined subjects.
Analyse the results	Determine and discuss reasons for: * results that were not significant * results that may be significant * results that are significant
Conclusion	Draw conclusions leading to recommendations for the selection committee for OT students

Figure 7 Diagram of Steps in Research Method used.

4.7 CONCLUSION

This dissertation was designed to use retrospective data to study the characteristics of the sample of students admitted to the BSc OT course from 1982-1987. In addition it was designed to investigate the relationship of the three selection assessments (viz. Biographical Questionnaire, Pre-admission Interview and Academic Rating) to the performance of students in the course, and to determine if any selection criterion could be identified as a predictor of success or failure.

CHAPTER 5: RESULTS OF DESCRIPTIVE STUDY

5.1 INTRODUCTION

The descriptive study in this dissertation analysed the demographic characteristics of the sample, as well as the passing, failure and attrition pattern and rates of students. This study aimed to determine if any of the studied demographic characteristics could be linked to the passing, failing and attrition pattern and rate of students.

5.2 THE SAMPLE

The sample consisted of a total of 236 students, who were admitted to the first year of the BSc OT Course in the eight consecutive admission years, from 1982 to 1989 inclusive and followed up as they progressed through the course. The number reflects only the first time a student is admitted to a subject, and does not include readmissions to the same subject as a result of failure. See Figure 8 that illustrates the number of students admitted in each year.

Based on the student's performance in the BSc OT course it was found that the sample could be divided into the 5 research groups described in Chapter 4 (4.4) as follows:

* 89 (37.7%) students who passed all subject in the 4 year BSc OT course on the first attempt (Group A)

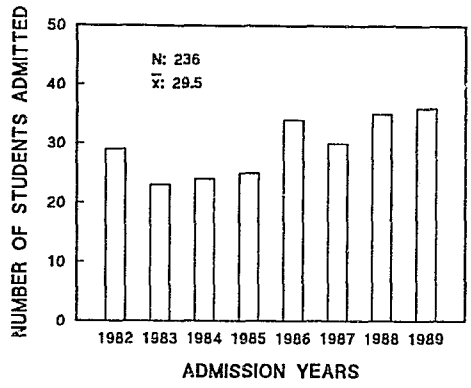


Figure 8 **Number of students admitted in each admission year 1982-1987.**

* 57 (24.2%) students who failed one or more subject on the first attempt, but who completed the degree (Group B)

* 8 (3.4%) students who failed one or more subject on the first attempt, but have not yet completed the degree (Group C)

* 57 (24.2%) students who failed one or more subject on the first attempt, but then left the degree (Group D)

* 25 (10.5%) students who passed all subjects on the first attempt, but who left the BSc OT course (Group E)

Figure 9 illustrates the distribution of students in each of the above 5 groups in each year during the research period 1982-1989.

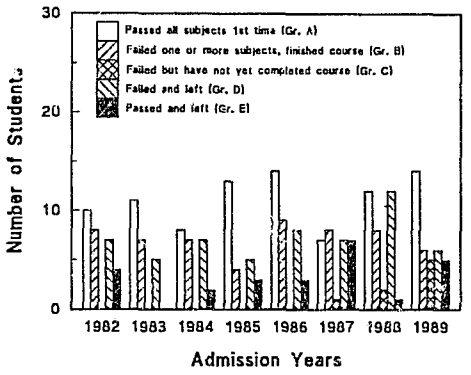


Figure 9 **Number of students in each group in each year.**

From Figure 9 it was evident that:

* in each of the admission years studied the group who passed first time round (Group A) represented the greatest number of students, with the exception of 1987 where the number in Group B was greater and in 1988 where group A and D were equal.

* in 1984 and 1989 the group which failed subjects but completed the course (Group B) and the group which failed and left (Group D) were equal. However in 1982, 1983 and 1987 the number in Group B slightly exceeded Group C. In 1985 and 1988 the number of students who failed and left the course was greater than those who failed and remained in the BSc OT course.

* students in Group C only featured in the data from 1987 as they had not yet completed the course, but each year the number has increased.

* there were no students in the Group that passed and dropped out (Group E) in 1983. This group had the lowest number of students in 1982, 1984, 1985 and 1986. In 1987 the number in Group E equalled those that passed and completed the course (Group A) and the group who failed and dropped out (Group D). In 1989 this group was equal in size to the group who had failed but were still in the course (Group C).

5.3 DEMOGRAPHIC CHARACTERISTICS OF SAMPLE

Gender

During the research period 231 (97.8%) of the students admitted were female, with only 5 males being admitted, one in each of the following years: 1984, 1985, 1986, 1988 and 1989. None of the male students completed the course. One male student passed all subjects but left in the final year (Group E) . The other 4 left after failing one or more subjects (Group D).

Age

On admission the age range of the sample varied from 17 to 40 years, with the mean age being 18.2 years and standard deviation of 1.81. The ages of 7 students were not recorded. Table 3 describes the age distribution of the sample.

Table 3 **The age distribution of students in the sample.**

Age	17	18	19	20	21	23	24	25	40	Unknown
Total	55	117	44	7	2	1	1	1	1	7

Table 4 **The mean age of each group.**

	Group A	Group B	Group C	Group D	Group E
No.	89	57	8	57	25
No. with age not recorded	4	2	-	-	1
Mean age	18.20	18.03	17.38	18.29	18.90

Group E has the highest mean age of 18.9 (see Table 4). This figure is influenced by the fact that the oldest student admitted (40) was in this group and has biased this figure. Students in group A are marginally older than those in groups B and C but very similar to the mean age of group D. Group C had the lowest mean age.

Type of matriculation

71.5% of the sample were admitted with a Transvaal Senior Certificate matriculation (TSC). Table 5 describes the number of students admitted with matriculations issued by the different authorities.

Table 5 **Number of students in the sample admitted with the various matriculation certificates.**

	OFS	TSC	Natal	JMB	DET	Indian	Coloured	Cape	Unknown
Total	3	166	11	24	6	17	4	1	4

Table 6 **The distribution of the different matriculations in each of the 5 research groups.**

Matriculation Authorities	TED	OFS	Natal	JMB	Indian	Cape	Col	DET	Unknown	Total
Group A	68	2	3	11	2	0	1	1	1	89
Group B	43	1	1	4	6	0	1	0	1	57
Group C	5	0	1	0	1		1			8
Group D	37	0	4	5	4	1		5	1	57
Group E	13	0	2	4	4		1		1	25
Total	166	3	11	24	17	1	4	6	4	236

From Table 6 it can been seen that students with the OFS matriculation were most successful in the course with a pass rate of 66%, although the number in the total sample was only 3. Students with the JMB matriculation passed all subjects more frequently (62.5%) than did students with the TED (48.7%), Natal Senior Certificate (45%) or the matriculation of the Department of Indian Affairs (35%) when evaluating groups A and E together. DET was the least successful matriculation, with 5 of the 6 students failing subjects and leaving the course (83.3%) and only 1 student passing all subjects on the first attempt.

Selection of BSc OT as a first, second or third choice

Occupational Therapy was the first choice of 195 (82.7%) of the students admitted (see Table 7).

Table 7 **The number and % sample for whom Occupational Therapy was a first, second or third choice.**

	First choice	Second choice	Third choice	Total
Number of students	195	37	4	236
% of Sample	82.7	15.7	1.6	100

Table 8 **The distribution of choice in each of the 5 research groups.**

Choice	Group A	Group B	Group C	Group D	Group E	Total
1st	79	46	7	46	17	195
2nd	10	11	1	10	5	37
3rd	0	0	0	1	3	4
Total	89	57	8	57	25	236

Group E (students that passed and left the course) had the highest percentage of students (see Table 8) where Occupational therapy was not their first choice, which represents 32% of Group E. Group B and D had exactly the same number of students where occupational therapy was not their first choice, 11 students which represented 19.2% of each of these groups. The group for which students passed on first attempt (Group A) had the highest number of students where Occupational therapy was the first choice - 79 students, which is 88.8% of that group.

Previous experience of students

192 (81.4%) of the sample were admitted straight from secondary school, while 40 (16.9%) were involved in other activities before admission. The previous experience of

4 subjects was not recorded. Table 9 reflects the type of post matriculation experience of the 36 students.

Table 9 **Previous experience of sample.**

	Post matric experience									Total
	Scholars	Unknown	Working	Univ.	Teachers training	AFS	Over-seas	Teach	Other	
No	192	4	7	18	2	3	2	1	7	236
% of sample	81.4	1.7	3	7.6	0.8	1.3	0.8	0.4	3	100

Only 18 students (7.6% of sample) had some university experience and 72% of these were in group A. Groups B, C and E each had 1 student who had had previous university experience while group D had 2.

Table 10 ***Distribution of students with post matriculation experience in each research group.***

Group	A	B	C	D	E	Total
Students with post matriculation experience	15	9	1	11	4	40
% of Group	16.8	15.7	12.8	19.2	16.0	

Table 10 illustrates that students with post matric experience were quite evenly represented within each group, with group D having the highest at 19.2% and group C the lowest at 12.8%.

5.4 PERFORMANCE OF THE STUDENTS IN THE BSc OT COURSE

■ Pass rate

The pass rate represents the number of students who passed subjects in the BSc OT course on the first attempt, irrespective of the actual year they were in and whether or not they completed the course (Groups A and E).

In the sample of 236 students 114 passed subjects in the 4 year BSc OT degree on the first attempt. This represents a pass rate of 48.3%. Table 11 shows the number of students who passed in each year.

Table 11 **Number of students who passed in each year.**

Year	1982	1983	1984	1985	1986	1987	1988	1989
No. in first year	28	24	24	25	34	30	34	37
No. who passed	13	11	10	16	17	14	13	19
%	46.4	45.8	41.6	64.0	50.0	46.6	38.2	51.3

Only in 1985 was the pass rate considered to be acceptable. In 1986 and 1989 the pass rate was approximately 50%. In 1982, 1983 and 1987 the pass rate was approximately 46%, while in 1984 and 1988 the pass rate was low ranging between 38% and 41%.

Failure rate

The failure rate represented the percentage of students from the sample who failed one or more subjects during the BSc OT course, irrespective of whether they have completed, left or had not yet completed the course (Group B, C and D).

In the sample of 236 students, 122 failed one or more subjects on the first attempt. This represented a 51.7% failure rate.

This overall failure rate was extremely high when compared to the one third failure rate expected for medical students in 1977 and the only 20% failure rate expected in 1989 (Mitchell 1989).

Failure rate in each year of study

The analysis revealed that more students failed first year subjects than any other year (see Figure 10 which shows the total number of failures in each year). As some students fail in more than one subject and in more than one year the total exceeds the 122 students who have failed in the 4 years of study.

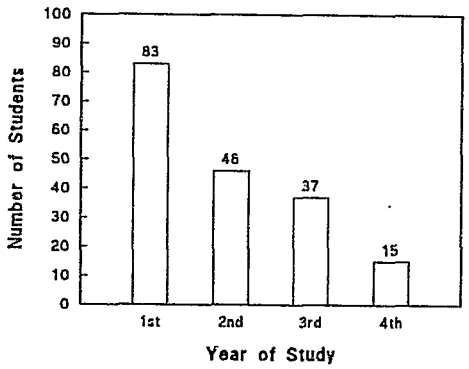


Figure 10 **Number of students who failed courses in each year.**

☐ First year

In the first year there were 5 subjects up until 1987, thereafter there were six. Occupational Therapy I (OT I) was a second year subject until 1987, but was moved down to the first year in 1988. However throughout this study the results of OT I, were included in the second year analysis for purposes of consistency. The first year subject courses are: Biology, Psychology I, Physics (½), Chemistry (½) Human Behaviour Sciences (HBS) (½). In the research period 33 (68%) students in the sample failed (see Figure 10) 180 subjects (see Figure 11). 50 (60%) students failed between 1 and 2 courses, while the remaining 33 (39%) failed between 3 and 5 courses (see Figure 11).

In comparing the groups where there were subject failures (Group BC and D) Group B+C were combined due to their similarity and because the number of students in Group C was very small and it was not represented in each research year.

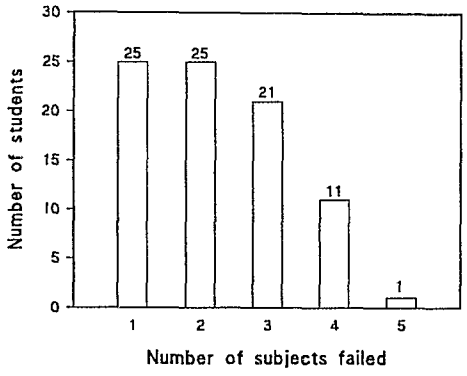


Figure 11 **Frequency of subjects failed in first year.**

Subjects that students most frequently failed are Chemistry (Chem), Physics and Biology (Bio). It is interesting to note that the students in group D fail all subjects, (except Human Behavioural Sciences (HBS)), approximately twice as often as students in Group BC (see Figure 12).

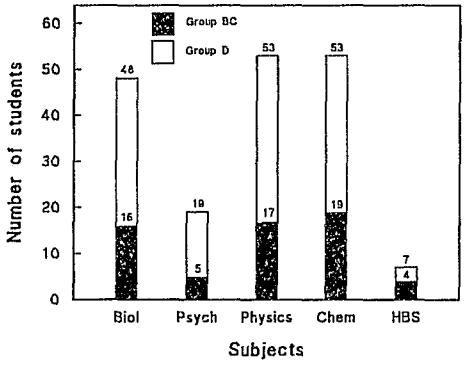


Figure 12 **Number of students who fail each subject in first year.**

See Figure 13 for the comparison of the failures of Group BC (failed one or more subjects and then completed or are still in the course) and Group D (failed 1 or more subject and then left) in the first year (see Figure 13).

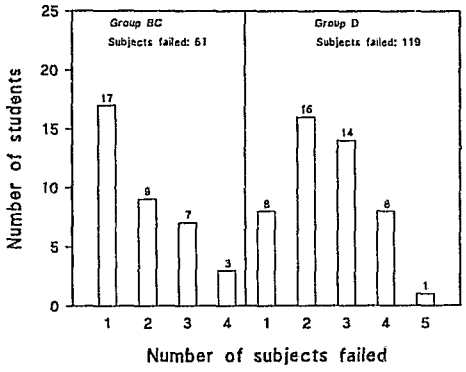


Figure 13 **Comparison of the failure rate of Group BC and D in the first year.**

Students in Group BC failed only 61 subjects (33.8%) while students in Group D failed 119 (66%) subjects. This suggests that the students that leave the course after the first year have a greater number of multiple failures than those who complete the course.

☐ Second year

There were four subjects in the second year up until 1987 and only three after this date. Occupational Therapy I (OT1) was moved to the First Year in 1988. In order to achieve consistency OT1 results were included in the second year throughout. The second year subjects were: Anatomy, Physiology, Occupational Therapy I (OT1) Therapeutic Activity and Techniques I (TATI). In the research period 46 students failed 66 subjects (see Figure 14) but most students (60.8%) failed only one subject in this year.

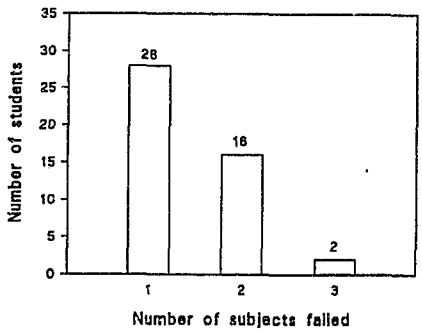


Figure 14 **Number of subjects failed in second year.**

In second year the subjects that students failed most often were Anatomy (Ant) (43%) and Physiology (Phys) (42.5%), while only 6% failed Occupational therapy I (OT1), 7.5% failed Therapeutic Activities and Techniques I (TAT1) (see Figure 15).

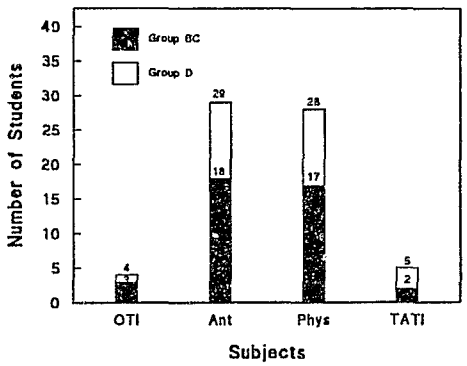


Figure 15 **Number of students who failed subjects in second year.**

In comparing the failure of group BC (students that failed but completed the course) to Group D (failed and dropped out) students in group BC tended to fail mainly 1 subject while those in group D tended to have multiple failures (see Figure 16).

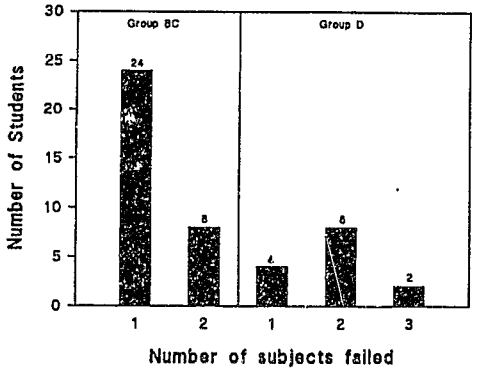


Figure 16 **Comparison of failure rate in Group BC and D in the second year of study.**

☐ Third year

In the Third Year of study the subjects attended are Medicine and Surgery (Med and Surg), Psychology II (Psycho), Psychiatry for therapists (Psych), Occupational therapy II (OTII) and Therapeutic Activities and Techniques II (TATII).

During the research period 37 students failed a total of 51 subjects. In this year most (64%) failed only one subject (see Figure 17).

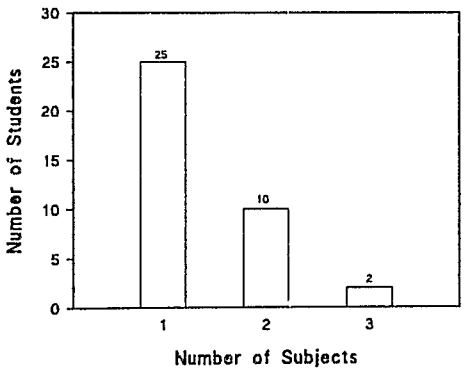


Figure 17 **Number of subjects failed in third year.**

The most frequent subject failed in third year is Occupational Therapy II (OTII) (see Figure 18).

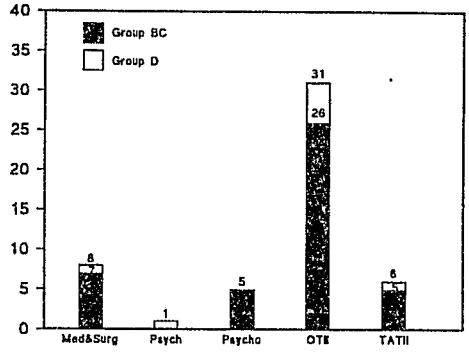


Figure 18 **Number of students failing third year subjects.**

The comparison in the failure rate between Group BC and D revealed very little, since due to the drop out in first and second year there were only 6 subjects in Group D in the third year.

