NON-COGNITIVE FACTORS AS PREDICTORS OF SUCCESS IN EXAMINATIONS DURING STAGE 1 OF 1ST LEVEL NURSE TRAINING

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SUMMARY OF STUDY

The purpose of the study was to determine whether specific non-cognitive factors could be identified which could act as predictors of high/low performance in examinations during Stage 1 of 1st level nurse training. The specific non-cognitive factors examined were:- motives for choosing nursing; personality characteristics measured using Cattell's 16 PF Questionnaire (Form A); family and scholastic background; study patterns and attitudes; and vocational preferences measured using Kuder's Vocational Preference Record (Form C/E).

The aims of the study were:-

1. to determine whether there were any differences between low and high achievers in relation to the non-cognitive factors outlined above.
2. to determine whether there were any non-cognitive differences between high/low achievers and consistent achievers.
3. to determine whether high achievers were similar in relation to the specified non-cognitive factors.
4. to determine whether low achievers were similar in relation to the specified non-cognitive factors.

130 learners from four randomly selected Colleges of Nursing and Midwifery in Scotland were used in the study. Due to attrition, final data analysis could only be carried out using 119 learners.

Data was collected by the use of questionnaires and nurse training records. 15% of the sample were also interviewed. These learners were selected from the bottom 25% of the low academically qualified group and the top 25% of the high academically qualified group.

The qualitative data was analysed using a code book. The

quantitative data was analysed using descriptive statistics and the Statistical Package for the Social Sciences.(SPSSX)

Analysis suggested that there was a low correlation between academic qualifications and modular examination results during Stage 1 of training, and that it was statistically not significant. There was also a low correlation between academic qualifications and Stage 1 examination results, although it was statistically significant.

Only one of the 98 non-cognitive variables used in the study was able to detect any differences between low and high achievers. Low achievers were significantly different from high achievers in relation to relocation.(0.03 level) Relocated learners were more frequently found in the low achievement group. As for the comparison between consistent and low achievers one difference could be detected. Consistent achievers were more likely to have lived with an unemployed person than low achievers. ($P = 0.05$)

High achievers when compared with consistent achievers appeared more likely to offer a self esteem reason as their second reason for coming into nursing, as opposed to a more patient centred reason. However due to the limitations of the instrument used to collect the quantitative part of the data, the finding must be considered with caution. There appeared to be few similarities within the high or low achievement groups which were exclusive to that group. At the 0.05 level of significance relocated learners were more likely to belong to the low achievement group. High achievement showed a positive correlation with married learners at the 0.01 level of significance. At the 0.05 level of significance positive correlations were found between high achievers and older learners, female learners, learners who were concrete thinkers, and learners who rarely permitted friends to disrupt their study times.

It was concluded that less emphasis should be placed on academic qualifications as an assumed correlate with examination achievement levels during Stage 1 of training.

During the course of his/her training the learner nurse must endure a physically and emotionally demanding work environment which is both diciplined[5] and authoritarian in structure. Few would dispute that in order to surmount these difficulties, strong motivation to practise the profession of nursing is a prerequisite for those undertaking training, yet little formal recognition is given to this or other non-cognitive factors within the process of recruitment to nurse training. The major criterion for selection remains Ordinary and Higher grade examination results.

At the present time the minimum education entry requirements for entry into a College of Nursing for 1st level training is set at five Ordinary grades all at band C or above. For those over twenty three years of age who do not have the necessary educational requirements an entry test approved by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (hereafter called the UKCC) is available. It measures mainly cognitive ability such as numerate and literate skills, plus verbal and non-verbal reasoning.

These are the minimum entry requirements set by the UKCC, but Colleges of Nursing are free to set their own standards provided they meet the minimum criterion. Consequently some Directors of Nurse Education (DNE) retain the minimum because without it they would attract insufficient recruits. This is especially true when recruiting for entry to mental handicap and psychiatric nursing. Other DNE's, particularly those in the cities, with no recruitment difficulties maintain a much higher entry standard, arguing that this is necessary for the academically demanding nursing curriculum with its modular system, and/or the professional development of nursing.

These differing rationales for setting entry standards result in recruits being drawn from a very broad spectrum of educational

ability, from the minimum up to the standard of university entrance. This lack of uniformity itself raises serious questions about the value of any absolute level of educational ability as a useful selection tool, and in particular as a predictor of success in modular examinations.