☐ Fourth year

In the fourth year of study there are three subjects: Occupational Therapy applied to Psychiatry (OTIIIA), Occupational Therapy III applied to Physical Conditions (OTIIIB) and Therapeutic Activities and Techniques III (TATIII).

16 students in the sample failed 27 subjects in this year. Fourteen of these were in Group BC and only one in Group D. Most students who failed fourth year failed one and two subjects while four (27%) failed all three (see Figure 19).

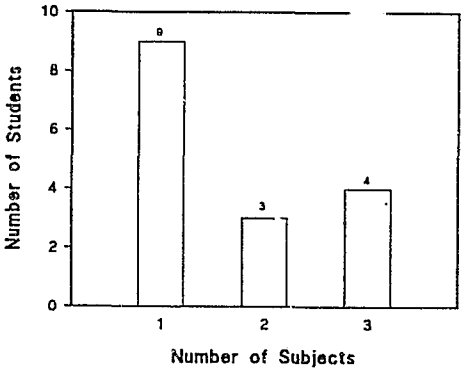


Figure 19 **Number of subjects failed in fourth year.**

In final year the subject most often failed is TATIII (see Figure 20). Again the comparison between Groups BC and D revealed little since group D contained only one student.

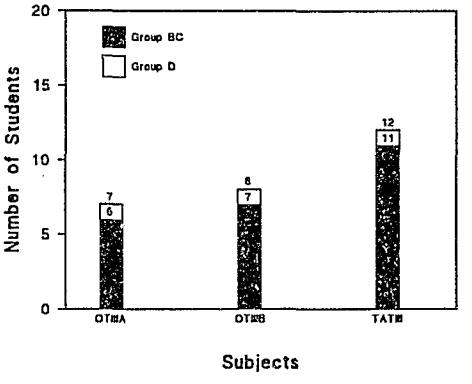


Figure 20 **Number of students failing fourth year subjects.**

5.4.3 ATTRITION RATE

The attrition rate was defined as the number of students admitted to the BSc OT course who left to pursue other activities. The most common reasons for attrition are assumed

to be failure or the decision that Occupational Therapy was not the correct choice of profession.

Of the 114 students who passed all subjects on the first attempt only 89 (78.1%) completed the course (Group A) while 25 (21.9%) left the course to pursue other activities. Of the 122 students who failed subjects on the first attempt, 57 (46.7%) repeated the subjects that they had failed and went on to complete the BSc OT course. A further 8 (16.5%) passed their subjects on the second attempt and continued but had not yet completed the course. The remaining 57 (46.7%) either left the course as they did not pass their supplementary examinations or because they decided against Occupational Therapy as a career option (see Figure 21). Thus 82 (35%) of the students admitted have left the course.

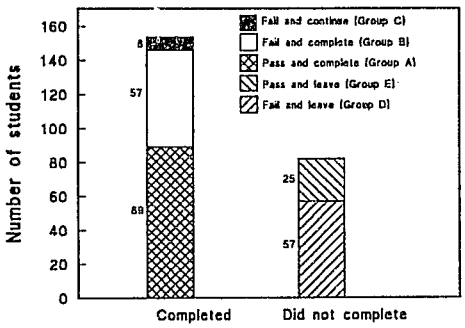


Figure 21 **Number of students that completed and did not complete the course.**

From Figure 22 it was evident that the attrition was greatest in the first year. 51 students left in this year (62%) followed by 23 (28%) in the second year, 7 (8.5%) in third year and the remaining one leaving in the final year.

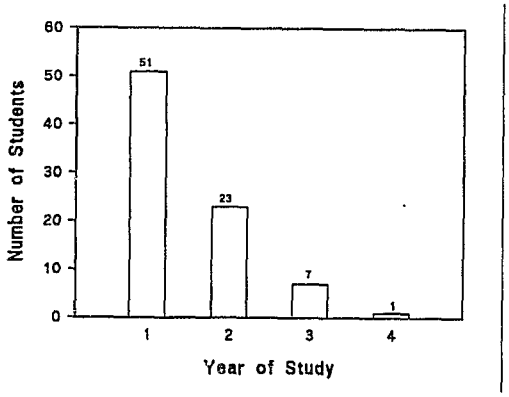


Figure 22 **Year of study in which students leave the course.**

5.5 CONCLUSION

236 students were admitted to the first year of the BSc OT course from 1982 to 1989 inclusive.

Based on their performance in the course the students were divided into 5 research groups:

A: those who passed all subjects on first attempt (37.7%).

B: those who failed subjects on their first attempt but completed the degree (24.2%).

C: those who failed subjects on their first attempt but have not yet completed the degree (3.4%).

D: those who failed subjects on their first attempt then left (24.2%).

E: those who passed all subjects on first attempt but left the degree (10.5%).

Group A represented the largest number of students in each year, except in 1987 and 1988.

231 (97.8%) of the sample were female, and none of the 5 males (21%) who were admitted completed the course.

The age range of the sample on admission was 17 to 40 with the mean age being 18.2. Group C was found to have the lowest mean age of 17.38 years while Group E the highest at 18.9 years. 71.5% of the sample were admitted with a matriculation of the Transvaal Education Department while OFS matriculation was found to be the most successful, followed by the JMB, TED and Natal Senior Certificates. Students with the matriculation of the Department of Education and Training (DET) were found to be the least successful with only 1 out of 5 candidates passing subjects.

195 students were admitted with Occupational Therapy as their first choice of course. Group A had the highest number of candidates where Occupational Therapy was the first choice, while group E had the lowest.

192 subjects were admitted into the degree straight from secondary school. 40 subjects had some post matriculation experience and were quite evenly distributed between the 5 groups. Only 18 subjects had previous university experience, and 72% of these were in group A.

The overall pass rate during the research period was 48.3% but the pass rate in each research year varied considerably from an unacceptable 38.2% in 1988 to an acceptable 64% in 1985.

The overall failure rate of the sample was found to be 51.7% with most failures in First Year (66) and only 19 in the final year of study. In the first year most students failed one or two subjects with Physics, Chemistry and Biology being the most frequent subjects failed. The difference between those students that fail subjects and complete the course (Group BC) and those that fail and leave the course (Group D) is the higher number of multiple failures in Group D. In the second year of study most students fail one subject with Anatomy and Physiology being the two most frequently failed subjects. Again in the second year the main difference between those students that fail and continue (Group BC) and those that fail and leave the course seems to be multiple failures. In the third year the number of failures is greatly reduced to 25 students failing 36 subjects. Most students fail only one course, and OTII is the most frequently failed course. The comparison between groups BC and D reveal nothing of note as group D was extremely small in this year of study. In the final year there was the lowest number of students failing (13). An equal number of students failed one or two subjects and the most frequently failed subject was Therapeutic Activities and Techniques III.

The attrition rate from the sample of 236 was 82 students which represents 35% of the sample. It is assumed that the reasons for attrition are failure (69.5% in Group D) and deciding on an alternative career pathway (30.4% in Group E). Most students leave the course in the first and second year.

CHAPTER 6: RESULTS OF THE ANALYTICAL STUDY OF THE ADMISSION CRITERIA: NON-ACADEMIC CRITERIA

6.1 INTRODUCTION

Two selection assessments were used to select students into the BSc OT degree (see 4.3.9 p.45): the non-academic criteria which consist of the pre-admission interview and biographical questionnaire and the academic criteria which was determined from the candidates' previous academic performance (see 7.1).

The purpose of using the 2 non-academic criteria was to enable the selection panel to select students with a broad range of attributes to ensure diversity and excellence in human potential (Mitchell 1989), while the academic rating was used to ensure academic excellence and the selection of candidates who would probably pass the subjects in the BSc OT course.

The analytic study on the 2 non-academic criteria consisted of a two way analysis of variance (ANOVA) to establish if these two criteria could be used to reliably predict which candidates would succeed in the BSc OT course (see 4.6). In order to determine this ANOVA was used to establish any significant difference between:

i) the 4 research groups (Groups A, BC, D and E) (see 4.4).

ii) The whole sample before and after 1987 (T_1 and T_2) see (4.6).

iii) The 4 research groups in each time period - Group A_1 to Group A_2, Group BC_1 to BC_2, Group C_1 to C_2, Group D_1 and D_2 and finally Group E_1 to E_2.

6.2 THE PRE-ADMISSION INTERVIEW

This was a 10 minute unstructured interview conducted by two or three interviewers. Interviewers were mostly either Occuapational therapists, academic staff or clinicians from the academic hospitals, but the interviewing team also included other members of the faculty.

Each candidate had a slightly different interview, as interviewers asked each candidate a variety of different questions to gather information to determine:

i) if candidates seem unsuited to the profession.

ii) the long term potential of the candidate to succeed in and contribute to the profession.

iii) the accuracy of the biographical questionnaire (see 6.3).

(Faculty Documents: Guidelines for Interviewers August 1987 and May 1989)

After the interview, the interviewers reach consensus on a score out of ten. If consensus could not be reached the discrepant scores were all recorded. During the research period different rating scales have been used to achieve scores for the interviews. From 1982-1986 an eleven point scale was used, whereas from 1987-1989 a five point scale was used. In both cases a low score represented an unsuitable candidate and a high score a suitable candidate (see Appendix 2 for the guidelines on interviews issued to all interviewers).

As previously mentioned the score of this non-academic component of the admission criteria, represented 10% of the aggregate score calculated for admission purposes. There were 18 students in the sample for whom no interview score could be found.

■ Differences found between the 4 research groups

Table 12 **Variance between the 4 Groups for Pre-Admission Interview.**

Source	DF	F value	P value
Grouping	3	2.10	0.0488*
Error	214		
Total	217	2.10	

* p = 0.05

The above analysis revealed that there is a significant overall difference at the 0.05 level between the 4 Groups with an F value of 2.10 and p value of 0.0448 (see Table 12). Specific significant differences were found between Group A and BC (p = 0.0167) and Group A and D (p = 0.0407). The difference between Group A and E was not significant (p = 0.7855) nor was the difference between Group BC and D (p = 0.8074) or D and

E ($p = 0.1597$) (see Appendix 4, Table 1). The numbers, means and standard deviations for these 4 groups with respect to this parameter are in shown in Table 13.

Table 13 **Mean and Standard Deviation for Each Group for Pre-admission Interview in the total sample.**

Interview	Group A	Group BC	Group D	Group E
n	86	58	51	23
$\bar{x}$	7.941	7.206	7.294	7.934
sd	2.088	2.041	1.954	2.035

This was a somewhat surprising result. Firstly it was the policy of Allied Medical Admission Committee to only admit students who had achieved a score of 5 or more in their pre-admission interview (Faculty documents S85/234 and S86/1145). The mean scores for both groups A and E was 7.9, while that of group BC and D was 7.2 in the score range 5-10. This seemed to suggest that the interviewers agreed that all the students admitted were suitable and had long term potential. One would therefore, not have expected the pre-interview to have differentiated between these 4 groups. Secondly, the literature has not been able to produce any significant findings which supports a differentiation in the personality characteristics, interests, values and goals of Occupational therapists from the general population (Brollier 1970, Peacock and O'Shea 1984, Nordholm and Westbrook 1986, Benham 1988). As a result one would not have expected interviewers to be able to significantly differentiate between candidates in this way.

However this finding that the pre-admission interview is able to distinguish between students who succeed and those who do not is supported by Mitchell (1989), who agreed

that while there was no certainty as to the characteristics being evaluated in the interviews of medical students, it was found that interviewers were able to *"consistently distinguish between applicants with characteristics thought to be desirable and those considered to possess undesirable attributes"* p776.

When compared to Mitchell et al's (1987a) study, the mean score for the interview attained by medical students was 6.4 while that achieved by the OT students is 7.59. These authors also found a significantly lower score in the interview ratings between those who left the medical course ($\overline{x}$ = 6.0) and those who took leave of absence ($\overline{x}$ = 5.9) and those who failed ($\overline{x}$ = 7.1). However in the current study on admission of OT students, a distinction could only be drawn between those who passed first time round and those who failed but not between those who passed and those who withdrew. The finding that medical students who failed achieved higher interview scores than those who passed or left was not duplicated in the interview scores of OT students.

Differences found in the two time periods

The data, when analysed in the two time periods (see Table 14), showed a significant difference at the 0.05 level in the overall interview scores of all four groups, with an F value of 5.12 and a p value of 0.0247. The sample size, means and standard deviation for each group in the two time periods are listed in Tables 2 and 3 in Appendix 4.

Table 14 **Variance between the 2 time periods for pre-admission interview.**

Source	DF	F value	p value
Period	1	5.12	0.0247*
Group	3	2.59	0.0540
Period:Group	3	0.12	0.9512
Error	210		
Total	217		

* $p < 0.05$

In examining exactly where the differences occurred between the Groups within the two time periods (A_1-A_2, BC_1-BC_2, D_1-D_2, E_1-E_2), it was found that the mean score for Group A was 7.603 before 1987 and 8.484 after 1987 (see Table 4 in Appendix 4). This increase of 0.88 was very close to being significant ($p = 0.0504$). Group BC, D and E all scored marginally higher marks in the second time period but these scores were not significant ($p = 0.120$, $p = 0.1823$, $p = 0.7007$ respectively). There were however significant differences between Group BC in the first time period and Group A in the second ($p = 0.0012$), the difference being 1.691 marks. Group D in the first time period and Group A in the second are also significantly different ($p = 0.0035$) with Group A being 1.561 higher (see Appendix 4, table 4). A graphic representation of this increase in the mean scores of the pre-admission interview in the before and after 1987 is depicted in Figure 23.

This difference was attributed to the change in the scoring procedure that was introduced in 1987. The eleven point rating scale that had been used, was changed to a five point rating scale, which may have encouraged interviewers to rate candidates marginally higher since they had fewer options from which to choose.

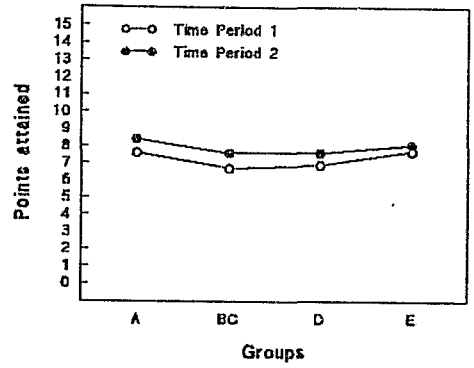


Figure 23 **Graphic representation of the increase in $\bar{x}$ scores achieved for the pre-admission interview between the two time periods.**

6.3 BIOGRAPHICAL QUESTIONNAIRE

The biographical questionnaire (BQ) is the second component of the non-academic selection criteria and was introduced into the selection procedure in 1984. It was designed by members of the Faculty of Medicine responsible for student selection and aimed to gather information of a non-academic nature about the candidate i.e. his interests and achievements outside the academic arena. This questionnaire was mailed to the candidate together with an invitation for the pre-admission interview. Each applicant was responsible for completing parts I and II. A referee or the school principal completed section III and returned it to the Faculty Secretariat. The questionnaires were then scored and a mark out of 14 was calculated in 1984 and 10 thereafter. Information was ratified during the pre-admission interview and marks adjusted as required (see 6.2 ii). Copies of the questionnaire and scoring procedure used from 1984-1986 and 1987-1988 can be found in Appendix 1.

The biographical questionnaire, like the pre-admission interview, contributed 10% to the admission aggregate score.

It was important to note that only 47 (19.9%) of the sample had a biographical questionnaire score. This was due to the biographical questionnaire only being introduced in 1984 and only being calculated for the OT admission in 1984 and 1985 due to the Department of Occupational Therapy's reservations about its value and concern about the very low scores prospective OT students attained. All candidates continued to complete the biographical questionnaire but they were not scored and were kept only for research and archival purposes. Where candidates had applied for other courses in the Medical School eg. Medicine, the scores of the biographical questionnaire were available. The low number of scores analysed would therefore make the results questionable. The same statistical analysis was undertaken on the data pertaining to the biographical questionnaire, as was undertaken on the pre-admission interview data.

- **Differences found between the four research groups**

Table 15 **Variance for the Biographical Questionnaire for Research Groups.**

Source	DF	F value	p value
Grouping	6	2.19	0.0641
Error	40		
Total	46		

In Appendix 4, table 5 records the numbers, means and standard deviations for each of the 4 research groups, while table 6 records the variance between these four groups.

The biographical questionnaire scores were not significantly different in the four research groups, with a F value of 2.19 and p value of 0.0641 (see Table 15). Thus it was not possible to distinguish any significant differences between the groups on this parameter. However it must be noted that the sample size was small and may therefore not be truly representative. Interestingly the two failing groups had the highest mean score for this variable, with Group D scoring the highest mean score (5.4272) and Group BC with a mean score of 5.1272. In the two passing groups Group E's mean score was 4.6250 while that of Group A was the lowest 4.4857. None of these differences were significant.

A score for Group E could not be estimated as there were only four students with a score in this group which is too few for a variance to be calculated.

- **Differences for the two time periods**

Table 16 **Variance of the Biographical Questionnaire Scores between Two Time Periods.**

Source	DF	F value	p value
Period	1	10.81	0.002*
Group	3	0.24	0.8650
Period: Group	2	1.79	0.1799
Error	40		
Total	46		

* $p < 0.05$

The analysis identified a significant decrease in score for the biographical questionnaire of the total sample in the two time periods, before and after 1987, with an F value of 10.81 and p value of 0.0021 (See Table 16). In Appendix 4, Table 7 records the numbers, means and standard deviations in each of the four research groups for the biographical questionnaire in the two time periods (before and after 1987), and table 8 the numbers, means and standard deviation for the 2 time periods.

In the examination of exactly where the differences occurred, it was found that the mean of Group A_2 after 1987 was 0.9 less than A_1 in the first time period, but that this was not significant ($p = 0.4836$) (see Table 9, Annexure 4). But a significant difference at the $p < 0.05$ level was found between Group BC before 1987 and BC after 1987 ($p = 0.0473$) and Group D before 1987 and D after 1987 ($p = 0.0113$). A significant difference was also found in group BC in the first time period and Group D_2 in the second time period ($p = 0.0222$). Figure 24 is a graphic representation of the differences between the scores attained on this parameter in the two time periods.

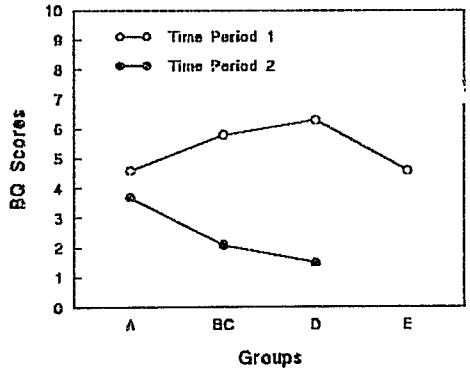


Figure 24 Comparison of the $\bar{x}$ scores attained for the Biographical Questionnaire in the two time periods.