Literature from the field of Adult Education suggests that a student's motivation and/or perceived relevance of the material to be learned are of significance in relation to a successful learning outcome e.g. Houle(1961), Evans(1967), Knowles(1971), Rogers(1975) and Lovell(1980).

Within nursing work done by Singh(1970)(1971), Burton(1972), Singh and Smith(1975), Birch(1975) and Lewis(1980) suggests that several non-cognitive factors, such as personality, social class, motivation and attitudes may be used as predictors of success in nurse training.

At present contracting employment opportunities for young people, including a contraction of university places and intense competition for same, mean many more may consider nursing as simply an alternative form of secure employment rather than a profession that they actually wish to pursue. Thus they may be unwilling to commit themselves to a demanding study schedule. Other learners within the Colleges of Nursing may be unable to see the relevance of learning nursing theory beyond the point of passing examinations. Learners in such groups may also have personalities more suited to a different type of occupation. These factors raise questions about the wisdom of major reliance on academic criteria as a selection tool for nurse training.

As a result of some of the questions raised by the foregoing points, McDonald(1985) conducted a study to examine the difference between SCE Ordinary grades and Higher grades as predictors of success in 1st level nurse training. It appeared that some learners with high

academic entry qualifications had low modular examination results while other learners with low academic entry requirements had high modular examination results.

The purpose of this study is to determine whether specific non-cognitive factors can be identified which could act as predictors of high/low performance in examinations during nurse training.

The Scottish Education Department's predicted drop in the pool of 18 year olds around 1990 presents potential recruitment difficulties which may demand innovative methods of attracting suitable recruits from a wider age group and/or of more mixed educational ability.

A review of the literature relevant to the study is presented in Chapter 1. The specific objectives of the study, a description of the research design, the aims of the pilot study and methods used in the main study are given in Chapter 2. The analysis of the data is reported in Chapter 3 and a detailed discussion of the findings is carried out in Chapter 4. The final chapter contains the conclusions drawn from the study and the implications that these may have for nurse education, along with suggestions for further research.

CHAPTER 1

LITERATURE REVIEW

The period under review is the early 1970's onwards, however where appropriate, literature from the 1960's will also be included if it is considered to offer a major contribution to the area under study.

In order to look at what non-cognitive factors might contribute to modular examination success a number of areas required to be reviewed. Relevant literature will therefore be categorised under five main headings: motives for choosing nursing;

personality characteristics;

vocational /personal preferences;

social and educational background;

study strategies.

Although these headings are interlinked they will be reviewed separately in order to clarify the problems encountered by researchers.

1.1 Motives For Choosing Nursing.

Motivation is a very complex issue which embraces concepts such as internal and external motivation, achievement motivation, and the presence or absence of conscious awareness of self motivation. As a result researchers who have studied motives for people choosing to train as nurses have often encountered a variety of problems. The respondents may not be consciously aware of their true motive, or if they are, they may present the researcher with a reason that they

feel is socially acceptable, rather than the actual motive. In relation to nursing there may also be two conflicting types of motives, patient-centred and self-centred, and due to the public image of nursing the latter may be felt by the respondent to be unacceptable to the profession and thus not expressed. Often more than one factor exists as a motivator. Sometimes several factors contribute equally to the decision to enter nurse training, but more often multiple motives contribute in a hierarchical manner.

Another issue which can create problems arises from the wide range of research problems and the way in which they have been explored. Some studies have categorised the range of reasons given but have not linked them to a particular factor. Other studies have examined the relationship between reasons given for entering nurse training and factors such as attrition rates, types of training courses, or differences in student attitudes on entry to nursing over a period of years. Often these approaches divide the group into sub-groups of differing motives, and in doing so the researchers encounter the problem of trying to determine an acceptable method of deciding which motives are 'good' and which are 'bad'. Most classifications are professionally determined. A few are determined by the popularity of the reason with the trainees. Even when the classification is determined by the profession differences of opinion arise depending on whether the judges have an educational or clinical bias in nursing. Thus classification is varied and often subjective.

Problems also arise in relation to measurement of motives for choosing nursing. Most researchers favour quantitative analysis and usually use one of a variety of instruments to explore reasons for choosing nurse training. Rarely do they use the same instruments, thereby making comparisons difficult. A few researchers use a

qualitative approach.

Most of the studies reviewed have encountered problems in at least one of these areas and have tried to deal with them in a variety of ways, as will be seen below.

As part of the ongoing projects related to the experimental schemes of nurse education in England and Wales in the late 1960's and early '70's Singh(1970) examined the reasons for coming into nursing that were given by 229 students undergoing 6 different experimental courses during 1969-70. The students were from 18 Schools of Nursing in England and Wales and were tested within the first eight weeks of commencement of training, to judge the value of these motives to the profession.

Singh reported that there was little difference between the students on the various courses in relation to their choice of motives.

As a continuation of the research into the experimental schemes of training in England and Wales Singh and Smith(1975) explored the differences in reasons given between students who continued with their training and those who left within two years of commencement. In this report the data for the 229 students on the experimental courses was incorporated with the data from students on traditional courses of training to give a total sample of 845 students.

These two studies were important in that they were attempting to move away from previous work which concentrated on qualities thought by those in authority to be important for nurses, to describing motives that appeared to influence a person's decision to enter nurse training. The second study attempted to go further by searching for possible differences in motives between those students who left

training and those who continued. The studies were moving from recorded opinions to an attempt to record facts. In the area of motives however it is always difficult to establish if the motive given is the true motive or simply a socially acceptable reason to mask either a less acceptable reason or an unconscious motive. No attempt was made to examine the motives in relation to performance either in the classroom or the wards.

On examining the actual items in the instrument it must be remembered that these reports are 10-15 years old. Therefore items such as "the chance of getting a house laid on" and "security of employment" which could have been strong motives then, are obviously less appropriate considerations in the present climate where it is almost impossible for student nurses to receive accommodation in a tied house, and where job security after training is less certain.

While these two studies were undoubtedly a big step forward in understanding the reason why people choose to enter nurse training they do have four main weaknesses.

Firstly the reasons offered to the students were derived from opinions of Singh and his research colleagues who had entered nursing quite some time previously. It is questionable whether they had first hand knowledge of young people and their needs. Although it is accepted practice when using a Likert type attitude scale for the researcher to make decisions regarding the items to be used it might have been more beneficial to use people who had recently commenced training to generate the items. Also by only using an attitude scale the respondents were forced into making a choice, with no opportunity to express reasons which they may have felt to be more relevant for them than those presented to them. Thus one cannot be certain that the reasons offered in the papers as the most common are in fact a

totally accurate reflection of the students in the study.

Secondly the timing of the administration of the attitude scale was stated to be within eight weeks of commencement of training. Neither report indicates exactly when during this period this instrument was administered, although it is clear that it was part of a battery of tests given during a two hour session. If the test was administered to all students after the first week of commencement of training then the responses could be influenced by exposure to the opinions of the staff in the Schools of Nursing, as students are most easily influenced during these early days due to them often feeling insecure. If the test was administered in some Schools of Nursing during the first week, and other Schools of Nursing during the subsequent seven weeks then the time variable could have an even greater effect on the range of student responses. Another important factor in relation to administration would be that the data was collected during a two hour test session. Two hours is a long time to remain interested and alert. If the attitude scale was administered near the end of this session one might question whether the responses given were as honest and thoughtful as those that would have been given at the beginning of the session.

Thirdly the method of deciding which were the five most satisfactory items is unclear, but appears to be linked to the popularity of the item. (The five reasons stated to be the most satisfactory are also the five most popular reasons given by the students.) Similarly the method used in the first study (Singh 1970) to determine the unsatisfactory reasons appears to be defined as all items not selected by the respondents as being their first and most influential reason for deciding to take up nurse training. Some of the reasons such as "The long term salary prospects" and

"Opportunities for promotion throughout one's career" could be argued to be satisfactory motives, as this person appears to be able to indulge in divergent thinking and to see nursing as a career rather than a job. Singh also states that the most frequent undesirable reasons given were "No prospect of any alternative career" or "Stop gap", yet in the published tables both these reasons were subscribed to by 3% of the respondents compared to 37% of students who subscribed to "Security of employment" and 37% who subscribed to "The chance to develop one's own way of working". Such discrepancies would suggest either a textual error or a desire of the researcher to 'lead' the reader. In the second study (Singh & Smith 1975) although the reader is told which factors influenced the largest and smallest percentage of stayers and leavers as well as which pragmatic factors equally attracted both groups one is not given a percentage breakdown of the response. Therefore it is impossible to determine the degree of influence of any one factor.