It was assumed that this variation in the score attained between the two time periods was associated with the refining of the scoring procedures that were used to rate the biographical questionnaire, which was changed from 14 to 10 points.

When the two non-academic assessments are summed (see Table 17) the mean score out of 20 for each group is very similar (within a 0.4 range). It is interesting to note that the two groups that leave the course have the highest total score, Group D, being the Group that fail and leave, having the highest score of 12.7212 and Group E (students who pass and leave) the second highest scores. It is possible that students who fit in Group D are being benefitted by the non-academic assessment in the selection process.

Table 17 **Sum of the mean scores for two non-academic criteria (Interview and Biographical Questionnaire (BQ).**

	$\bar{x}$ Interview	$\bar{x}$ BQ scores	Total (20)
Group A	7.941	4.4857	12.4267
BC	7.206	5.1272	12.3332
D	7.294	5.4272	12.7212
E	7.934	4.6250	12.559

6.4 SUMMARY

There were two non-academic criteria included in the admission criteria. The pre-admission interview was a ten minute unstructured interview where interviewers aimed to determine the suitability and long term potential of the candidate. The interview

generated a maximum score of 10, which represented 10% of the aggregate score on which students were ranked for admission.

The biographical questionnaire which was mailed to the candidate collected information about the candidate's non-academic accomplishments. The scoring also generated a maximum of 10 points, or 10% of the aggregate score.

Thus together the non-academic criteria represented 20% of the aggregate score for admission.

The analysis of variance of the pre-admission interview scores indicated that it was possible to differentiate at the 0.05 level of significance between students that passed all courses on first attempt (Group A and E) and those that failed (Group BC and D). However although differences existed between those students who passed all subjects and completed the BSc OT course (Group A) and those that left (Group E) as well as those who failed subjects and completed the course and those that left, the differences were not statistically significant. Thus it was not possible to distinguish between the two passing groups (A and E) and the two failing groups (BC and D).

The analysis of variance of the biographical questionnaire determined that the biographical questionnaire scores could not be used to differentiate between the four research groups, although the very small number of candidates with biographical questionnaire scores may have contributed to this finding.

A significant difference between the scores for both the pre-admission interview and the BQ score was found between the two time periods before and after 1987. The pre-admission interview scores increased after 1987 while the BQ scores decreased. The reasons for these changes appear to be linked to changes in the scoring procedures that occurred in 1987.

On the basis of these findings the null hypothesis:

"There is no relationship between the pre-admission interview score, the score attained for the biographical questionnaire and eventual success or failure in the course" (see Chapter 4, 4.1)

was: i) accepted in terms of the biographical questionnaire scores.

ii) rejected in terms of the pre-admission interview scores.

CHAPTER 7: RESULTS OF THE ANALYTICAL STUDY OF THE ADMISSION CRITERIA: ACADEMIC CRITERION

7.1 INTRODUCTION

The academic rating represents the academic component of the admission criteria and was used to ensure that candidates admitted had the academic potential to succeed in the BSc OT course. The academic rating represented 80% of composite admission scores, while the two non-academic criteria contributed the other 20% of the score (see 6.2 and 6.3).

The academic rating was calculated from the matriculation aggregate, which is the average of the scores attained in the matriculation examination.

The analytical study to investigate who would be successful in the BSc OT course consisted of:

* a two way analysis of variance (ANOVA) of both the academic rating and matriculation aggregate to identify any significant difference between the four research groups, and before and after the curriculum change in 1987.

* an ANOVA study of four of the variables that contribute to the matriculation aggregate (Mathematics, Biology, Physical Science, First Language) to identify any differences between the four research groups and before and after the curriculum changes in 1987 (see 4.3).

* a study to compare the performance in first year Physics and Biology subjects of students admitted with Matriculation Biology and Physical Science to that of those who had not done these subjects in secondary school.

* a logistic regression study was undertaken to determine if any one of the matriculation variables studied would be more useful to predict success or failure in the BSc OT degree.

7.2 ACADEMIC RATING

As stated above the academic rating represented students' past academic performance. The academic rating for entry into the **selection process** was calculated from Standard 9 or results of the preliminary matriculation examination or from the June results of University courses. However, the academic rating **for admission** was calculated from the matriculation aggregate and November results of University students.

The academic rating was calculated as 80% of the matriculation aggregate for applicants with only secondary school experience (i.e. a matriculation aggregate of 82% would equal an academic rating of 65.5 (82/100 x 80)). Applicants with University experience were calculated as follows: applicants must have completed at least three first year subjects. Those who had only completed one or two subjects, are considered as having only a secondary level education. Up until 1987 the academic rating was calculated from the marks attained in the two best years (this included repeated years). One additional point

was added if the candidate had completed a Baccalaureate degree and two if an Honours degree had been completed (Faculty Document S88/684). For the purpose of this study only academic ratings calculated for matriculation aggregates were used. Where students had had University experience, this was not taken into account, and only their matriculation results were used.

The matriculation aggregate was calculated by summing the results of the 6 or 7 subjects written in the matriculation examination and dividing this by the number of subjects written.

Since the Academic rating is a product of the matriculation aggregate, exactly the same results were found on all statistical evaluations. Therefore only the results of the academic rating will be discussed.

■ **Differences found between the four research groups: Matriculation aggregate**

The results of the statistical analysis demonstrated that there was a significant difference between the four research groups, with $p<0.05$, for the variable academic rating, with a F value at 6.38 and $p = 0.0001$ (see Table 18).

Table 18 **Variance of Academic Rating by Groups.**

	DF	F value	p value
Groupings	7	6.38	0.0001 *
Error	223		
Total	230		

* $p<0.05$

Table 19 summarises the numbers, means and standard deviations for this parameter for the four research groups.

Table 19 **Mean and Standard Deviations scored for Academic Rating in each group.**

Academic Rating	A	BC	D	E
n	87	64	56	24
$\bar{x}$	53.678	50.031	48.607	53.166
sd	5.368	4.944	5.300	5.661

The Allied Medical Disciplines selection committee had set a cut-off point of 48 during the research period. This meant that only applicants with an academic rating of 48 or more were admitted. From Table 19 it is evident that Group D has a mean closest to this defined cut-off; the mean for Group A was 5.7 points above, Group BC 2.0 points above, Group D only 0.61 points above and Group E 5.2 above. This result seems to indicate that the cut-off point for eventual academic success, i.e. failing one or more subject but then completing the course, was too low during this research period. In examining where the difference was it was found that it was possible to significantly differentiate between the two passing (Group A and E) and the two failing groups (BC and D) but not between the two passing or failing groups (Group A and E and Group BC and D).

Table 10 in Annexure 4 indicated that the academic rating differentiated between Groups A, BC and D at 0.005 level, with the mean between Group A and BC being 3.65 less and the difference in mean between Group A and D being 5.7 less. It was also possible to differentiate between Group E, BC and D. Group E had a mean that was 3.1 points higher

than Group BC, which was significant at $p<0.05$ level, and a score of 4.6 higher than the mean from Group D which was significant at the <0.05 level with $p = 0.0007$. However it is not possible to differentiate between Group A and E ($p = 0.4930$) nor between Group BC and D ($p = 0.1471$).

■ Differences between the two time periods for academic rating

Results showed that there had been a significant difference at the $p<0.05$ level for academic rating in the two time periods, i.e. before 1987 and after 1987, with a F value of 4.20 and a p value of 0.0417 (see Table 20) with the second time period demonstrating an increase in the mean of 1.384 (see Table 21).

Table 20 Analysis of variance of Academic rating by group and time period.

Source	DF	F value	p value
Period	1	4.20	0.0417*
Group	3	13.41	0.0001*
Period:Group	3	0.13	0.9452
Error	223		
Total	230		

*$p<0.05$

Table 21 **Means and Standard Deviations for Academic Rating for two time periods.**

Academic Rating	1	2
n	131	100
$\bar{x}$	50.786	52.170
sd	5.801	5.412

Table 22 **Means and Standard Deviations for Academic Rating for each Group in each time period.**

Academic Ratings	A1	A2	BC1	BC2	D1	D2	E1	E2
n	54	33	35	29	31	25	11	13
$\bar{x}$	52.907	54.939	49.542	50.620	48.032	49.320	52.090	54.076
sd	5.401	5.147	5.495	4.203	5.443	5.137	6.024	5.407

Table 22 indicates an increase in the mean of each group in the two time periods. However it is interesting to note that the increase in Group BC and D, which were the groups that fail, is only 1.1 and 1.3 respectively while the increase in Groups A and E is greater (2 points).

Figure 25 is a graphical representation of the increase in the mean scores of each group in the time period before and after 1989.

Since there was no documented change in the minimum academic rating required for admission, it was presumed that this increase was due to an increase in the matriculation aggregate of the candidates entering the selection pool.

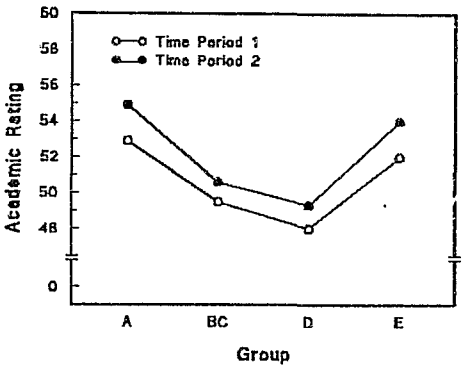


Figure 25 **Comparison of mean scores for Academic Rating attained in the two time periods.**

On the basis of this result the following null hypothesis (see 4.1) was rejected: "There is no relationship between the academic rating or matriculation aggregate and eventual success or failure in the course".

7.3 MATRICULATION MATHEMATICS

This was the only matriculation subject that was compulsory for admission to the BSc OT course. The minimum requirement for this course was a 50% pass at the Higher Grade and a 60% at the Standard Grade. The minimum ranges noted in Table 24 indicate that students were admitted with less than the minimum mathematics requirement.

■ Differences between the four groups: Matriculation mathematics

The results of the statistical analysis of this variable found that there was a significant difference between the four research groups at the $p < 0.05$ level. The F value was 3.77 and the $p = 0.0007$ (see Table 23).

Table 23 **Variance of Mathematics in the four groups.**

Source	DF	F value	p value
Grouping	7	3.77	0.0007*
Error	221		
Total	228	3.77	0.0007

* $p < 0.05$

Table 24 below and Table 11 in Annexure 4 were used to identify exactly the difference between the four research groups.

Table 24 **Mean and Standard Deviations of Mathematics in the four groups.**

Maths	A	BC	D	E
n	86	63	56	24
$\bar{x}$	64.182	60.066	54.053	62.237
sd	12.784	10.463	10.899	11.564
min. range	33.000	37.500	33.700	45.000
max. range	92.00	85.000	80.000	82.000

There was a difference of 1.9 percentage points between the two passing groups with Group A scoring the highest mean of 64.182 but the difference between Group A and E

was not significant (p=0.3966). However a significant difference was found between the two passing Groups (A+E) and the two failing groups (BC+D). The difference between Group A, BC and D was significant at the $p<0.05$, while differences between Groups E and D was significant at $p<0.05$ level (p=0.0082) (see Table 11, Appendix 4).

- **Differences for matriculation mathematics between the two time periods (before and after 1987)**

Table 25 Variance of Mathematics for Sample and Groups in both time periods.

Source	DF	F value	p value
Period	1	0.88	0.3480
Group	3	8.15	0.0001
Period:Group	3	0.25	0.8627
Error	221		
Total	228		

Table 26 Means and Standard Deviations for Mathematics in two time periods.

Maths	1	2
n	130	99
$\bar{x}$	59.854	61.244
sd	12.499	11.674

While an increase of only 1.8% points in the mean score for mathematics was noted in the whole sample after 1987 (see Table 26), it is interesting to note that only Groups A, D and E had an increase in their mean score in the second time period whereas the mean

score for Group BC dropped (see Table 27). This was not significant (see Table 25) $p=0.3480$ and $p=0.8627$.

Table 27 **Means and Standard Deviations between the Groups in the two time. periods for mathematics.**

Maths	A1	A2	BC1	BC2	D1	D2	E1	E2
n	53	33	35	28	31	25	11	13
$\overline{x}$	63.201	65.757	60.242	59.846	53.141	55.972	61.409	62.938
sd	12.689	12.973	11.426	9.323	11.331	10.349	12.113	11.527

7.4 MATRICULATION BIOLOGY

This was a recommended subject for the BSc OT course. 210 students in the sample were admitted with matriculation biology, which represented 88.98% of the sample.

■ Differences between the four groups: matriculation biology

From Table 28 it can be seen that the analysis of variance of matriculation biology found a significant difference between the four groups at the $p<0.05$ level, with a F value = 5.07 and a $p = 0.0001$. This implied that it was possible to differentiate between the four groups on the basis of their matriculation biology marks.

Table 28 Variance for Biology in the four Research Groups.

Source	DF	F value	p value
Grouping	7	5.07	0.0001*
Error	202		
Total	209		

* $p < 0.05$

Table 29 indicates that Group E scored the highest mean of 71.521 with Group D the lowest at 61.8, a difference of 9.72% points. Interestingly this is almost the same percentage point difference that was found between the highest and lowest mean score for mathematics (10.12%, see 7.3.1) but in the case of mathematics Group A scored the highest mean.

Table 29 Means and Standard Deviations for Biology in the four groups.

Biology	A	BC	D	E
n	76	56	55	23
$\bar{x}$	70.236	65.196	61.800	71.521
sd	9.156	8.770	9.428	11.118
range: min	44.000	44.00	43.00	49.00
range: max	96.00	86.00	83.00	92.00

The two passing groups (Group A and E) had a difference of 1.285% points in their mean scores, which was not significant $p = 0.6298$ (see Table 12 in Annexure 4). The two failing groups (Group BC and D) had a slightly higher difference between their mean scores of 3.396% points where Group D was lower, this difference however was

significant p = 0.0500. However it was also possible to significantly distinguish between the passing (Group A and E) and failing groups (Group BC and D).

The difference between Group E, which has the highest mean score, and Group BC and D was significant at $p<0.05$ level with p = 0.0001. The difference between Group A, BC and D was also significant $p<0.05$ with the difference between Groups A and B p = 0.0021 and Groups A and D p = 0.0001.

Although no minimum mark has been suggested for matriculation biology it was apparent from these results that a mark of 70 in matriculation biology seemed necessary to pass on the first attempt.

Although no significant difference was found between the four research groups in the two time periods only the two passing groups showed an increase in the mean after 1987, Group A 1.43% points and Group E 0.30%. Both failing groups (BC and D) had a slightly decreased score after 1987, with Group B 1.16% points less and Group D 3.3% points less (see Table 30).

Table 30 **Means and Standard Deviations for Biology in the four groups in the two time periods.**

Biology	A1	A2	B1	BC2	D1	D2	E1	E2
n	48	28	29	27	30	25	11	12
$\bar{x}$	69.708	71.142	65.758	64.592	63.300	60.00	71.363	71.666
sd	8.989	9.532	10.301	6.907	10.296	8.108	13.980	8.337

- **Differences for biology found between the two time periods (before and after 1987)**

As with the statistical analysis of mathematics, the analysis of biology showed that the scores obtained remained relatively constant as no significant difference could be found between the two time periods, although the biology mean score dropped by 1% point in the second time period (See Table 31 and 32).

Table 31 **Variance for Biology for sample and the four research groups in the two time periods.**

Source	DF	F value	p value
Period	1	0.22	0.6362
Group	3	11.46	0.0001
Period:Group	3	0.69	0.5620
Error	202		
Total	209		

Table 32 **Means and Standard Deviations for Biology in the two time periods.**

Biology	1	2
n	118	92
$\bar{x}$	67.262	66.260
sd	10.462	9.440

- **Differences in performance of sample admitted with and without matriculation biology**

From Table 33 it can be noted that all four research groups had more students admitted with matriculation biology than without this subject. Only Group D had no subjects that were admitted with Biology.

The Pearson's Chi-square test was used to establish if there was any difference between those that had matriculation biology and those that did not, in the four research groups.

From the x^2 value of 8.457 shown in Table 34 and the P value ($p=0.037$) which is significant, students admitted with matriculation Biology performed significantly better than those admitted without matriculation Biology.

Table 33 **Number and % in each group who did/did not have Biology.**

		Had Biology	No Biology	Total
Group A	n	78	11	89
	%	33	4.6	
Group BC	n	56	9	65
	%	23.8	3.8	
Group D	n	57	0	57
	%	24	0	
Group E	n	23	2	25
	%	9.8	0.8	
Total	n	214	22	236
	%	90.6	9.3	

Table 34 Chi-square: Students who do and do not have biology.

	DF	x^2 Value	p value
Chi-square	3	8.457	0.037*

* $p<0.05$

7.5 MATRICULATION PHYSICAL SCIENCE

Matriculation physical science, like biology, is only a recommended subject for admission to the BSc OT course. 172 students were admitted with this subject which represented 72.8% of the sample. This was 50 less than those admitted with matriculation biology (see 7.4).

Differences between the four groups: matriculation physical science

The statistical analysis also demonstrated that a statistical difference could be found between the four research groups for this variable at the $p<0.05$ level, with a F value of 3.04 and $p = 0.0049$ (see Table 35).

Table 35 Analysis of Variance of Physical Science in the Four Research Groups.

Source	DF	F value	p value
Grouping	3	3.04	0.0049*
Error	164		
Total	167		

* $p<0.05$

Table 36 **Means and Standard Deviations for Physical Science in the four Groups.**

Physical Science	A	BC	D	E
n	68	47	34	19
$\bar{x}$	63.750	57.063	57.952	65.894
sd	10.484	9.314	10.569	10.655
min. mark	40.00	42.00	33.00	43.00
max.mark	83.00	78.00	79.00	86.00

From Table 36 it can be seen that Group E attained the highest mean score of 65.894 which was 2.14% points higher than Group A which attained the next highest mean score. The difference was not significant ($p = 0.4700$ see Table 13 in Annexure 4). Thus it is not possible to differentiate between the two passing groups. It is also not possible to differentiate between the two failing groups as they had very similar mean scores, and $p=0.6287$. A significant difference was however found between Group BC and Groups A and E (Group BC to A $p = 0.0004$, $p<0.05$, Group BC to E $p = 0.0016$) $p<0.05$ but no significant difference could be found between group D and either of the 2 passing groups.

Although no minimum mark has been suggested for admission for physical science, it is apparent from these results that a score of at least 63 was required to pass on first attempt in the BSc OT course.

- **Differences for matriculation physical science between the four groups in the two time periods (before and after 1987)**

Results of the statistical analysis revealed that like matriculation mathematics and biology, the physical science marks remained constant throughout the research period, with the mean dropping 0.187% after 1987 ($p = 0.7284$) (see Tables 37 and 38).

Table 37 Variance of Physical Science in the sample and four Research Groups in the two time periods.