Finally by failing to detail the method of calculating significant differences in the second study between stayers and leavers in relation to such factors as their "desire to help people" and "to be dealing with people rather than things", plus failure to publish the statistical test results it is impossible to evaluate the actual degree of significance between the two groups.

The criticism stands, although Singh does state that the results need to be evaluated in the light of the limitations of the test used. In the second study the main criticism made of the instrument by the authors is that some of the items such as " Work of service to the community" and "A desire to help people" are too general and susceptible to social desirability to distinguish between potential stayers and leavers - a point that requires no further comment.

Cordiner and Hall(1971) were also concerned with attrition within nurse training. Their overall aim was to investigate methods of student selection in an attempt to improve them and thus reduce the attrition rate. Part of their study of 272 students from 9 classes within one School of Nursing in Scotland was concerned with motivation and its relationship to successful and unsucessful students. For the purpose of the study the sample was divided into 2 groups, one containing 180 students who were tested at the beginning of their training and 92 who were tested near the end of their training. 119 of the 180 were also tested near the end of their training.

This study is valuable in that it looks at motivation from a totally different angle. It gives a good description of the Motivational Analysis Test(MAT) and evaluates its effectiveness in acting as a method of student selection to supplement the existing academic criterion. Testing some of the sample both at the beginning and at the end of training enabled any changes in initial motivation to be discerned. Also by comparing the different groups of students near the end of training, similarities between the two groups were established despite the presence of a wide range of extraneous variables.

In relation to the findings regarding the differences between the successful and unsuccessful students it was reported that the total motivation score of the Narcissism/Comfort drive was significantly higher ($P<0.01$) for the unsuccessful student. It was also reported that this same drive was significantly higher ($P<0.01$) on the total motivation score for the students who were tested near the end of their training. In the light of this the value of the findings related to the differences between successful and unsuccessful students becomes doubtful.

Finally by using a test based on American norms the descriptive element of this study may be distorted due to cultural bias. Although the test is still being produced no British norms are available, which may partly explain why apparently no other nurse researcher has used this test since Cordiner and Hall.

Like Singh, and Singh and Smith, House (1977) was also involved in one of the projects related to the experimental schemes of training. The aim of her project was to investigate if the students on experimental courses were different from those on traditional courses in terms of attitudes. Part of her study touched on the values/motives of people at the beginning of nurse training. Two groups of students, 454 experimental course students and 603 traditional course students from 25 hospitals were involved in the project for the 1970 intakes.

When House measured the social values of her subjects using the Allport-Vernon-Lindsey Study of Values scale (AVL scale) she discovered that there was a significant difference between students on the experimental courses and those on the traditional course. She suggested that this difference could be due to a difference in motivation between the two groups.

House argues that a picture of the motives for entering nursing could be attained simply on the basis of House's own description of what constituted an ideal job. Using a 5 point Likert scale she asked the students how important the following were to them in their ideal job:- ability to earn a good deal of money; social status and prestige; security; adventure; travel; and one's real ability being recognised by colleagues. In each of these areas there was a significant difference between the students on the experimental courses and those on traditional courses.

As House herself states, while the differences demonstrated may be due to differences between the two groups of students, they could also be due to differences between the schemes of training, differences such as teaching methods and tutorial support.

Although the findings of the AVL and the Ideal Job profile appear to be sound, the link that House makes between the AVL Study of Values score and student motivation is less so. There are so many uncontrolled variables that could explain the differences between groups on the AVL scale. Variables such as social, cultural and educational background, age or sex. Therefore without examining these variables no conclusion can be reached regarding therelationship between AVL scores and student motivation.

The only recent study on student nurses in the area under review was carried out by Jones (1983) between 1975 and 1981. In her longitudinal study of 341 student and pupil nurses in a West Midlands School of Nursing she examined their reasons for wanting to train as a nurse. Like Singh and Smith's work the humanitarian aspect appears to be the most frequently mentioned reason for entering nurse training. However it would have been more valuable to the profession if similarities or differences between students who completed training and those who did not had been reported.

Finally the only British study in recent years that examined qualified nurses and their reasons for entering nursing was that by Moores et al (1983). This work was part of a wider study concerned with the changing nurse employment patterns. Detailed questionnaires were completed by a total of 2325 qualified female nurses in the course of two projects separated by four years. One was conducted in 1976 and the other in 1980. 35% (806) of the respondents had elected not to remain in nursing, 29% (678) were part time nurses and 36%

(841) were working full time. Once again the humanitarian interest is expressed, along with a desire for something which stimulates. Like Cordiner and Hall, little difference was found between those groups who continued nursing and those who did not. In fact the coefficient of concordance for the three different set of rankings for those who left, the part time nurses and the full time nurses was 0.92 which is clearly significant.

Although some of these studies are useful for the reasons outlined above they all have a similar weakness, namely the rather 'open' or 'general' statements which have been used as a basis for further information gathering. Some statements such as "I wanted to help people" or words to that effect are so general that few respondents would omit it. More pertinent would be questions that asked "In what way?" or "Help whom?". Only then might there be a reasonable chance of the statements being able to descriminate between groups of respondents.

Two non-British studies on the topic have been carried out during the past ten years, both of them in the United States.

Morris et al (1979) carried out a small study on 54 American females who had been accepted for nurse training, but who had not yet commenced training. They found that the sample ranked 'helping people' first and 'interest in science and medicine' second for both self and others. The rank order for the other eight items was different. One of them, 'improvement of health care' was significantly different at the 0.01 level. At the 0.05 level of significance 'financial reward', 'professional status', 'nurses in the family' and 'close relationships with people' were different. Respondents ranked their own motives as more altruistic and less materialistic than most of their colleagues.

Although this is a small study it is interesting for two reasons.

Firstly for the light it sheds on differences in perception between self and others in relation to motives for entering nursing. By viewing others as less altruistic and more materialistic than self one could to some extent be distancing self from the group at a time when group cohesiveness is important. On the other hand it could be that the individual's perception of others may have a projective quality and that the reasons they attribute to others are in fact their own covert reasons. Secondly it is interesting for the method it employs in analysis. By using a C-scale the authors have overcome the problem of the inability to infer equal increments between the assigned ranks. The C-scale refers the normalised ranks for each motive to a common scale to achieve a more meaningful score, and to demonstrate the differentiation and spacing of the various motives on the scale.

The main doubtful areas in this study are the number of items that respondents have to rank and the generality of the items presented. Ten items are difficult to rank meaningfully, as it has been noted that once people make their fourth or fifth choice there is often little difference in their preference for the remaining items. However if the problem of generality is to be overcome some of the items such as 'helping people' would require to be sub-divided which would generate more items rather than less. One way to overcome this would be to present the respondent with more items and rank less of them, although this in turn would rule out the use of the C-scale in the analysis of data.

The last study to be reviewed is similar to the work of House(1977) in that it uses the AVL scale to examine two different groups of students, and infers a link beteen the AVL scale and reasons for entering nurse training. Gavin and Boyle (1985) hypothesised that any changes in the societal and professional values should be

reflected in the changing values of newly recruited students. Consequently they investigated changes in the values of American students entering nursing over a ten year period. The first group of 309 students entered in 1972 and the second group of 161 students entered in 1982.

They reported that there was very little difference between the values of new recruits in 1972 and new recruits in 1982, and by inference little difference in motives for choosing nurse training, despite the obvious societal changes in values and attitudes during that period. However the norm tables used for the 1972 group were developed in the late 1960's, and were the same tables as those used for the 1982 group because they have never been updated. This could account for the similarities between the groups. On the other hand perhaps the power of exposure to social situations and pressures has less to contribute to values than assumed.

1.2 Personality Characteristics.

The fact that like House (1977) the authors link the AVL scores to student motivation leaves them open to the same criticisms as those afforded House. However their link is less tenuous in that they simply imply that values influence career choice rather than that values motivate career choice, a subtle but definite distinction.

The personality of students, both non-nursing and nursing has interested researchers over the years. The tools employed to investigate the personality of the students have been numerous and have ranged from well known instruments such as those devised by Cattell and Eysenck to lesser known ones such as Jackson's Personality Research Form. Some researchers have compared two different groups of

students in relation to personality. Others have related academic achievement to personality types. A few have simply investigated the personality characteristics of a particular group of students. Due to the variety of instruments and approaches, the knowledge of the relationship between personality and student performance, particularly within nurse education, is somewhat fragmented.