Source	DF	F value	p value
Period	1	0.12	0.7284
Group	3	6.78	0.0002
Period:Group	3	0.72	0.5434
Error	160		
Total	167		

Table 38 Means and Standard Deviations of Physical Science in the two time periods.

Physical Science	Time Period 1	Time Period 2
n	93	75
$\bar{x}$	61.032	60.845
sd	10.483	11.020

From Table 39 it can be seen that the two passing groups increased their mean scores after 1987, Group A by 2.1% points to 65, and Group E by only 0.03% to 65.9. The

mean scores of both the failing groups dropped after 1987. Group BC by 3.59% points to 55. Group D by 1% point to 57.4%. These differences were not significant.

Table 39 **Means and Standard Deviations of Physical Science in the four research groups in the two time periods.**

Science	A1	A2	BC1	BC2	D1	D2	E1	E2
n	40	28	27	20	18	16	8	11
$\bar{x}$	62.875	65.000	58.592	55.000	58.444	57.400	65.875	65.90.)
sd	10.390	10.680	10.356	7.448	9.635	11.829	11.519	10.558

Differences in performance of students admitted with and without matriculation physical science

As only 172 students were admitted with physical science, the Pearson's Chi-square test was used to test if students admitted with Physical Science performed differently to those without this matriculation subject.

Table 40 **Number and % in each group who did/did not have physical science.**

		With Physical Science	Without Physical Science	Total
Group A	n	70	19	89
	%	29.6	8	38
Group BC	n	47	18	65
	%	19.9	7.6	27.5
Group D	n	36	21	57
	%	15.3	8.9	24.2
Group E	n	19	6	25
	%	8.1	2.5	10.6
Total	n	172	64	236
	%	72.9	27	100.0

From Table 40 all groups had more subjects who were admitted with matriculation physical science. However Group D had the greatest number of students admitted without physical science.

Table 41 Chi-square: Students who do and do not have physical science.

	DF	Value	p value
Chi-square	3	4.360	0.225

The Chi-square value of 4.306 and a $p<0.225$ is not significant (see Table 41). It therefore seemed that students that were admitted with matriculation physical science did not perform significantly differently from those admitted without this subject.

7.6 FIRST LANGUAGE

In the sample, 227 students had English as their first language. This represents 96.1% of the sample. The remaining 9 students (3.8%) had the following listed as their first language:

German	4
African languages	4
Afrikaans	1

As this university presents its course in English it would have been more useful to collect English marks rather than first language marks in order to determine if command of English influenced performance in the BSc OT course. This was a problem in the methodology that was only realised after the statistical analyses had been completed.

Differences found between the four groups: first language

As with the other 3 matriculation variables, the statistical analysis demonstrated that there was a significant difference between the 4 research groups for first language at the 0.005 level, with F = 9.44 and p = 0.0024 (see Table 42).

Table 42 **Variance of First Language by Group.**

Source	DF	F value	p value
Grouping	3	3.41	0.0018*
Error	224		
Total	227		

* $p < 0.05$

Table 43 **Means and Standard Deviations for the first language for all four research groups.**

First Language	A	BC	D	E
n	86	63	55	24
$\bar{x}$	67.790	64.619	64.527	69.250
sd	8.933	8.061	7.719	9.123
min.	47.00	46.00	41.00	55.00
max.	91.00	90.00	78.00	90.00

Table 43 demonstrates that Group E scored the highest mean score of 69.255 followed by Group A with 1.46% points less and with Group BC and D having very similar scores. The analysis of variance determined that it was not possible to distinguish between the two passing groups (Group A and E) and that the difference in the mean scores was not

significant (p = 0.6514) see Table 14 in Annexure 4. It was also not possible to distinguish between the 2 failing groups (Group BC and D) (p = 0.8514). However a significant difference was found between the passing and failing groups at the 0.05 level of significance. Group A was significantly different to Group BC (p = 0.0187) and Group D (p = 0.0139). Group E was also found to be significantly different from both Group BC (p = 0.0374) and Group E (p = 0.0292).

These results seem to indicate that a score of at least 67 was required in order to pass on first attempt in the BSc OT course. While this may be a useful guideline for English speakers, it would not be of value if the first language is not English.

- **Difference in the two time periods (before and after 1987)**

The statistical analysis revealed that during the research the first language scores were not as constant as those for mathematics, biology and physical science. A statistically significant difference was found at the $p < 0.05$ level between the two time periods where the F value was 9.44 and the p value 0.0024 (see Table 44). This represents an increase in the mean score after 1987 of 3.75% to 68.404 (see Table 45).

Table 44 **Variance of First Language in the sample and for the four research groups in the two time periods.**

Source	DF	F value	p value
Period	1	9.44	0.0024*
Group	3	3.64	0.0136*
Period:Group	3	0.35	0.7911
Error	220		
Total	227		

$p < 0.05$

Table 45 **Means and Standard Deviations for first language for the two time periods.**

First Language	Time Period 1	Time Period 2
n	129	99
$\bar{x}$	64.651	68.404
sd	8.507	8.233

Table 46 **Means and Standard Deviations for first language for the four groups in two time periods.**

First Language	A1	A2	BC1	BC2	D1	D2	E1	E2
n	53	33	35	28	30	25	11	13
$\bar{x}$	66.377	70.060	62.228	67.607	63.500	65.760	67.181	71.000
sd	8.669	9.013	8.260	6.827	7.955	7.395	8.518	9.582

Table 46 revealed that mean scores increased after 1987 in all groups, with the greatest increase in Group BC of 5.38% points and the least increase in Group D of 2.26% points. A significant difference was demonstrated at the $p < 0.05$ level between Group A before

and after 1987 (p = 0.0459) and after between Group BC before and after 1987 (p = 0.0110) see Table 15 in Annexure 4. Although both Groups D and E demonstrated an increase in the mean score after 1987, there was no significant difference between the before and after 1987 scores. Group D p = 0.3143 and Group E p = 0.2612.

Figure 26 is a graphical representation in the difference in the mean scores of each group before and after 1987.

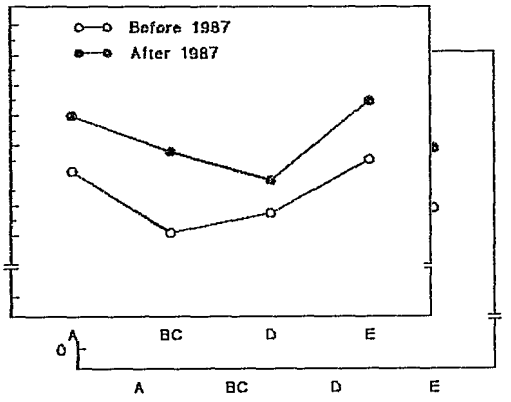


Figure 26 **Difference between the mean marks attained for First Language in the two time periods.**

There is no obvious reason for this change. Two suggestions have been offered to explain this difference: either there was a change in the teaching policy, process or examining procedure used for this variable which improved the standard of matriculation English or the students who applied after 1987 were just better at their first language.

It was noted that the increase in mean marks in this parameter, coincided with the increase noted in the matriculation rating, which is calculated from the matriculation aggregate, a product of all the marks attained in subjects written in the matriculation examination. In

the current study only an increase in the mean scores for first language was demonstrated in the research period, while the mean scores for mathematics, biology and physical science remained consistent.

On the basis of the above results the following null hypothesis established in 4.1 are.

Rejected:

"There was no difference between the matriculation rating and matriculation aggregate and eventual success or failure in the course."

"There was no difference between the individual matriculation marks for mathematics, physical science, biology and the candidates' first language and eventual success or failure in the course."

"There was no difference between students who were admitted with matriculation biology and those who are admitted without this subject and their eventual success or failure in the course."

"The matriculation aggregate is not a good predictor of success or failure in the course."

Accepted:

There was no difference between students who were admitted with matriculation physical science and those admitted without this subject and their eventual success or failure in the course.

7.7 ESTABLISHING THE BEST MATRICULATION VARIABLE TO PREDICT SUCCESS OR FAILURE IN THE BSc OT COURSE

Since all of the matriculation variables have been found to significantly differentiate between the four research groups, a logistic regression study was therefore undertaken to:

i) ascertain if any one of the matriculation variables was a more reliable predictor of success in the BSc OT, when all 5 variables were tested.

ii) determine the cut-off point for each variable.

As described in 4.6 the logistic regression study consisted of calculating the odds ratio for the 5 matriculation variables; establishing the p values for the cut-off points and finally checking the relative risk to determine if students were correctly classified as either passing or failing.

The median values of each of the 5 matriculation variables were used to establish the cut-off points between the students who were likely to pass all subjects on first attempt and

those likely to fail. Those who were likely to pass were given a "0" code and those likely to fail a "1" code. Table 47 lists the cut-off points and the code that was used.

Table 47 Cut-off points and codes for the 5 matriculation variables.

	Good	Code	Not good	Code
Matriculation aggregate	> 64	0	≤ 64	1
Mathematics	> 60	0	≤ 60	1
Physical Science	> 61	0	≤ 61	1
Biology	> 66	0	≤ 66	1
First Language	> 65	0	≤ 65	1

Table 48 describes the regression co-efficients and odds ratios that were calculated to use in the logical regression equations to determine the cut-off value for p (Munro and Page 1986).

Table 48 Outcomes of the Logistic Regression Study.

Predictor Variable	Regression coefficient	Odds ratio	95% confidence interval OR
Matriculation aggregate	$\beta_1 = 1.651$	5.211	(2.20 ; 12.40)
Matriculation Mathematics	$\beta_2 = 0.113$	1.120	(0.58 ; 2.15)
Matriculation Physical Science	$\beta_3 = 0.284$	1.329	(0.64 ; 2.76)
Matriculation Biology	$\beta_4 = 0.307$	1.360	(0.70 ; 2.65)
Matriculation First Language	$\beta_5 = 0.654$	0.520	(0.26 ; 1.06)

The results of this study were disappointing. When the cut-off value for $p = 0.41$ was used, the model only correctly classified 79% of the students that failed, while it only correctly classified 62% of the students that passed. When this cut-off for p was used

(p=0.41) then y* = -0.36 which meant that a student was classified that she would fail if her y value exceeds -0.36. If a cut-off was chosen so that the specificity increased, most of the fail students were wrongly classified. Eg. when the cut-off for p was -0.36 for the calculated regression value y was used, it resulted in a large proportion of pass students being falsely classified as fail students (37%). Thus with this cut-off (p = -0.36) sensitivity was high but specificity was low resulting in a lot of good students being lost.

Of the 6 matriculation variables, only matriculation aggregate was isolated as being useful to determine success or failing in the BSc OT degree. It can be seen in table 48 that the odds ratio for matriculation aggregate is 5.211 which implies that subjects admitted with a matriculation aggregate of less than 64% have 5.211 more chance of failing than a subject with a matriculation aggregate of 64% or more.

Therefore this model did not provide any helpful information that could be used at the time of admission. However although the analysis of variance suggests some guidelines for what is most likely to ensure success in the BSc OT course, the logistic regression study that defines absolute cut-off values for each variable, may lead to good students being lost from the admission pool.

On the basis of the above result the following null hypothesis established is 4.1 is accepted:

"None of the matriculation subjects that contribute to the matriculation aggregate is a good predictor of success or failure in the course."

7.8 SUMMARY

In the analytic study of the academic criteria used for admission it was found that:

1. Both the matriculation aggregate, and the academic rating, were found to significantly distinguish between the four research groups ($p < 0.005$). A significant difference could only be found between the passing and failing groups but not the two passing groups (Group A and E). This parameter also demonstrated a significant variation in the 2 time periods before and after 1987 with an increase in the mean scored achieved in the total sample in the second time period ($p < 0.05$). A significant difference was not found between the four research groups in the two time periods.

2. The four research groups into which the sample was divided, were also found to be significantly different on the matriculation mathematics variable $p < 0.05$. Group A's mean scores were significantly different to Group BC and D mean scores but Group E's scores were not significantly different from those of Group A, BC and D. No significant difference was found for this variable between the two time periods either for the total sample ($p = 0.3480$) or for the four Groups ($p = 0.8627$).

3. Only 210 students were admitted with matriculation biology. Again a significant difference was found between the four research groups ($p < 0.05$). However as with mathematics, no significant difference was found in the total sample between

the 2 time periods ($p = 0.6362$) or between the groups in the two time periods ($p = 0.5620$).

A significant difference was found in the performance of those subjects that had biology as a matriculation subject and those that did not ($p<0.05$).

4. 172 students were admitted with matriculation physical science. Again a significant difference was found between the four groups ($p<0.0005$). It is not possible to distinguish between the two passing groups A and E but it is possible to distinguish significantly between the passing (A and E) and failing (BC and D) groups. Again no significant difference was found in the total sample in the two time periods ($p = 0.7284$) or between the four groups in the second time period ($p = 0.5434$).

The Pearson's Chi-square test was used to determine if students who had matriculation physical science performed differently from those that did not. In this case no significant difference could be found ($p = 0.225$) between the performance of students admitted with matriculation physical science and those admitted without this subject.

5. 227 students listed English as their first language while 8 listed either German, Afrikaans or an African Language. A significant difference was found between all four groups with this variable ($p<0.05$). Again the significant difference was found between the passing (A and E) and failing groups (BC and D) but not between the two passing and failing groups. A significant difference was also

found in the two time periods for the total sample ($p<0.05$) but no significant difference could be found in the four groups in the two time periods where $p = 0.7911$.

To summarise the results obtained a mean mark profile was drawn for each of the four groups. See Figures 27 and 28.

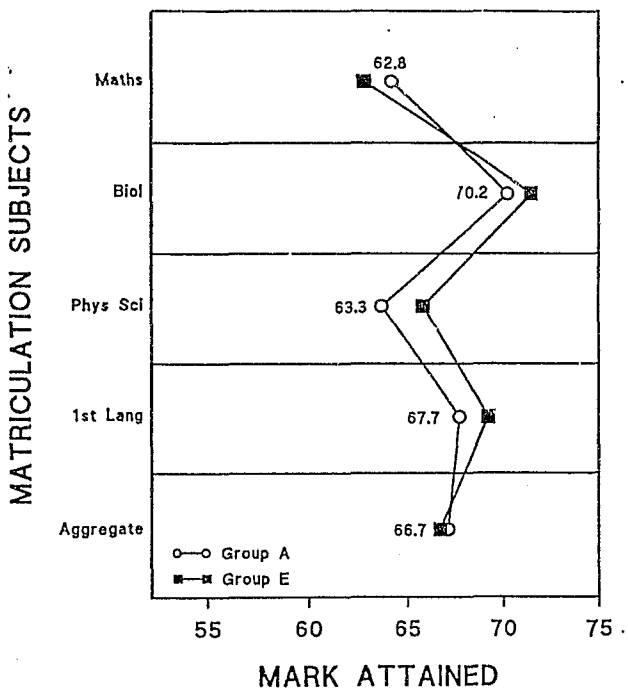


Figure 27 Mark profile for the passing groups (A and E) from subject mean scores.

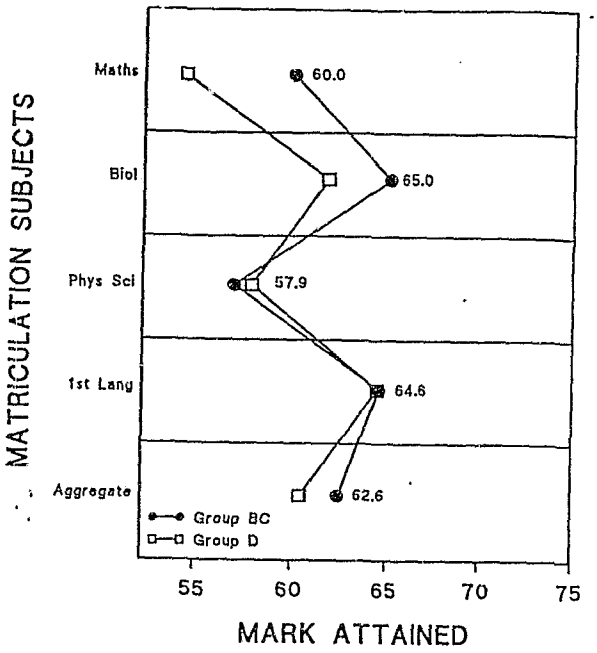


Figure 28 Mark profile for the failing groups (BC and D) from the subject mean scores.

From Figure 27 the profile for passing is:

mathematics	62.8%
biology	70.23%
physical science	63.7%
first language	67.7%
matriculation aggregate	66.7%

while the following profile (see Figure 28) for those that failed was:

mathematics	60.1
biology	65.1

physical science	57.9
first language	64.6
matriculation aggregate	62.6

In examining the difference between those that passed and completed the course (Group A) and those that left the course (Group B) some variations were noted:

> Group A scored slightly higher means than Group E, but not significantly higher mean marks in mathematics and matriculation aggregate, while Group E scored slightly higher mean marks than Group A in biology, physical science and first language (see Figure 26) but again not significant.

In examining the differences between those who fail and complete the course (Group BC) and those that fail and drop out (Group D) it was noted (see Table 27) that Group BC scored higher means in mathematics (5.66%) which was significant $p=0.0115$, Biology (3.38%) where $p = 0.0500$ and matriculation aggregate (2.08%) which was not significant.

Group BC and D achieved equal mean scores for first language (64.5%).

Group D had a marginally higher mean score for physical science of 0.8% which was not significant.

The model used in the logistic regression study failed to reliably establish cut-off values to predict success or failure in this sample. The cut-off point for p value of 0.41 and y* of -0.36 was sensitive enough but the specificity was low resulting in students being incorrectly classified.

The matriculation aggregate was the only one of the five matriculation variables that could accurately predict success and failure. A mark on this parameter of $< 64\%$ increase the chances of failure. However it suggests that establishing cut-off points as indicated in the mark profiles for Groups A and E would exclude a large number of good students from the admission pool.

CHAPTER 8: DISCUSSION

8.1 INTRODUCTION

From the review of the literature the essence of the selection of Occupational Therapy students was contained in the following statements:

The purpose of the selection process is to try and identify from the pool of applicants those individuals who:

* have the **academic ability** and **aptitudes** to succeed, by meeting the objectives of the curriculum, and to subsequently perform well, fulfilling the role and functions of an occupational therapist and achieving job satisfaction.

* have sufficient **diversity of background** to provide opportunities for a wide variety of clients from different communities, to enable them to cope with their life roles at home, at work and in leisure.

* have an **awareness** of the education and practice requirements of the profession. (Posthuma and Sommerfreund 1985, Brindle 1987, Coombes and Bennet 1983).

The criteria used in this process should be pre-determined, not discriminatory in terms of race, creed, colour, sex or natural origin and should be fair, not unfairly showing favour

to one candidate over another (American OT Association 1973, Document of Medical Faculty; Admission of Medical Students 1980-1989).

Selection of students to any university course does not take place in a vacuum and is subject to influences inherent in the university such as place availability, staffing, finances, facilities, selection and education policies. It is also subject to pressures outside the university, such as school education and standards, changes in the Health Care System and developments in Occupational Therapy technology, as well as sociopolitical and socioeconomic factors. All these factors influence the "market trends" of application and selection.

Departments who admit students for a professional education, have to select students in keeping with the prescribed university policy and practices; however such departments also have a responsibility to the profession and need to be constantly aware of the market forces, needs, developments and technologies which might influence not only selection but also curriculum content and teaching methods.

So while it may be the responsibility of the University or Faculty to define selection policies, practices and criteria that are fair, ensure an adequate pass rate and class diversity, it is the Department's responsibility to ensure that all these are relevant and realistic to the profession's manpower requirements and development.

The Medical Faculty (now the Faculty of Health Sciences) of the University of the Witwatersrand, as previously mentioned, has a well established selection procedure and

policy (see Chapter 3). This procedure has been well documented and studies by Mitchell et al (1987c, 1987a, 1988 and 1990) indicated that the selection procedure and policy was functioning efficiently with respect to the medical students and that: *"The distribution of races and genders are more acceptable, the range of academic skills is broader, attributes other than academic performance are being taken into account and pass rates are improved" (p319).*

However, in spite of all candidates being subject to the same selection policy and procedure, this finding is not true for the Occupational Therapy students selected between 1982 and 1987.

8.2 CLASS DIVERSITY

The results of the demographic study determined that the candidates admitted in each research year were very homogeneous and showed little diversity. Most candidates admitted were between 17 and 19 years, with a mean age of 18.2. Only 13 candidates were mature students (older than 24) (see 5.3). 97.8% of the sample were female with only 5 males being admitted in the research period (see 5.3, Gender). 81.4% of the sample were admitted straight from secondary school and only 40 (16.9%) students had post-matriculation experience (see 5.3, Previous experience of students).

This finding is similar to the results obtained by Holmstrom (1975), Madigan (1985), Wyrick and Stern (1987), Nordholm and Westbrook (1987) and Delin (1991). All these studies found that Occupational Therapy students were predominantly female, below the

age of 22 and mostly admitted directly from secondary school. Only the study by Coombes and Bennet (1983) had a high number of mature students due to 25% of places being reserved for these candidates.

Concern has been expressed from many quarters about the low percentage of males in the occupational therapy profession (Bell and Bell 1972, Jantzen 1972, Mathewson 1975, Yerxa 1975). While the low number of male students was in keeping with the international trend towards Occupational Therapy being a female dominated profession (Bell and Bell 1972, Matthewson 1975, Yerxa 1975), the 2.1% admission of male students to the University of the Witwatersrand OT course was considerably lower than the 4-12.6% reported by Holstrom (1975), Madigan (1985), Wyrick and Stern (1987), Lyons (1991) and Delin (1991) found at Australian and American Universities.

In a review of attitudes and trends of male occupational therapists, Christiansen (1970) found that 64.7% of her sample felt that the predominance of women was a deterrent to men joining the profession. However, only 21% viewed it as the most significant deterrent; lack of knowledge of the profession, the poor salaries and limited promotional opportunities were felt to be more significant deterrents.

While racial group was not a variable that was specifically explored in this dissertation, it was noted that the majority of students were from the European group with Indians, Coloureds and Africans poorly represented in the sample, in spite of active recruitment in the secondary schools. This was contrary to the finding by Mitchell (1989) who found that the class diversity was improved in 1989 as compared to 1977. A possible reason for

this was that Occupational Therapy is not a "high profile profession" and the limited number of occupational therapists and occupational therapy services within the Black, Indian and Coloured communities may have resulted in members of these communities being ignorant about the scope and purpose of the profession, resulting in Occupational Therapy being a little known choice of career for school leavers. This suggests a need for aggressive marketing of the profession in these communities.

The demographic characteristics of the candidates in the applicant pool were not analysed, however, it is assumed that the demographic characteristics of those selected was representative of those who applied. Limited class diversity ultimately influences the characteristics of the profession at large, and may contribute to the instability in the work force and the high turnover of staff ± two years after qualification (de Luca and de Witt 1993).

8.3 FAILURE RATE

During the research period the failure rate was 51% i.e. 51% of the sample failed one or more subjects on first attempt. This is considered to be unacceptably high (see 5.4, Failure rate) when compared to the 20% failure rate expected for medical students in 1989 (Mitchell 1989). Most failures occurred in the first year (54%), with failures in the second year also high (36%). Interestingly the students in the sample who failed at first attempt but eventually completed the course (Group BC) were marginally younger than those students who passed (Group A and E) (see Table 4). While this represents only a few months, it may suggest that these students were not mature enough to cope with the transition from secondary school to University. The two failing groups (B and C) each had

the highest number of students who had not listed Occupational Therapy as their first choice (see Table 8). While no research project, to date, has studied the influence of choice on a candidate's performance in an Occupational Therapy course, Holmstrom (1975) alluded to the idea that choice influences commitment to and motivation to succeed in the education programme.

8.4 ATTRITION RATE

The investigation of the attrition rate revealed an attrition rate of 35% of the total sample. 70% of those who left the degree did so due to failure, but 30% left in spite of having passed all their subjects. This figure was higher than the attrition rate in the studies by Brindle (1987) on Occupational Therapy students, and Mitchell and Haupt who studied medical students (1990) and found an attrition rate of 15-16%. Besides academic failure the reasons for dropping out of the Occupational Therapy course in the Brindle study included disenchantment with occupational therapy, personal and family problems and sickness. The reasons for dropping out were not explored in this study.

Only two distinguishing characteristics between the group of students who passed on first attempt and dropped out of the degree (Group E) and the other research groups were identified. The mean age of group E was the highest 18.9 as compared to 18.2 or less and Group E also had the highest number of students who listed Occupational Therapy as their second or third choice (32%). While this figure was not low when compared to the 42% admitted to Lincoln Occupational Therapy College (Australia) where occupational therapy was the second or third choice (Mocellin and Bryce 1988), it is possible that a

combination of age and choice may have contributed to this drop out rate but the exact relationship is very unclear.

8.5 ADMISSION CRITERIA

8.5.1 NON-ACADEMIC CRITERIA

The two non-academic criteria used in selecting Occupational Therapy students are the pre-admission interview and the Biographical questionnaire (see 3.2 and 6.1). Although the pre-admission interview was used throughout the research period the biographical questionnaire was introduced in 1984 and was only included in the selection of Occupational Therapy students for two years (1984 and 1985). The results of the analytical study determined that only the pre-admission interview was found to significantly differentiate between the students who passed and failed in the course ($p < 0.05$), while the biographical questionnaire was not able to do this (see 6.2 and 6.3).

In spite of these results there is a great uncertainty about what characteristics should be and are being looked for in both variables and how they are being measured and scored.

- Pre-admission interview

One of the purposes of the pre-admission interview in this research period, was for the interviewer to decide whether the candidate was suited to the profession or not.

Concha (1989) found that interviewers were not able to agree on what kind of attributes a person needed to be an Occupational Therapist and were therefore not able to make a consistent decision about this. The literature supports this view and research has failed to produce a profile of personality characteristics, attributes or values that could be used as a guideline (Brollier 1970, Westbrook et al 1976, Clark and White 1983, Brown 1989).

The Occupational Therapy Department has continued to request that applicants be interviewed, but that the score not be used in the admission aggregate but be collected for research purposes. This decision was based on the poor inter-rater reliability found between interviewers in the study by Concha (1987).

In spite of all the criticisms of the pre-admission interview the results of this dissertation have determined that the pre-admission interview significantly differentiates between the students that pass, Group A and E and those that fail ($p<0.05$) (see Table 13). Contrary to the findings of Mitchell et al 1987) and Posthuma and Sommerfreund (1985) the pre-admission interview was not able to distinguish between the two passing groups (Groups A and E) as the mean score for this variable was identical in Group A and E (7.9) (see Table 13).

It is interesting to note that after 1987, there was a significant increase in the pre-interview scores which was ascribed to a change in the scoring procedure. However this increase was the greatest in Group A and the smallest in Group E. It is possible that the use of 5 point scale used after 1987 to score the interview as opposed to the 11 point scale used before 1987 may make it easier to distinguish between these two groups but this will need further study.

After 1989 the focus of the interview was changed from deciding whether the candidate was suited to the profession, to whether the candidate was suited for admission to the Medical Faculty. Whether this is more reliable than selecting for the profession has yet to be confirmed through further research.

- Biographic questionnaire

Bailey (1968) stated that biographic facts are good indicators as *"past performance is a good index of future behaviour" (p259).*

As mentioned in 6.3, the biographical questionnaire was added to the selection criteria in 1984 in an attempt to gather information of a non-academic nature about candidates which focused on interests, achievements in sport, cultural and working activities.

The scores of this parameter were included in the aggregate score for selection in 1984 and 1985 (see 6.3). In 1986, two years, after being introduced, the biographical questionnaire was only administered but not scored. This decision was made as the staff of the Department of Occupational Therapy, who despite believing that exploration of non-academic achievement was important, felt that the questionnaire was more pertinent to Medicine than Occupational Therapy, and that high scores could only be achieved by the "super human".

Although the limited number in the sample for the examination of this variable affects the reliability, it was not found to differentiate between those who passed (Group A and E) and those who failed (Group BC and D) (see Table 15) in the course.

Although this variable did not contribute to distinguishing between the passing and failing students in the sample on its own, when added to the pre-admission interview it advantaged the failing group slightly in terms of the non-academic criteria (see Table 17). When the scores of the biographical questionnaire, pre-admission interview and academic rating were calculated in the composite score it served to widen the gap in the scores between those that passed and those that failed (see Table 49).

Table 49 **Group Means for Academic Ratings, Interview and Biographical Questionnaire in different combinations.**

Group	Academic Rating (AR) (Total 80)	AR & BQ (Total 90)	BQ + Interv. (Total 20)	AR & Interv. (Total 90)	AR, Interv. & BQ (Total 100%)
A	53.9	58.1 (4.2)	12.42	61.9 (8)	66.1
BC	50.1	54.0 (3.9)	12.3	57.3 (7.20)	61.2
D	48.6	52.5 (3.9)	12.7	55.9 (7.30)	59.8
E	53.1	-	12.6	61.0 (7.90)	65.6

Table 49 suggests that when the biographical questionnaire score (which was not able to distinguish between the passing and failing groups), is added to the pre-admission interview and academic rating (which both distinguish between the passing and failure group), it widens the gap between all 4 of the groups eg. Group A to BC: difference between academic rating and interview score is 4.6 but when the biographical

questionnaire score is added it is 5.8. The same is true for Group A to D (gap is widened from 5.6 to 6.3). This might be helpful information in the selection process.

8.5.2 ACADEMIC CRITERIA

This dissertation has determined that previous academic performance is an important indicator of success in the BSc OT course.

The literature confirms this and suggests that the use of academic criteria is the most effective and time efficient method of selecting students who will pass an Occupational Therapy course (Vargo et al 1986, Bridle 1987). However students who are admitted with the highest marks do not necessarily perform the best in final year (Lucci and Brockway 1980, Mitchell 1987) nor achieve the best clinical marks (Bridle 1987, Posthuma and Noh 1990).

This dissertation investigated the value of matriculation marks as a determinant of success in the BSc OT course. Each of the following matriculation variables was explored: matriculation aggregate, mathematics, biology, science and first language to establish if any one of the variables could be used to distinguish between the students who pass and fail in the BSc OT course.

■ Matriculation aggregate/academic rating

The academic rating was calculated from the student's matriculation aggregate (see 7.2) and represents the academic component of the composite selection score (see 7.1). Since the matriculation aggregate and academic rating are the same, only the results of the examination of academic rating was described in this study.

The academic rating and therefore the matriculation aggregate, was found to significantly differentiate between the students who passed subjects on the first attempt and those who failed, where $p<0.0005$. While there was a small difference found between the two passing groups (A and E) and the two failing groups (BC and D) neither difference was significant, although in both cases the mean score of the group that dropped out (D and E) was lower.

It was noted that the matriculation aggregate required for admission to the BSc OT degree between 1982 and 1989 was 60%. Mitchell and Haupt (1990) reported that in 1983 the mean matriculation aggregate of medical students admitted to the University of the Witwatersrand was 70% while that required at Queen's University Ontario is 75% (Brindle 1987), which are both considerably higher than that of the sample of this study (64.26%).

A significant increase at the $p<0.05$ level in the academic rating of all students in the sample was noted after 1987. This represents an increase in the matriculation aggregate from 63.5 before 1987 to 65.2 after 1987. Mitchell and Haupt (1990) reported a very

similar increase in the matriculation aggregate of medical students but in an earlier time from between 1980 and 1983.

The logistic regression study determined that the matriculation aggregate (and therefore the academic rating) was the only matriculation variable that could reasonably predict success in the BSc OT degree. When a 64% cut-off point was used, the odds ratio was 5.221 (see Table 48) which suggests that students with less than 64% matriculation aggregate will fail subjects 5.221 times more. However both sensitivity and specificity of the model used were not at an acceptable confidence level and therefore this result should be viewed with circumspection. However it does seem to suggest that establishing absolute cut-off's for admission may be unwise as many good applicants may be lost, if the cut-off point is not adequately tested.

- Matriculation mathematics

Matriculation mathematics as previously stated (see 7.3) is the only compulsory subject for admission to the BSc OT degree. Whether matriculation mathematics should be a compulsory subject for admission to an occupational therapy course has been frequently debated at the Education Committee of the South African Occupational Therapy Association. It is currently an admission requirement for all the Occupational Therapy courses at South African Universities with the exception of the University of the Western Cape.

The analysis of matriculation mathematics demonstrated that the mean marks for this subject were constant throughout the research period. This variable significantly differentiated at the $p<0.005$ level between the students who passed and failed in the course, although it did not significantly distinguish between either of the two passing groups (Groups A and E) or the 2 failing groups (Groups BC and D). However both groups that dropped out of the course (Groups D and E) had lower mathematics marks.

Although a statutory requirement of 50% pass at higher grade or 60% pass at standard grade in mathematics is required for admission, there were students admitted with less than this (see Table 24). The results of this research indicated that in order to pass the BSc OT course the first time round a mathematics mark of at least 62% at the Higher Grade or a Standard Grade equivalent mark of 82.7% was required.

Interestingly, reports in the literature by Blaisdell and Gordon (1979), Holmstrom (1975) and Bailey (1968) suggested that Occupational Therapy students either rated themselves or were rated as having a lower interest in or aptitude for mathematics. This appears to contradict the finding that the group who passed and completed the course (Group A) had achieved slightly higher in mathematics, than those who dropped out (Group E) but the difference was not significant ($p=0.3966$). This does perhaps in part support Blaisdell and Gordon's (1979) proposal that a differentiation could be made on the basis of their previous performance in mathematics between students who completed an Occupational Therapy course and those who dropped out.

Matriculation biology

This is a recommended matriculation subject for admission to the BSc OT course and 88.9% of the sample were admitted with this subject. This study revealed that students admitted with matriculation biology performed significantly better than those admitted without matriculation biology (see 7.4, Table 34) with $p<0.005$. However the first year biology course was one of the first year courses most frequently failed (see Figure 12).

Like matriculation mathematics, the biology mark was consistent throughout the research period (see 7.4.2) and significantly differentiated at the $p<0.0001$ level between those students who passed (Groups A and E) and those who failed (Groups BC and D) (see 7.4).

However it could not significantly distinguish between either the two passing groups (A and E) or between the two failing groups (BC and D). In the failing groups, Group D scored a lower mean than Group BC, while in the passing groups Group E scored a higher mean than Group A (see Table 29).

Since a high proportion of students in the sample were admitted with this subject (89%), this finding may be contrary to the finding by Bailey (1968) who identified that biology was not one of the preferred subjects of occupational therapy students. Contrary to the findings of this research, Blaisdell (1979) found that biology was not one of the variables that could be used to discriminate between prospective occupational therapy students who would complete or withdraw from the programme.

■ Matriculation physical science

Like biology this was only a recommended matriculation course for admission and only 72.8% of the sample were admitted with this subject. Unlike biology the analytic study revealed that students admitted with this subject did not perform differently from those who were admitted without it (see 7.5, Table 41). It was assumed that matriculation physical science forms a foundation for the half course in Physics and Chemistry offered in first year. These 2 subjects together with biology are the most frequently failed courses in the first year of study (see Figure 12).

This matriculation subject also significantly ($p = 0.004$) distinguished between those candidates that passed (Group A and E) and those that failed (Group BC and D). However, it was again not possible to significantly distinguish between the two failing Groups (BC and D) although for the first time Group D achieved a slightly higher mean than Group BC. It was also not possible to significantly distinguish between the two passing groups although Group E achieved a slightly higher mean score than Group A.

The high number of students admitted with this subject (73%) (see Table 39) was again not consistent with the findings by Bailey (1968) who identified that physical science was not one of the identified interests of occupational therapy students. It was also not supported by Blaisdell (1979) who found that physical science and Physics did not discriminate between those students who dropped out or completed the occupational therapy course at Elizabethtown College. The results of this study indicate that it is

possible to distinguish between those that drop out due to failure (Group D) but not those who drop out for other reasons (Group E).

- First language

This was neither a prescribed nor recommended matriculation subject for admission, although reasonable proficiency in English was required as this was the language of instruction. 96.1% of the sample had English as their first language.

This study demonstrated that first language scores significantly differentiate between the passing (Group A and E) and failing (BC and D) groups with $p < 0.005$. However it was not possible to significantly differentiate between the 2 passing groups although Group E had a higher mean score than Group A. Neither was it possible to differentiate between the 2 failing groups, as their mean scores were very similar.

While Bailey did not identify first language as a high interest in any of the 5 groups of students she studied, occupational therapy students rated contributing to and running newspapers as a preferred extramural activity which presumably requires an interest in language. Interest in English language could be adequately identified in this sample as English is a common matriculation subject. Blaisdell (1979) found language was a variable that differentiated between candidates that completed and dropped out of the OT course at Elizabethtown College, which is not totally consistent with the findings of this study. First language was able to significantly differentiate between those who dropped out due to failure but not for other reasons.

As with the matriculation aggregate a significant increase ($p < 0.005$) in the scores for first language was noted after 1987. No explanation could be found for this phenomenon.

8.5.3 SUMMARY

Selection of students is a complex process which needs to balance the need to fairly identify applicants who have both human potential and the potential to pass the subjects in the BSc OT course but also to take cognisance of the market trends that influence the profession of occupational therapy.

The diversity of the classes in the sample was unacceptably low. This was in keeping with international trends but is contrary to the experience of admitting medical students at the University of the Witwatersrand using the same admission process where class diversity has improved.

The failure rate of 51% was unacceptably high when compared to that of medical students in the same faculty.

The BSc OT degree had an attrition rate of 35%. 70% of this loss was due to failure (Group D) while 30% passed all subjects (Group E) but left for other reasons. While the reasons for dropping out were not explored it has been speculated that age and choice of course may be some of the factors involved.