The most frequently used instrument in the literature reviewed was Cattell's Sixteen Factor Questionnaire (16PF). Fifteen researchers used this instrument, nine to compare different groups of students, five to investigate the relationship between student personality and academic achievement and one to present a theory of personality.

Cordiner (1968), Singh (1971), Reavley and Wilson (1972), and Lewis (1980) were all interested in comparing the personality characteristics of various groups of nurses. Cordiner compared 319 student nurses from Aberdeen with American nurses as well as comparing those Aberdeen students who were rated as poorly adjusted to nursing with those rated as well adjusted to nursing. Singh, as part of the previously outlined projects in England and Wales, compared 229 students undergoing 6 different experimental courses. Reavley and Wilson compared 61 psychiatric student nurses with the students in Cordiner's and Singh's studies. Finally Lewis compared 47 Registered General nurses from various hospitals with 224 general student nurses from several Schools of Nursing in England. The students were all near the end of their training. She also compared 171 newly qualified nurses with 231 senior nurses working in teaching or administrative posts.

Despite the wide range of groups being compared few significant differences were noted between groups. Cordiner found that the

American and Scottish nurses were similar, particularly in relation to factor B (intelligence) and factor I (tendermindedness). They only differed on factors A, C, and N, suggesting that the Scottish nurses were less forthright, outgoing, and emotionally stable than their American counterparts. No attempt was made to determine statistical differences between these factors. This finding could be reflecting the cultural differences between the groups. Cordiner also found that Scottish students who were considered to be well-adjusted were evaluated by the 16PF to be more intelligent, trusting, adaptable, forthright, self assured and less conservative (factors B,L,N,O, and Q1) than those students considered to be poorly adjusted. As the criteria used to assess adjustment were selected by the students' tutors the author concluded that the linking of the 16PF scores to the adjustment rating was of limited significance. As no criteria were given to the tutors to guide them in their assessment this criticism seems pertinent. However it could be that if Cordiner's students had been tested at the commencement of their training rather than during the eighth or ninth month greater differences may have been found. It is known that maximum attrition occurs during the early stages of training and some of those who felt that they were not well-adjusted to nursing may have left prior to the students being tested.

Singh (1971) compared his six different groups during the first two months of training and reported that with the exception of factor G (expedient/conscientious) no statistically significant difference was noted between the groups. Diploma students were significantly more conscientious and persevering than the other groups in relation to factor G ($P<0.01$). This finding is difficult to explain. If it were linked to academic criteria or class size then one would have expected the graduate nurses to demonstrate the same trend. There is

no obvious explanation for the finding.

When Reavley and Wilson compared their psychiatric student nurses with Singh's sample there was no statistically significant difference between the two groups, although they reported a difference in factor H (shy/venturesome) at the 0.05 level of significance. It could be contended that in the absence of other significant differences this difference could just as likely be due to chance, particularly when it is reported that it is the general rather than the psychiatric students who present as being more socially bold. Tradition has usually presented them the other way round. When they compared their students with Cordiner's students significant differences at the 0.01 level were found in four factors, E,F,I, and Q1. Cordiner's sample, which predominantly consisted of general student nurses, but which included 16 psychiatric student nurses, was more tender-minded (I) than Reavley and Wilson's psychiatric nurses. The psychiatric student nurses were also more assertive (E), experimenting (Q1), and happy-go-lucky (F) than the Aberdeen student nurses. Reavley and Wilson explained the difference in findings between their comparison with Singh's study and Cordiner's study by suggesting that similarity existed with Singh's work because few people had yet dropped out of training. Whereas in relation to Cordiner's sample "..it can be seen that after the period during which most of those who will drop out of training have done so, there are significant differences in personality characteristics....between a group of very largely general nursing students and a group of psychiatric nursing students." A fundamental flaw exists in this logic. When they were comparing their results with Singh's they were comparing new entrants. When they were comparing their results with Cordiner their sample contained new entrants with potential dropouts, and Cordiner's contained students

with about nine months experience. The differences noted could therefore have been due to potential dropouts amongst the psychiatric students. The conclusion drawn by the researchers would only be valid if their sample had been in training for a similar length of time to Cordiner's, to enable potential dropouts to leave. Another explanation for the differences in factors such as E, Q1, and F could be a cultural/geographical one, as the North-East of Scotland traditionally has a more Calvinistic ethos than most areas of England and Wales.