Of the two non-academic criteria, only the pre-admission interview was significantly able to differentiate between the passing (Group A and E) and failing groups (Group BC and

D), in spite of the criticism of the interview and the lack of inter-rater reliability. Although the biographical questionnaires were not found to significantly differentiate between the four research groups when the scores are added to the interview and academic rating, this widened the gap between the four groups.

All of the academic variables were found to significantly differentiate between the passing (Group A and E) and failing groups (Group BC and D) with the failing groups always achieving lower marks. However the matriculation variables could not differentiate between the two failing groups (BC and D) or between the two passing groups (A and E). Although there was always a slight difference between the mean scores of both the two passing and failing groups, this was not significant. Subject preference has been mooted as a possible reason for the difference but it was also found that previous experience of matriculation biology contributed to significantly better performance (which was not true of matriculation physical science). All matriculation variables proved to be consistent throughout the research period, but the matriculation aggregate and first language demonstrated a significant increase in the mean scores after 1987. No specific reason for this could be ascertained, other than that those in the selection pool had done better or perhaps that there was greater competition for the limited number of places.

The matriculation aggregate was found to be the most reliable matriculation variable to predict success in the BSc OT degree, with a cut-off point of 64%. While all the other variables demonstrated a difference between the mean scores, which was not found to be significant, these mean scores may provide helpful information on the academic requirements for the BSc OT degree.

CHAPTER 9: RECOMMENDATION AND CONCLUSIONS

9.1 INTRODUCTION

The main purpose of this study was to establish the effectiveness of the three assessment procedures, used in the selection process to discriminate between those students who pass or fail in the BSc OT course.

A retrospective, descriptive and analytical study was undertaken on all 236 students admitted to the BSc OT course offered by the Medical Faculty (now the Faculty of Health Sciences) at the University of the Witwatersrand between 1982 and 1989 inclusive.

Data was collected from the faculty archives on the students' selection record for both the academic and non-academic criteria as well as their academic record. Students were divided into 4 research groups based on their academic performance in the BSc OT course.

The descriptive study analysed the demographic characteristics of the sample to determine class diversity, the pass, failure and attrition rates.

The analytical study consisted of a two way analysis of variance (ANOVA) on each of the matriculation variables as well as the selection criteria to determine which variable significantly distinguished between those students who pass and fail in the BSc OT course. Since all matriculation variables were found to significantly differentiate between those

students who pass or fail, a logistic regression study was undertaken, the purpose of which was to determine if any one of the matriculation variables could be isolated as a better predictor than the others. It was hoped that the cut-off point for each variable could be determined.

Results of the descriptive study revealed that there was a high degree of homogeneity in the sample resulting in limited class diversity, an unacceptably high failure rate of 51% and an attrition rate of 35%.

The two way analysis of variance revealed that all the matriculation and selection variables, except the biographical questionnaire variable, were able to significantly distinguish between those students who pass or fail in the BSc OT degree ($p<0.05$). However it was not possible to significantly distinguish between the two passing or the two failing groups on the basis of the examined variables, although differences in mean scores for each research group were noted.

The logistic regression study determined that the matriculation aggregate was the best predictor of success with a cut-off of 64%. No cut-off points could be determined for the other matriculation variables as the model that was used failed to correctly classify students at an acceptable confidence level.

9.2 RECOMMENDATIONS

- Class diversity

It is assumed that the lack of diversity in the Occupational Therapy classes is related to a lack of diversity in the application pool.

It is recommended that selection process described in 3.2, be extended to include an additional step. This step should be "Recruitment" and this should be the first step in the process. It should aim to expand the pool of candidates who wish to apply for Occupational Therapy, so that it extends beyond the historical "young white middle class female" that has dominated the profession both nationally and internationally.

A recruitment policy and strategy must be established which needs to consider:

i) educating the general population about Occupational Therapy, its role and function in health care, so like medicine, it becomes a household name.

ii) educating vocational guidance officers and school children.

iii) targeting specific groups such as black matriculants, men, more mature students and university students whose career path is undecided.

iv) using the recruitment resources currently available for maximum benefit and including Occupational Therapy students and clinicians in this process. Research by Bailey (1968), Holmstrom (1975), Wyrick and Stern (1978) and Madigan (1985) indicated that these two groups are very important in recruitment.

The recruitment programme should be targeted at the under-represented groups.

In addition the Department should negotiate with structures within the University that are running programmes to make the University more accessible to disadvantaged students, such as the School of Science and the Mathematics Foundation. These two programmes should be utilised to prepare the disadvantaged students for the BSc OT course, keeping in mind that the former extends training by two years. The department should actively recruit students from these two programmes or find funding to allow potential students to upgrade their basic skills necessary for admission.

Now, while it is acknowledged that recruitment is a costly use of departmental manpower, our departmental experience in running an active recruitment programme has been positive. It has increased the number of candidates that apply for the BSc OT course to 325 for 35 places. Recruitment should now be focused on the under-represented groups. (Faculty document: Total number of applicants for 1995.)

In addition it is recommended that the Biographical Questionnaire, which is the selection tool designed to identify individuals with a broad range of attributes, be thoroughly reviewed.

The current questionnaire has a number of shortcomings. It does not accommodate diversity of background, socio-economic status or the everyday activities of the individual but rather on achievement in extraordinary and perhaps privileged, eurocentric circumstances. It also tried to equalise the playing fields between the advantaged and disadvantaged candidates through language and work which may not be entirely appropriate to all sectors of the population. Work is scarce in rural and township environments resulting in black applicants not having the opportunity to work, while not speaking an African Language fluently may disadvantage applicants from the Coloured, Indian and White communities.

The development of a new biographical questionnaire is a research project on its own if its purpose, content and rating is to be effective and efficient.

It is suggested that the Biographical Questionnaire focus on including information that can be used to evaluate preferences, interests and motivation that may help predict future performance and aptitude to do a particular course.

- Failure rate

The results of this study indicate that the solution to reducing the failure rate is fairly straight forward. The Allied Medical Selection Committee needs to increase the academic rating for Occupational Therapy from 48 to 52. This represents a matriculation aggregate of 65%, which is the matriculation variable which was isolated as being the most successful in predicting passing and failing in the BSc OT course in the logistic regression

study. It is however realised that this may limit admission of students from traditionally disadvantaged educational systems. In 1994 the academic rating was increased to 53. esearch is needed to monitor whether the failure rate has dropped since this time.

Matriculation mathematics is currently the only subject prescribed for admission to the BSc OT degree. The minimum requirement of a 50% pass in mathematics at the higher grade needs review. This research has found mathematics to be a matriculation variable that significantly differentiates those who pass from those who fail. However although a cut-off point could not be significantly determined, 2.7 is the percentage that separates the mean score for those who pass (62.8%) and those who fail (60.1%). This is considerably higher than the current minimum of 50% which seems unrealistically low. However this would have to be carefully considered in view of the effect it would have on the number and variety of applicants in the application pool.

The Allied Medical Selection committee may also consider making biology a prescribed course for admission, based on the findings that those students who are admitted with matriculation biology perform significantly better than those admitted without it. However this would also have to be carefully weighed against its effects on the application pool.

It is recommended that the Allied Medical Selection committee take cognisance of the matriculation variable profile that has been developed as a result of this study. While it would be inadvisable to prescribe this for admission, it may provide useful guidelines when considering special applications or readmissions or admissions from other universities.

This profile seems to indicate that the probability of passing increases if the marks for the matriculation variable are:

Mathematics (HG)	:	± 62% or more
Biology (HG)	:	± 70% or more
Physical Science (HG)	:	± 63% or more
First Language	:	± 67% or more

■ Attrition rate

This study has failed to isolate any criteria that would be helpful in decreasing the attrition rate. No significant differences have been found between those who pass all subjects and complete the course and those who drop out. Some minor differences have been identified but they are all inconclusive - age, choice, higher marks in biology, physical science and first language.

The literature has proposed a number of possible reasons for attrition, these include:

a) changed life goals (Nordholm and Westbrook 1986).

b) changed career plans due to disenchantment with field (Brindle 1987), or finding out that Occupational Therapy was more or less than expected either due to lack of insight, or lack of knowledge, or family pressure.

c) using the lower years of an Occupational Therapy course to gain access to some more preferred course in the Medical Faculty (Mocellin and Bryce 1988).

d) the low choice rank of Occupational Therapy (Posthuma and Noh 1990, Coombes and Bennet 1983).

Posthuma and Noh (1990) suggested that the pre-admission interview should be used to 'select out' candidates that fit into the above categories. It was probable that the pre-admission interviewers did not focus on this function of the interview sufficiently.

It is recommended that the reasons for leaving the BSc OT course are more thoroughly investigated to determine if any factors can be isolated that could be explored in the selection process.

- The selection criteria

It is recommended that the academic criteria and two non-academic criteria continue to be used in the selection process.

The academic criteria have all been proven to significantly distinguish between those who pass and those who fail in the BSc OT degree.

This study has also determined that the interview can differentiate between those that pass and those that fail and when added to the academic rating this differentiation is more marked. It is therefore recommended that this score continue to be included in the selection aggregate.

It is however recommended that in order to use the interview more effectively, the Allied Medical Selection Committee should re-evaluate the purpose of the pre-admission interview, decide whether it should be structured or not, what can and will be evaluated, how it will be objectively measured and train interviewers to do this effectively and fairly.

In order to do this, one needs to keep in mind the following research findings:

i) it is not possible to establish if a candidate has the appropriate personality characteristics, values and goals to be an Occupational Therapist as there is no certainty as to what these are or how they differ from other students (Bailey 1968, Brollier 1970, Madigan 1985, Mocellin and Bryce 1988, Brown 1989, Madhill et al 1989). The possibility that this finding also applies to trying to establish if a candidate is suitable for the Medical Faculty cannot be excluded.

ii) a young candidate cannot realistically commit herself to a profession or give long range plans and pledges (Nordholm and Westbrook 1980, 1981, 1986, 1987).

iii) it is not correct to assume that candidates applying for Occupational Therapy will have a positive attitude to disabled people since it has been found that Occupational Therapy students' attitude towards disabled is no different to that of other students (Lyons, 1991).

Keeping this in mind it would seem that the most one could hope for from the pre-admission interview is to establish if the candidate is an informed, thinking individual,

who has led a balanced lifestyle, in the context of their social circumstances. Probably the interview has a greater "selecting out" function, than "selecting in" function.

The literature has suggested that inter-rater reliability improves when the format of interviews is structured, resulting in all interviewing teams using a consistent pattern. The Allied Medical Disciplines Selection Committee may also consider this as an option.

The details of how performance in an interview is measured need careful debate, in order to reach consensus. However this strategy, when implemented, should be monitored and be subject to scientific analysis.

It is recommended that the Biographical Questionnaire also continue to be used but that it be changed as suggested in 9.2.1 to make it more effective. It should also then be scientifically investigated.

9.3 CONCLUSION

This study has focused on a potential student's ability to succeed in the BSc OT course based on his academic potential assumed from his previous academic performance, and on his human potential assumed from the interview and biographical questionnaire.

While inadequacies in the process of making these assumptions may account for some of the problems relating to failure and attrition it is possible that there may be other problems within the course itself or in the students' personal life that are contributing to the high

failure and attrition rate. Although this study did not address any of these, it raises a number of questions that need investigation.

i) Is the University of the Witwatersrand's BSc OT course, from an academic point of view, more difficult when compared to:

   a) other science courses, for which a 60% matriculation aggregate is considered to be more than adequate?

   b) other Occupational Therapy courses run at the other Universities, with less stringent selection criteria, and whose failure rates are considerably lower?

ii) Are the standards for preclinical courses set for students from Medical Faculty different to those set for other students doing similar courses for science/art degrees?

iii) Are the Occupational Therapy students being in any way disadvantaged by being grouped with Medical and Physiotherapy students, who have a much higher academic rating for admission, in some of the preclinical courses? eg. Biology I, Anatomy, Physiology, Medicine and Surgery.

iv) Does the BSc OT course demand more emotional maturity from the students than their development years allow? Students from the first and second year are exposed to many harsh realities of living - death, trauma, sickness, disablement,

poverty, psychiatric disturbance which most students have never confronted before, let alone being expected to cope with. Does this perhaps contribute to Occupational Therapy students not coping with their workload?

v) Are these students being overloaded? Occupational Therapy students do more subjects in first and second year than Physiotherapy and Medical students. This is due to University, Medical and Dental Council requirement and both Anatomy and Physiology demanding a pre-requisite course in first year. Do they get enough time to study, to go for help if they need it and to be students?

vi) Is enough being done to help students make the adjustment to learning at a university level and is enough help offered on a content and personal level?

Each of the above needs to be researched to ascertain the manner in which it contributes to the problem.

REFERENCES

American Occupational Therapy Association (1973). Essentials of an Accredited Educational Program for the Occupational Therapist. American Journal of Occupational Therapy March, Vol 27 No 2, p 117-120

Bailey, J. (1968). Some Comparison of Occupational Therapy Biographical Facts with Implications for Recruiting. American Journal of Occupational Therapy, Vol XXII No 4, 1968, p 259-263.

Barkley, R.F. (1976). The Dilemma of Dental School Admission. Journal of American College of Dentists, Vol 43, p 119-126.

Barris, R., Kielhofner, G. and Bauer, D. (1985). Learning Preferences Values and Satisfaction. Journal of Allied Health, Vol 14, pg 13-20.

Bell, B.D. and Bell, J. (1972). Professionalism as a Multidimensional Perspective. American Journal of Occupational Therapy, Vol 26 No 8, p 391-398.

Benham, P. (1988). Attitudes of O.T. Personnel Towards Persons with Disability. American Journal of Occupational Therapy, May 1988, Vol 42 No 5, p 305-311.

Blaisdell, E. and Gordon, D. (1979). Selection of O.T. Students. American Journal of Occupational Therapy, Vol 33 No 4, pg 223-229.

Bem, S.L. (1974). The Measurement of Psychological Androgyny. Journal of Consulting and Clinical Psychology, Vol 74, p 155-162.

Brindle, M. (1987). Student Selection : A Comparison of Three Methods. Canadian Journal of Occupational Therapy, Vol 54 No 3, pg 113-117.

Brollier, C. (1970). Personality Characteristic of 3 Applied Health Professional Groups. American Journal of Occupational Therapy, October 1970, Vol XXIV No 7, p 500-505.

Brown, C.T. (1989). Personality Characteristics of O.T. Students and Clinicians. Canadian Journal of Occupational Therapy, February, Vol 56 No 1, p 21-25.

Cahill, R. and Madigan, M.J. (1984). The Influence of Curriculum Format on Learning Preferences and Learning Styles. American Journal of Occupational Therapy, Vol 38, p 161-164.

Catell, R.B. (1946). Description and Measurement of Personality, World Book Co., New York.

Caughey, J.L. (1969). Focus on Barriers involved in Student Selection for the Study of Medicine. Journal of Medical Education, Vol 44, pg 302-303.

Chaisson, M.G. (1976). Student Selection : Logic or Lottery. Journal of Allied Health, Vol 5, pg 7-16.

Christiansen, C. (1970). The Male O.T.: Attitudes and Trends. American Journal of Occupational Therapy, October 1970, Vol XXIV No 7, pg 513-514.

Clark, M. and White, K. (1983). Personality Characteristics of Australian Occupational Therapy Students. Australian Occupational Therapy Journal, Vol 30 No 1, pg 23-28.

Concha, M. (1987). Investigation into the inter-rater reliability of interviewers - unpublished.

Coombes, P. and Bennet, M. (1983). Student Recruitment and Selection for O.T. Australian Journal of Occupational Therapy, Vol 30 No 1, pg 29-35.

de Luca, P. and de Witt, P.A. (1993). Recruitment of experienced Occupational Therapists back into the TPA/State Work force. South African Journal of Occupational Therapy Vol 23 No 1, pg 10-16.

Delin, C. (1991). Career Attitudes and Work Values of Groups of Occupational Therapy Students : A Replication and an Extension. Australian Journal of Occupational Therapy, June, Vol 38 No 2.

Donohue, M.R. (1995). A Study of Development of traits of Entry Level Occupational Therapy Students. American Journal of Occupational Therapy Vol 49 No 7, pg 703-709.

Gordon, L.V. (1960). SRA Manual for Surgery of Interpersonal Values. Chicago:Science Research Associates. Inc.

Greenwald, R.A. (1976). A Standardised Interviewing Technique for Evaluating Postgraduate Training Applicants. Journal of Medical Education, Vol , p 912-918.

Hendrikson, D. (1962). Personality Variables - significant departure of OT's from Population Norms. American Journal of OT Vol XVI No 3, p 127-130

Holland, J.L. (1963). Explorations of a Theory of Vocational Choice and Achievement - A 4 Year Study, Psychological Reports, No 12, pg 547-549.

Holmstrom, N. (1975). Promising Prospects : Students Choosing Therapy as a Career. American Journal of Occupational Therapy, November-December, Vol 29 No 19, p 608-614.

Jantzen, A. (1972). Some Characteristics of Female O.T.s 1970 - Part I - Descriptive Study. American Journal of Occupational Therapy, 1972, Vol 26 No 1, pg 19-26.

Johnson, R.W., Arbes, B.H. and Thompson, C.G. (1974). Selection of Occupational Therapy Students. American Journal of Occupational Therapy, November/December, Vol 28 No 10, pg 597-601.

Katz, G. and Mosey, C. (1980). Fieldwork Performance, Academic Grades and Pre-selection Criteria for O.T. Students. American Journal of Occupational Therapy, 1980, Vol 3 No 12, p 794-800.

Katz, N. and Heimann N. (1991). Learning Styles of Students and Practitioners in Five Health Professions.

Kielhofner, G. (1985). A Model of Human Occupational Theory and Applications. Williams and Wilkins, Baltimore.

Kolb, D.A. (1976). The Learning Style Inventory, Technical Manual, McBer Boston.

Kolb, D.A. (1984). Experiential Learning Experience as a Source of Learning and Development, Prentice Hall, Englewood Cliffs, New Jersey.

Llorens, L.A. and Adam, S.P. (1978). Learning style preferences of occupational therapy students. American Journal of Occupational Therapy Vol 32, p 161-164.

Lund, A. (1970). An Exploratory Study of Predictive Factors for Success in the Clinical Affiliation Experience. American Journal of Occupational Therapy, April, Vol XXIV No 3, p 222-226.

Lucci, J. (1974a). Basic Master Programme. American Journal of Occupational Therapy, May-June, Vol 28 No 5, pg 292-295.

Lucci, J. (1974b). An Approach to the Selection of Students. American Journal of Occupational Therapy, February, Vol 28 No 2, p 91-93.

Lucci, J. and Brockway, J. (1980). Student Selection Process : A Follow-Up Study. American Journal of Occupational Therapy, Vol 34 No 1, pg 27-32.

Lyons, M. (1991). Enabling or Disabling? Students Attitudes towards Persons with Disability. American Journal of Occupational Therapy, April 1991, Vol 45 No 4.

MacDonald, E.M. (1976). Occupational Therapy in Rehabilitation (4th Edition), Bailiere, London.

MacNab, D. (1985). Work Related Needs, Preferences and Values. An Emperical Integration. PhD Dissertation, University of Alberta, Edmonton Alberta.

Madigan, M.J. (1985). Characteristics of Students in O.T. Educational Programmes. American Journal of Occupational Therapists, Vol 39 No 1, pg 41-48.

Madhill, H., MacNab, D. and Brintnell, S. (1989). Student Values and Preferences : What Do They Tell Us About Programme Selection? Canadian Journal of Occupational Therapy, Vol 56 No 4, pg 171-178.

Mann, W. (1979). Interviewer Scoring Differences in Student Selection Interview. American Journal of Occupational Therapy, April, Vol 33 No 4, pg 235-239.

Mann, W. and Banasiak, N. (1985). Fieldwork Performance and Academic Grades. American Journal of Occupational Therapy, February 1985, Vol 39 No 2, pg 93-95.

Mathewson, M. (1975). Female + Married + Damaging to the Therapy profession. American Journal of Occupational Therapy, November/December, Vol 29 No 10, pg 601-605.

McBride, E.T. (1980). Increasing Minorities in Physical Therapy Profession through Student Admission. Physical Therapy, Vol 60, pg 1284-1288.

Mitchell, G., Mitchell, D. and McGregor. (1987a). Selection of Medical Students - Are Interview Evaluations Consistent? South African Medical Journal, Vol 71, 20 June, pg 774-776.

Mitchell, G., Mitchell, D., McGregor, M. and Fridjhon, P. (1987b). Selection of Medical Students : Are All Matriculations Equivalent? South African Medical Journal, Vol 72, 19 September 1987, pg 416-418.

Mitchell, G. and Fridjhon P. (1987c). Matriculation Examinations and University Performance. South African Journal of Science, Vol 83, September 1987, pg 555-559.

Mitchell, G., Mitchell, D. and Haupt, J. (1988). Selection of Medical Students - Effect on Class Composition of Using Non-Academic Criteria. South African Medical Journal, Vol 73, 8 March 1988, pg 291-293.

Mitchell, G. (1989). Selecting the Future. The Wits Review, p 25-27.

Mitchell, G. and Haupt, J. (1990). Selection of Medical Students - A Follow up Study. South African Medical Journal, Vol 78, 15 September 1970, pg 316-319.

Mitchell, G., Fridjhon, P and Haupt, J. (1997). A report on the relationship between the matriculation and university performance 1980-1991. Faculty document.

Mocellin, G. and Bryce, J. (1988). Characteristics of 1986 First year O.T. Students at Lincoln Institute of Health Sciences. Australian Journal of Occupationa Therapy, Vol 35 No 1, pg 21-30.

Munro, B.H. and Page, E.B. (1986). Statistic methods for Health Care research (2nd edition), Chapter 13, Logstic Regression, pg 229-244.

Muthard, J.E., Morris, J.D., Crocker, L., Slaymaker, J. Fieldwork Experience ratings and Certification Examination Scores as predictors of Job Performance and Satisfaction in Occupation Therapy. American Journal of Occupational Therapy March, Vol 30 No 3, pg 151-156.

Nordholm, L. and Westbrook M. (1980). Changes in Perception of Profession and Self During Occupational Therap, Training. Australian Journal of Occupational Therapy, Vol 27 No 1, pg 6-11.

Nordholm, L. and Westbrook, M. (1981). OTs : Their Career Views 18 months After Graduation. Austrialian Journal of Occupational Therapy, Vol 28 No 4, pg 143-153.

Nordholm, L. and Westbrook, M. (1986). The Careers of Occupational Therapists Five Years after Graduation : Modified Plan but Satisfying Lives. Australian Journal of Occupational Therapy, Vol 33 No 1, pg 16-25.

Nordholm, L. and Westbrook, M. (1987). Changes in Attitude Towards Self, Career and Womens Role Amongst O.T. Students 1976-1986. Australian Journal of Occupational Therapy, Vol 34 No 3, pg 89-104.

Otto, E. (1947). Clinical Field Training Report. American Journal of Occupational Therapy, Vol 1, pg 115.

Patterson, T., Marron, J. and Patterson, N. (1970). Behaviour Patterns of O.T. Students on the FIRO-B. American Journal of Occupational Therapy, May-June 1970, Vol XXIV No 4, pg 269-271.

Peacock, A.C. and O'Shea, B. (1984). Occupational Therapists : Personality and Job Performance. American Journal of Occupational Therapy, August, Vol 38 No 8, pg 517.

Pinder, T.H. (1985). Both Sides of the Table (2). How to Interview : The Selection Interview. British Journal of Occupational Therapy, September 1985, p 277-280.

Posthuma, B. and Noh, S. (1990). Interview Scores and Academic Grades as Selection Criteria for Admission to an O.T. Programme. Canadian Journal of Occupational Therapy, Vol 57 No 5, pg 285- 291.

Posthuma, B. and Sommerfreund, J. (1985). Examination of Selection Criteria for a Programme in Occupational Therapy. American Journal of Occupational Therapy, July 1985, Vol 39 No 7, pg 441-445.

Presseller, S. (1983). Fieldwork Education : The Proving Ground of the Profession. American Journal of Occupational Therapy, Vol 37, pg 163-165.

Rezler, A.G. and French, R.M. (1975). Personality Types and Learning Preferences of Students in Six Allied Health Professions. Journal of Allied Health, Vol 4, pg 20-26.

Rogers, J. and Hill, D. (1980). Learning Style Preferences of Bachelor and Master Students in O.T. American Journal of Occupational Therapy, December 1980, Vol 32 No 12.

Rovezzi-Carrol, S. and Leavitt, R. (1984). Personality Characteristics and Expressed Career Choice of Graduating Physical Therapy Students. Physical Therapy, Vol 64, pg 1549-1552.

Sabari, J. (1985). Professional Socialisation : Implications for O.T. Education. American Journal of Occupational Therapy, Vol 39 No 2, pg 96-102.

Schultz, W.C. (1967). The FIRO Scales, Consulting Psychologist Press, Palo Alto, California.

Stafford, E. (1986). Relationship Between Occupational Therapy Student Learning Styles and Clinic Performance. American Journal of Occupational Therapy, January 1986, Vol 40 No 1, pg 34.

Topetzes, N. (1957). A Programme for the Selection of Trainees in Physical Medicine. Journal of Experimental Education, pg 264.

University of the Witwatersrand, Medical Faculty Documents:

Admission of Medical Students 1980-1989.

Guidelines for Interviewers August 1987 - May 1989.

Allied Medical Disciplines Admission Procedure 1980

Total number of Applicants for 1995.

S88/684, S87/633, S86/1145, S85/234.

Vargo, J.W., Madhill, H.M. and Davidson, D.R. (1986). The Pre-Admission Interview as a Predictor of Academic Grades and Fieldwork Performance. Canadian Journal of Occupational Therapy, October, pg 211-215.

West, W. (1951). Executive Director's Report. American Journal of Occupational Therapy, July/August, Vol 5, p 165.

Westbrook, M. and Adamson, (1989). Knowledge and Attitudes : Aspects of Occupational Therapy Students Perceptions of the Handicapped. Australian Journal of Occupational Therapy, 1986, Vol 36 No 3, pg 120-130.

Westbrook, M., Nordholm, L.A., Wade, K., Colless, M. and Laurey, E. (1976). Personality Characteristics of Students of Five Health Professions. Australian Journal of Occupational Therapy, Vol 23 No, pg 158-165.

Wong, J. (1979). The Inability to Transfer Classroom Learning to Clinical Nursing Practice : A Learning Problem and its Remedial Plan. Journal of Advanced Learning, Vol 4, pg 161-168.

Wyrick, J. and Stern, E. (1987). The Recruitment of Occupational Therapy Students : A National Survey. American Journal of Occupational Therapy, March, Vol 41 No , pg 173-178.

Yerxa, E. (1975). On Being a Member of a "Femine" Profession. American Journal of Occupational Therapy, November/December, Vol 29 No 10, pg 597-598.

APPENDICES

APPENDIX 1

BIOGRAPHICAL QUESTIONNAIRE AND RATING PROCEDURE

1984 - 1986

UNIVERSITY OF THE WITWATERSRAND

FACULTY OF MEDICINE

BIOGRAPHICAL QUESTIONNAIRE FOR APPLICANTS FOR ADMISSION TO THE FACULTY OF MEDICINE

Course for which you have applied: .....

This questionnaire is designed to assess your interests and achievements outside of your school or university studies. There are no 'correct' or 'incorrect' answers. If you are one of the applicants selected for an interview, your answers to the questionnaire will provide a basis for some of the points to be raised in the interview.

Your academic achievements will be assessed from your school performance and, where applicable, your previous university results.

PART I: THIS SECTION TO BE COMPLETED BY APPLICANT

1. Surname: .....

First Name/s: .....

Home Address: .....

Date and Place of Birth: .....

Nationality: .....

Home Language: .....

2. School Career

Name of School	Town	Year	Standards	
			From	To

3. Family Background

Father's Occupation: .....

Mother's Occupation: .....

Guardian's Occupation (if applicable) : .....

PART II : THIS SECTION TO BE COMPLETED BY APPLICANT

1. School/University Activities

(a) Did your school have any cultural activities such as a dramatic society, debating club, chess club, etc? .....

(b) Did your school have sporting facilities? .....

(c) Leadership: Indicate whether you were, for example, the chairperson or an office-bearer of a student council or committee, Head Boy/Girl, prefect or equivalent, chairperson or office-bearer of a society (specify), captain of a sports team (specify), or if you have held any military rank (specify), or any other position of leadership.

.....

.....

.....

.....

(d) Cultural/Social: Indicate what clubs or societies you have belonged to; any non-academic prizes, medals, awards or other distinctions you have received; any other social or intellectual interests you may have, stating whether you have achieved any grade or standard in these pursuits, for example passed examinations, published articles or essays, etc.

.....

.....

.....

.....

(e) Sporting Activites

Sport	Tick those sports in which you participate	Indicate highest level achieved (eg team, captain, etc)
Athletcis		
Cricket		
Hockey		
Rugby		
Squash		
Swimming		
Tennis		
Other (specify)		

2. Outside/Spare-time Activites

(a) List any jobs you have had ('jobs' refers to any activity for which you have earned money):

Employer	What did you do?	Dates	
		From	To

(b) List any hobbies or pastimes you have, eg mountaineering, music, etc.

.....

.....

.....

(c) List anything you have done to widen your experience. (This may refer to study abroad, military service, working in a hospital, clinic or pharmacy, voluntary social service for which you have not been paid.)

Nature of Activity	Dates	
	From	To

3. Please furnish details of any other information you think may be useful to the Admissions Committee.

.....

.....

.....

I declare the above information to be correct.

Signature of Applicant ..... Date .....

PART III: THIS SECTION TO BE COMPLETED BY PRINCIPAL OR OTHER REFEREE

One of the most important factors in determining whether a candidate is offered a place in the Faculty of Medicine is the confidential statement by a referee. The University would be glad to receive, in confidence, your opinion of this candidate's qualities and fitness for admission to the Faculty. In addition, the University requests you to confirm the validity, as far as possible, of the candidate's answers to Parts I and II of this questionnaire. Please answer the following questions as carefully as possible.

Please return the completed form, including the candidate's section, to the Faculty of Medicine, University of the Witwatersrand, York Road, Parktown, Johannesburg 2193, as soon as possible, marked "For Attention: Faculty Secretary."

1. How would you rate the applicant on a 10-point scale in respect of each quality listed below? Please tick one square for each of the seven categories.

	Below Average			Average				Above Average		
	1	2	3	4	5	6	7	8	9	10
1. Academic Ability and Potential										
2. Application to Work										
3. Sense of Responsibility and Loyalty										
4. Integrity										
5. Contribution to School or University										
6. Perseverance										
7. Ability to get on with People										

2. Please furnish any additional information which may be of value to the Admissions Committee.

.....

.....

.....

3. In your opinion, has the applicant answered the questions in Parts I and II accurately and honestly? (If not, please explain.) .....

.....

.....

Name of Principal or Referee: .....
(In Block Letters)

Signature: .....

Date: .....

GUIDELINES FOR MARKERS

a) The aim of the questionnaire is to discover information of a non-academic nature about the candidates.

b) Well - rounded individuals with a wide range of interests and activities will score well on the questionnaire and could qualify for selection into the Faculty despite an average academic record.

c) The usual applicants for admission to the faculty often have a good academic record but are likely to score less than 7 out of the total 14 marks available for the non-academic qualities assessed in the questionnaire.

d) Bonus points are available if overriding factors or unusual circumstances seem to be present.

e) Bonus point would not normally be given but could be assigned to Part II (3) and Part III (2).

PART I

Total Marks = 7 (5%)

i) relative over achievement, with respect to:

a) mother, father deceased; other negative family environment.
b) level of occupation of parent / guardian.
c) physical disabilities, although these must obviously not affect the candidates ability to meet the requirements of the course.

+7 for any of these

-ve marks for:

i) non-South Africans
ii) multiple changes in schooling especially in last years of school, unless changes result from family movement etc.

-7 for any of these

PART II

Total marks = 60 (43%)

Candidates cannot score more than the maximum mark available for each subsection.

1. School / University activities

a) Leadership: Maximum marks = 10

		Marks
+ve:	President of student councils (eg SRC)	4
	Chairperson of student committees	3
	Head Boys / Girl	3
	Prefect or equivalent	2
	Chairperson school societies	2
	Captain of senior sports teams	2
Military rank:	commissioned officer	4
	non-commissioned officer	2

b) Cultural / Social: Maximum marks = 10

+ve:	a)	Member of University / school societies, clubs, committees, in whole university career or last 2 years of school.	1 each
	b)	hobbies / interests eg. mountaineering, flying etc	1 each
	c)	Extraordinary achievements eg. publications in international journals; non-academic prizes, awards, distinctions.	4 each

c) Sport: Maximum marks = 10

national teams	10
provincial teams	8
school 1st team	3 each
any other team	1 each

2. <u>Outside activities</u>

a) Jobs: Maximum marks = 15

+ve:	working to pay for education	15 marks for consistency
	working to support family	
	working for pocket money	5

b) Other: Maximum marks = 15

+ve: a) study abroad: Rhodes scholarship 15
AFS 10
Rotary etc. 5
Own enterprise 5

c) Military service 7

d) Voluntary (unpaid) social service 15
consistency
5
single effort

3. Other information

Subjective: Maximum marks = 3
Marks unusual eg. for someone who has scored maximum points in two of the above sections.

PART III

1. a - g: Marks self - explanatory
2. Bonus marks optional. Maximum = 3.

Total marks = Part I and Part II and Part III and Bonus

= Mark out of 140 (maximum = 143)

÷ 10 = Total out of 14.

1987 - 1989

University of the Witwatersrand, Johannesburg

NB: This questionnaire must be returned

by: 31 JULY 1987

To: The Secretary, Faculty of Medicine, University of the Witwatersrand Medical School, York Road, Parktown, 2193

FACULTY OF MEDICINE

Biographical questionnaire for applicants to the Faculty of Medicine

1987 - 1989

University of the Witwatersrand, Johannesburg

NB: This questionnaire must be returned

by: 31 JULY 1987

To: The Secretary, Faculty of Medicine, University of the Witwatersrand Medical School, York Road, Parktown, 2193

FACULTY OF MEDICINE

Biographical questionnaire for applicants to the Faculty of Medicine

University of the Witwatersrand, Johannesburg

NB: This questionnaire must be returned by: **31 JULY 1987**

To: The Secretary, Faculty of Medicine, University of the Witwatersrand Medical School, York Road, Parktown, 2193

FACULTY OF MEDICINE

Biographical questionnaire for applicants to the Faculty of Medicine

Degree(s)/diploma(s) for which you have applied:	1st choice	2nd choice	3rd choice
For which year (1st, 2nd, etc):			

This questionnaire is designed to assess your interests and achievements outside your studies. If you are eligible for admission, your answers will be marked and the mark will contribute towards this assessment.

Parts I and II to be completed in black ink by the applicant.

Part I:

Surname: .....

First Name(s): .....

Home Address: .....

Date and Place of Birth: .....

Nationality: .....

Population Group: .....

Home Language: .....

School at which matriculated/will be matriculating: .....

.....

Post-matriculation activities: (if applicable): .....

Indicate at which university you have studied and the direction of study (eg BSc II, BAI); any other occupation you have pursued since leaving school (eg travel, technical training, national service).

Activity	Dates	
	From	To
a)		
b)		
c)		
d)		
e)		

c) African Languages:

Indicate which African language(s) you write or speak fluently (To be confirmed at interview)

African Language	Degree of fluency		
	Good	Fair	Poor
a)			
b)			
c)			
d)			

d) Sporting activities

List not more than four sports you play regularly. Indicate the highest level achieved, eg 1st team, or other school team, provincial, national team, or social, in each case.

Sport	1st Team	Provincial	National	Other (specify)
a)				
b)				
c)				
d)				

2. Other activities

a) List any jobs you have had over the last two years ('jobs' refers to any activity for which you have earned money). Indicate the approximate number of hours per year you spend earning money.

Employer	What did you do?	Hours/Year
a)		
b)		
c)		
d)		
e)		

Part II:

This section refers to both school and school-related activities and post school responsibilities, where applicable.

1. Achievements

(a) Leadership .

Indicate whether you were, for example: head boy/girl, prefect or equivalent, chairperson or office-bearer of a society (specify), or youth movement (specify), captain of a sports team (specify), or held any other position of leadership .

Position held	When?			
	Std 9	Std 10	*University*	*Other*
a)				
b)				
c)				
d)				
e)				
f)				
g)				
h)				

b) Cultural/Social

Indicate your cultural or social interests and activities, mentioning, where applicable, awards such as non-academic prizes, medals, other distinctions or achievements (excluding sport).

Activity	Special Achievements/Awards
a)	
b)	
c)	
d)	
e)	
f)	
g)	
h)	
i)	
j)	

b) List anything else you have done to widen your experience, eg special awards or scholarships, voluntary social work or community work, working in a hospital, etc. Indicate approximately how many hours per year you have spent in the last year doing voluntary social or hospital work.

Activity	
i) Scholarships/Special awards etc:	Year of award
a)	
b)	
c)	
d)	
ii) Social/Medical etc:	Hours/Year
a)	
b)	
c)	
d)	

c) List any other achievements you think may be of interest to the Admissions Committee:

I declare that the above information is correct.

I understand that this questionnaire is not the official application form.
I have completed the official application form and have submitted it to the Central Admissions Office.

Name of applicant: ..... Date: .....

Don't forget to have Part III completed by your school principal or other referee.

Part III: Confidential Report

This section is to be completed in black ink by school principal or other referee

Name of applicant: .....