Lewis in her study reported that the personality profiles of nurses near the end of training and newly qualified nurses were similar, but that these profiles differed from the profiles of senior nurses in management and teaching grades. Senior nurses were significantly more intelligent (B+), more conscientious (G+), more imaginative and creative (M+), but at the same time more socially aware and in control of their emotions (Q3+) than third year students and newly qualified staff. They were also more emotionally stable (C+) and self sufficient (Q1+). All six factors were found to be significant at the 0.01 level. From these results Lewis concluded that achievement of high scores in these factors by potential student nurses might imply an element of suitability for nursing, especially in teaching and administrative grades. While such a conclusion could well be true only a longtitudinal study could confirm this. One also wonders if the profiles of these senior nurses would have revealed high scores on these factors during their early training days, given that personality traits have a degee of fluidity and therefore may be subject to the influences of life experiences. Another consideration is that Lewis assumed that all the senior nurses in her study were successful, by virtue of having been promoted, and no account has been

taken of the Peter principle. However it might be that the factors highlighted are desirable qualities for a nurse to have both in relation to theoretical knowledge and practical application, and as more senior nurses appear to be successful than unsuccessful these are qualities worthy of consideration when examining recruitment criteria.

Birch (1975), Singh and Smith (1975), and Jones (1983) were also interested in comparing the personality characteristics of learners by examining those who discontinued training with those who remained in training. Birch compared 18 student nurses who left with 66 students who were training for the General Register. They were selected from five Schools of Nursing around Newcastle upon Tyne. Singh and Smith, as part of the research into experimental training in England and Wales, compared 131 leavers with 704 student nurses who remained in training. Jones examined the leavers and stayers from a group of 197 general student nurses and 36 psychiatric student nurses. They all came from one School of Nursing in the West Midlands during a two and a half year period. She did not state the ratio of leavers to stayers.

Both Birch and Jones reported that leavers were more apprehensive (O+) than stayers, but Jones only found this in the psychiatric leavers. Birch also reported that leavers were more shrewd (N+) than stayers. He found no other differences between the groups and these two were at the 0.05 level of significance. Jones found only two differences between general leavers and stayers. Leavers were more affected by feelings (C-) and more self sufficient (Q2+) than stayers. More differences were noted between psychiatric student stayers and leavers. Apart from being more apprehensive (O+) the psychiatric student leavers were found to be less intelligent (B-), more expedient (G-), more experimenting (Q1+) and more likely to demonstrate

undisciplined self-conflict (Q3-) than those who continued training. Jones indicates that these findings were statistically significant but she fails to indicate at what level. Singh and Smith divided their leavers into voluntary leavers and academic failures. They noted a significant difference at the 0.01 level between academic failures and stayers or voluntary leavers on factor I. The academic failures were more tough minded (I-). They also found that those who discontinued or failed were more expedient (G-) than those who continued training ($P<0.01$).

Although some differences are indicated in these reports, especially in relation to the psychiatric students, what is more striking are the similarities between the stayers and the leavers which would indicate that the 16 PF is of little value as a predictor in the area of attrition. However it could be useful to note that the psychiatric leavers and leavers on experimental courses were more inclined to disregard rules and follow their own urges, traits which might be considered undesirable in nursing. It would have been helpful to know the level of significant difference of these two factors in Jones's study in order to compare it with Singh and Smith's findings. In relation to Lewis's work the psychiatric student leavers were more experimenting, a trait which Lewis felt might imply an element of suitability for nursing, especially in the administrative and teaching grades. This could serve to remind one that not all differences found in leavers are necessarily negative qualities in relation to recruitment.

Burton (1972) was interested in the personality profiles of 66 psychiatric student nurses as they related to theoretical and practical performance. Over a three year period students were designated satisfactory or unsatisfactory. Burton identified six

profile types within the sample, but found that only one was unevenly distributed and occurred more frequently in the unsatisfactory category. This type of student was more intelligent (B+), more affected by feelings (C-), more expedient (G-), more suspicious (L+), more shrewd (N+) and more apprehensive (O+) than the normative reference group. Although the researcher fails to indicate who the reference group were it is likely to be USA college students because no British student normative groups were available at that time. The presence of apprehensiveness in this profile mirrors Singh and Cordiner's finding in relation to leavers. The leavers in Singh's study also demonstrated 'shrewdness', and the leavers in Cordiner's study were also 'affected by feelings' and were found to be 'expedient'. The voluntary leavers and academic failures in Singh and Smith's study likewise were found to be 'expedient'. However although this profile type was identified as having more unsatisfactory than satisfactory students in it, the difference was not demonstrated to be statistically significant ($P<0.2$).