1. In your opinion has the applicant answered the questions in Parts I and II accurately?
   *Please delete whichever is not applicable

   If No, please explain: _____

2. How long have you known the applicant? _____

3. How well do you know the applicant? _____

4. In your opinion does the applicant have
   *Please delete whichever is not applicable

   a) the academic potential *Yes/No

   b) the human potential *Yes/No

   to pursue his/her chosen career in the health professions?

   Please expand if you wish to do so.

5. Please add any information which the applicant has left out, and which you think might be of interest to the Admissions Committee.

6. Please return this questionnaire together with Parts I and II to The Secretary of Medicine, University of the Witwatersrand Medical School, York Road, Parktown, 2193 by: 31 July 1987.

   .....

   Name of Referee: .....
   (Please print)

   Relationship to applicant: .....

   Address: .....

   .....

   Signature: .....

   Date: .....

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF MEDICINE

GUIDELINES FOR MARKERS OF THE BIOGRAPHICAL QUESTIONNAIRE

1. The aim of the questionnaire is to discover information of a non-academic nature about the candidate.

2. Well-rounded individuals with a wide range of interests and activities will score well on the questionnaire and could qualify for admission to the Medical Faculty despite a less-than-outstanding academic record.

PART I This section is for information only and should not be scored.

PART II Maximum marks = 100

No candidate's score should exceed the maximum mark available for each sub-section.

1. Achievements : maximum marks = 60

a) Leadership : maximum marks = 20

At University	: President of SRC	:	20
	Office-bearer of student committee/society/club	:	5
At school	: Head Boy/Girl	:	20
	Chairman of SRC	:	20
	Vice Head Boy/Girl	:	10
	Prefect or equivalent	:	5
	Office-bearer of school society/club	:	2
Sport	: Captain of national/ provincial team	:	20
	Captain of 1st or 2nd school/university/club team	:	5
Military	: Commissioned Officer	:	20
	Non-commissioned officer	:	5
Other	: Junior city councillor	:	5
	Scout/Guide or equivalent	:	2

b) Cultural/Social/Hobbies (exclude sport) : Maximum marks = 10

1 mark for membership of a club, an additional 2-5 marks to be given at the marker's discretion for special/outstanding achievements.

/Cont ...

PART III Referees report

Please note on the mark sheet whether the referee has made any special positive or negative comments. These reports will be reviewed by a small committee of the admissions committee who will add or subtract marks.

NOTE

1. Please record on the questionnaire your mark for each sub-section of the questionnaire.

2. Please enter, on the attached mark sheet, the score out of 10 obtained by each applicant.

3. Note that Taalbond exams and the Maths Science and English Olympiad Competitions or any other academic achievement should not be scored in this questionnaire.

   These are academic achievements and good performance in them will be reflected in good matriculation marks, or other academic rating.

LF/jh
5 June 1987
F010

APPENDIX 2

INTERVIEW PROCEDURE AND RATING

1987 - 1989

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF MEDICINE

GUIDELINES FOR INTERVIEWERS -

1. AIMS OF THE INTERVIEW SESSION

a) To exclude applicants who seem to the interviewers to be unsuited to the profession.

b) To attempt to gauge the applicant's long-term potential to succeed in and contribute to the medical profession.

c) To mark the biographical questionnaire.

2. ADMINISTRATION OF THE INTERVIEW

a) Biographical Questionnaire

A completed biographical questionnaire will be available for each applicant. The questionnaire should be marked before the applicant is interviewed so that interviewers can gain background knowledge to the candidate and so that interviewers can identify incomplete or discrepant answers in the questionnaire. Unusual or unsatisfactory referee's reports to be noted on the mark sheet. The interview itself should be used to correct the questionnaire if necessary. The final mark for the questionnaire should be recorded on the mark sheet.

b) Interview

The interview itself should last about 10 minutes. Applicants must be advised at the outset that the aim of the interview is to generate discussion on a wide variety of topics. The interview should be structured in such a way as to evoke individual reaction on the part of the interviewee, the aim being to encourage the interviewee to participate in the discussion. Any set pattern should be avoided, and interviewers should try to retain as much flexibility as possible.

An interview score for the applicant must be agreed upon and all members of the team should participate in the allocation of a final score. If, after discussion, interviewers cannot agree on a rating, both scores should be submitted.

The following 5-point scale should be used for interview rating:

10 - excellent
7 - above average
5 - average
3 - below average
0 - unsuitable

A score of 0 should be awarded to applicants who fall into one or more of four categories:

/Cont ...

a) applicants who appear to be psychologically disturbed

b) applicants who give the impression that they would be overwhelmed by the University environment

c) applicants who are uninterested in a medical or allied medical career, and are applying because of parental pressure.

d) applicants who have experienced an unsatisfactory interview through the fault of the interviewers.

Type (a) and (d) applicants must have a second interview. Type (b) applicants could have a second interview at the discretion of the interviewers. For type (b) and (d) applicants the second interview should be arranged immediately through the Faculty Office. Second interviews for type (a) applicants are usually delayed and arranged independently by the office.

Teams must enter the interview score on the mark sheet. In the case of 0, interviewers should identify the category.

LF/jh
17 August 1987
F010

DATE: _____

INTERVIEW SCORE SHEET

APPLICANTS NAME

DEGREE APPLIED FOR: BSc (OT)

INDIVIDUAL SCORES

INTERVIEWERS	

AGREED INTERVIEW SCORE

(BQ SCORE NB not to be used for selection

REMARKS:

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF MEDICINE

GUIDELINES FOR INTERVIEWERS

(1) Aims of the Interview

(i) To identify applicants of a variety of backgrounds and also to identify those showing criteria of excellence, whether academic or other.

(ii) To form an overall impression of the applicant's suitability to study medicine or the relevant allied medical discipline and to attempt to guage his/her motivation, breadth of interest, perseverence, integrity, unselfishness, sense of responsibility, and commitment to Society.

(iii) As motivation is particularly difficult to assess, candidates should be questioned about anything they might actually have done to put into effect their expressed values and beliefs.

(iv) In order to gain some indication of the personality of the candidate, the interviewer should strive to be flexible and unpredictable and to elicit a total response from the interviewee.

(v) The introduction of an element of stress is deemed to be valuable in order to assess the calibre of the applicant. This can be created by questioning the applicant on challenging or controversial issues.

(vi) Applicants must be advised at the beginning of the interview that the aim of the interview is to generate discussion on a wide variety of topics.

(2) Interviewing Techniques

(i) Interviewers must study the completed questionnaire and decide on the structure of the interview before the applicant is ushered in.

(ii) Unless something suspicious is noted, questions already answered on the questionnaire should not be repeated during the interview.

2.....

(2) contd.....

(iii) In assessing the biographical questionnaire, interviewers should bear in mind the varying backgrounds of applicants, particularly as regards opportunities that are available to them at high school, social attitudes towards certain extra-curricular activities, such as serving as a prefect, etc. It should be ascertained whether or not the applicant had taken any steps to try to create opportunities around him/her, where these did not already exist.

(iv) Leading questions should be avoided, as well as questions merely requiring a 'yes' or 'no' answer.

(v) Any set patterns should be avoided and interviewers should try to retain as much flexibility as possible.

(vi) The interview should be structured in such a way as to evoke individual reaction on the part of the interviewee, the aim being to encourage the interviewee to participate in the discussion.

(vii) Medical questions beyond the scope of the interviewees should be avoided. Applicants should, however, be asked what they would do if their application for admission was unsuccessful, as this would give an indication of their determination to follow the relevant career.

(3) Role of the Chairman

The Chairman of an interviewing team should be flexible, sensitive and non-aggressive in the role as Chairman, and should encourage all members of the interviewing teams to participate in the allocation of a final score (see item (5) below).

(4) Administration of the Interview

(i) The interview module is 45 minutes. Interviewers should spend about 5 minutes prior to the interview studying the questionnaire and deciding on the structure of the interview; the interview itself should last approximately 30 minutes; the remaining 10 minutes should be used for discussion and assessment.

3.....

(4) contd.....

(ii) On completion of the interview the applicant should be told, before leaving the Medical School, to report back to Mrs Mavrandonis or Mrs Low.

(iii) Interviewers should assess each applicant individually, bearing in mind that there is room for many different kinds of people in medicine and its allied disciplines.

Interviewers are specifically requested not to compare one applicant with another in reaching their final assessment.

(iv) Save for the cases referred to in paragraphs 5(iii) and (iv) hereafter the Chairman should write the comments of the team in the space provided; and fill in the agreed score. All members of the team must sign and date the questionnaire and it should be returned immediately to Mrs Mavrondonis or Mrs Low.

(5) Rating and Recording of the Interview

(i) Interviewers are asked to allocate a rating ranging from 0 to 10 as follows:

10 - Very highly recommended

9) 8) - Strongly recommended

7) 6) - Favourable

5) 4) - Average

3) 2) - Doubtful

1 - Very doubtful. Interviewers may recommend a second interview.

0 - Totally unacceptable. Applicant is entitled to a second interview.

(ii) For ratings of 2 to 10, the rating, together with a brief comment explaining how the team arrived at its decision, must be entered on the form in the allotted space, together with the date. Each interviewer must sign the questionnaire.

4.....

(5) contd.....

(iii) For a rating of 1 (very doubtful), the interviewers may or may not wish the applicant to have a second interview. If a second interview is not recommended, interviewers are requested to complete the questionnaire as under (ii).

If a second interview is recommended, interviewers are requested not to write anything on the questionnaire and to proceed as described under (iv).

(iv) When an applicant is rated 0, no mark or signatures should be entered on the questionnaire. Mrs Mavrandonis or Mrs Low should be informed immediately as such an applicant is entitled to a second interview. The interview score, comments, signatures and date in such a case must be recorded on a separate sheet of paper, on which the applicant's full name is to be written.

(6) Additional points for noting

(i) Applicants should not be marked down for indicating that the course for which they are being interviewed is not their first choice. Nor should they be marked down if they have applied to some other medical school.

All applicants are strongly advised to make a second choice and to apply, as well, to other medical schools.

(ii) It is the policy of the Medical Faculty to provide opportunities for applicants who have received their high school training under disadvantaged or deprived conditions (and this applies mainly to Black and Coloured pupils). In such cases interviews will be granted to some students with a slightly lower level of school performance. Such a student, if accepted, may be admitted on condition that he is required by the Dean to spend two years in MBBCh I (or in the respective paramedical courses), during which time such a student will be required to attend courses on the Academic Support Programme appropriate to his/her needs in one or both of those years of study, in an attempt to help him/her to catch up any educational deficit.

(6) contd.....

Interviewers who detect such applicants are asked to make recommendations that such applicants would be suitable candidates for the two-year course.

(iii) Interviewers are asked to take note of the problems and needs of non-English speaking applicants irrespective of ethnic group. Such applicants may also benefit from the two-year first year, with English as one of their Academic Support Programme courses.

(iv) Applicants may choose to be interviewed in either English or Afrikaans.

(v) Interviewers are asked to be aware that applicants from different ethnic groups may have a different approach to the interview, e.g. some Asian females may be hesitant to speak freely because of a protected, strict upbringing; or some black applicants may be straightforward to the point of bluntness in answering politically-slanted questions. The possible effect of such attitudes on an applicant's performance at interview should be borne in mind by the interviewers before they allocate a score for the interview.

H/dd
4-7-82

APPENDIX 3

FORM USED FOR DATA COLLECTION

STUDENT SELECTION PROJECT

1. Subject [ ][ ][ ] 1 2 3

2. Year of Admission [ ][ ][ ][ ] 4 5 6 7

3. Age [ ][ ] 8 9

4. Sex F1
M2 [ ] 10

5. Choice 1st
2nd
3rd [ ] 11

6. School [ ][ ][ ] 12 13 14

POST MATRIC ACTIVITY

7. Worked N1
Y2 [ ] 15

8. University Course N1
Y2 [ ] 16

9. Other N1
Y2 [ ] 17

MATRICULATION

10. Type of Matric [ ][ ] 18

JMB 1
TED2
DET3
Indian Affairs4
Coloured Affairs5
Natal Senior Certificate6
Cape Senior Certificate7
National Senior Certificate8
O Levels9
M levels10
A Levels 11
SATS 12

11. Aggregate [ ][ ][ ] 19 20 21

12. 1st Language [ ][ ] 22 23

13. 2nd Language [ ][ ] 24 25

14. Mathematics [ ][ ] 26 27

15. Physical Science [ ][ ] 28 29

16 Biology [ ][ ] 30 31

17. Remaining subject with highest Mark [ ][ ] 32 33

18.Biographical Questionnaire [ ][ ] 34 35

19. Interview Rating [ ][ ] 36 37

Marks in Occupational Therapy Course.

First Year

20 Physics		38 39
21 Chemistry		40 41
22 Psychology I		42 43
23 Biology		44 45
24 Human Behavioural Science		46 47

REPEAT

25 Physics		48 49
26 Chemistry		50 51
27 Psychology I		52 53
28 Biology		54 55
29 Human Behavioural Sciences		56 57

Second Year

30 Anatomy		58 59
31 Physiology		60 61
32 OT I		62 63
33 TAT I		64 65

REPEAT

34 Anatomy		66 67
35 Physiology		68 69
36 OT I		70 71
37 TAT 1		72 73

Third Year

38 OT II		74 75
39 TAT II		76 77
40 Psychology II		78 79
41 Psychiatry for Therapists		80 81
42 Medicine and Surgery		82 83

REPEAT

43 OT I		84 85
44 TAT II		86 87
45 Psychology II		88 89
46 Psychiatry for Therapists		90 91
47 Medicine and Surgery		92 93

Fourth Year

48 OT III A		94 95
49 OT III B		96 97
50 TAT III		98 99

REPEAT

51 OT III A		100 101
52 OT III B		102 103
53 TAT III		104 105

✓ APPENDIX 4

SUMMARIES OF RESULTS

✓ **Table 1** **Variance Between the 4 Research Groups with respect to the Pre-admission Interview.**

	Mean	1	2	3
A	8.0443			
BC	7.2068	0.0167		
D	7.30153	0.0407	0.8074	
E	7.91361	0.7855	0.1597	0.2318

✓ **Table 2** **Mean and Standard Deviations for Each Time Period with respect to Pre-Admission Interview.**

Interview	Before 1987	After 1987
n	118	100
$\overline{x}$	7.266	7.980
sd	2.228	1.763

✓ **Table 3** **Means and Standard Deviations by each Group in Each Time Frame with respect to Pre-Admission Interview.**

Interview	A1	A2	BC1	BC2	D1	D2	E1	E2
n	53	33	29	29	26	25	10	13
$\overline{x}$	7.603	8.484	6.793	7.620	6.923	7.680	7.750	8.076
sd	2.281	1.622	2.093	1.934	2.243	1.547	2.201	1.977

Table 4 **Indicating the Variance between the 2 time periods for pre-admission interview.**

	Mean	1	2	3	4	5	6	7	8
A1	7.603								
BC1	6.793	0.0837							
D1	6.923	0.1607	0.8119						
E1	7.750	0.8338	0.1977	0.2724					
\2	8.484	0.0504	0.0012	0.0035	0.3146				
BC2	7.620	0.9711	0.1201	0.2023	0.8615	0.0942			
D2	7.680	0.8765	0.1091	0.1823	0.9263	0.1343	0.9144		
E2	8.076	0.4499	0.0582	0.0940	0.7007	0.5380	0.4992	0.5660	-

Table 5 **Means and Standard Deviations of Biographical Questionnaire for the 4 research groups.**

Interview	Group A	Group BC	Group D	Group E
n	21	11	11	4
$\bar{x}$	4.4857	5.1272	5.4272	4.6250
sd	2.2251	2.743	2.8674	2.5927

Table 6 **Variance Table of the 4 research groups for the Biographical Questionnaire.**

	Mean	1	2	3
A	4.2044			
BC	3.9500	0.8197		
D	3.9000	0.7851	0.9690	-
E	not estimated as number was too low			

Table 7 **Means and Standard Deviations of Biographical Questionnaire of 4 groups in 2 time periods.**

Interview	A1	A2	BC1	BC2	D1	D2	E1	E2
n	17	4	9	2	9	2	4	0
$\bar{x}$	4.6588	3.750	5.8000	2.1000	6.3000	1.500	4.6250	
sd	2.3130	1.892	2.570	0.1414	2.3457	0.707	2.5927	

Table 8 **Means and Standard Deviations of Biographical Questionnaire scores for the 2 time periods.**

Interview	Before 1987	After 1987
n	39	8
$\bar{x}$	5.2974	2.7750
sd	2.4209	1.6576

Table 9 **Variance between 4 groups in the 2 time periods for the Biographical Questionnaire.**

	Mean	1	2	3	4	5	6	7	8
A1	4.65882								
BC1	5.8000	0.2383							
D1	6.3000	0.0929	0.6490						
E1	4.6250	0.9791	0.4029	0.2352					
A2	3.7500	0.4836	0.1480	0.0740	0.5955				
BC2	2.1000	0.1467	0.0473	0.0253	0.2147	0.4149			
D2	1.5000	0.0751	0.0222	0.0113	0.1266	0.2679	0.7966	-	-
E2	-	-	-	-	-	-	-	-	-

Table 10 Variance of Academic rating by group.

	Mean	1	2	3
A	53.923			
BC	50.081	0.0001		
D	48.676	0.0001	0.1471	
E	53.083	0.4930	0.0182	0.0007

Table 11 Variance between the four groups for mathematics.

	Mean	1	2	3	4
A	64.182				
BC	60.066	0.0249			
D	54.405	0.0001	0.0115		
E	62.237	0.3966	0.4491	0.0082	-

Table 12 Analysis of variance for Biology between the 4 groups.

	Mean	1	2	3	4
A	70.236				
BC	65.196	0.0021			
D	61.800	0.0001	0.0500		
E	71.521	0.6289	0.0071	0.0001	-

Table 13 Analysis of Variance for Physical Science between the 4 Groups.

	Mean	1	2	3	4
A	63.937				
BC	56.796	0.0004			
D	57.922	0.0062	0.6287		
E	65.892	0.4700	0.0016	0.0080	-

Table 14 **Variance of first language in the 4 research groups.**

	Mean	1	2	3	4
A	68.218				
BC	64.917	0.0187			
D	64.630	0.0139	0.8514		
E	69.090	0.6514	0.0374	0.0292	-

Table 15 **Variance of first language for the 4 groups in the 2 time periods.**

	Mean	1	2	3	4	5	6	7	8
A1	66.377								
BC1	62.228	0.0223							
D1	63.500	0.1294	0.5375						
E1	67.181	0.7695	0.0847	0.2082					
A2	70.060	0.0459	0.0001	0.0019	0.3187				
BC2	67.607	0.5253	0.0110	0.0602	0.8853	0.2497			
D2	65.760	0.7587	0.1046	0.3143	0.6353	0.0512	0.4181		
E2	71.000	0.0724	0.0013	0.0069	0.2612	0.7291	0.2231	0.0654	-

Author De Witt P A
Name of thesis Selection Of Occupational Therapy Students For Bsc Ot Course At The University Of The Witwatersrand De Witt P A 1998

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