One other study compared two different groups of students by using the 16PF. Adams and Klein (1970) compared 50 American nursing students with the normative group of American college students. They found six factors that were statistically different at the 0.01 level. The nurses were more affected by feelings than emotionally stable (C-), more shy than venturesome (H-), more suspicious than trusting (L+), more imaginative than practical (M+) and more tense than relaxed (Q4+). These findings are dissimilar to the previously outlined studies of British student nurses. Due to age and cross cultural differences one would expect the British nurses to be different from USA college students. However Cordiner's study suggested fewer areas of difference between British and American nurses than Adam's and

Klein's work implies. In fact the only factor that is considered different in both studies is factor C where British student nurses are more 'affected by feelings' and less 'emotionally stable' than their American counterparts. Cordiner's work contradicts all the other factors highlighted by Adams and Klein as being different from the British student nurses reported in the other British studies. Perhaps one of the American samples was atypical of American student nurses or perhaps the two samples of American student nurses were taken from two different forms of nurse training. Either reason might partly help to explain the differences in the findings.

Of the five studies concerned with the relationship between the personality of student nurses and academic achievement three are American.

Johnston and Leonord (1970) studied 75 female nursing students participating in a baccalaureate nursing programme at the University of Wisconsin. Michael, Haney, Lee and Michael (1971) studied 128 students during their training at Los Angeles County Hospital. Wittmeyer, Camiscioni and Purdy (1971) studied 119 students at the Ohio State University School of Nursing. Their findings are mixed. Wittmeyer et al report that the 16PF has no predictive ability in relation to academic success. Johnston and Leonard report a marginal correlation ($P<0.1$) in relation to four factors. Conscientiousness (G+) is positively correlated with academic achievement and happy-go-lucky (F+), tenderminded (I+) and imaginative (M+) are correlated negatively. Michael et al also report a significant positive correlation of factor Q2 (self sufficient), again at the 0.05 level of significance. There could be four possible reasons for this finding. Firstly the massive geographical distances between the three samples, with the two studies that show some degree of

correlation drawn from the Eastern side of the USA, and the other one which demonstrated no correlation being drawn from the South-Western area. In a country comprised of Federal States, such geographical distances could well create cultural differences which could be reflected in the personality profiles. Secondly the wide variation in schooling from State to State in America could have an influence on both personality and academic performance which may partly explain the differences in the research findings. Thirdly the length of time spent in nurse training, the type of course offered, and the qualifications necessary to commence training are not standardised throughout the States. These variables may explain the lack of agreement between the studies. Finally none of the researchers stated when they administered the 16PF. As all the studies were longitudinal it is possible that one researcher could have administered the questionnaire during the first week of nurse training before the students had settled in, and another researcher could have administered the questionnaire near the end of training. Due to the influence of the actual training one could expect some degree of change in some of the personality traits. If the questionnaires for the three studies were administered at different stages in training then some differences in findings would not be too surprising.

The only British study directly concerned with the relationship between personality of students and their academic achievement was carried out by Hack(1973). (Jones(1983) only considered one factor of the 16PF, Factor B, and its relationship to academic achievement.)

Hack studied 88 Health Visitor students from two intakes at a polytechnic in the Midlands. During the fourth week of their course he administered a battery of tests which included Cattell's 16PF first order factors and two second order factors(Q1 and Q2). He examined

their relationship to a mean standardised score based on three examination papers, a case study, and a project exercise. Jones in her longtitudinal study described earlier, administered the 16PF twice, once at entry to training and once in the second year of training. Although he was predominantly interested in describing the personality characteristics of new entrants to nurse training and learners who left, he also examined the relationship between factor B (intelligence) and State Final examination results.

Hack reported a positive significant correlation ($P<0.001$) between the second order factor extroversion (Q1) and theoretical success. He also found a significant negative correlation between extroversion and an interest in things, and extroversion and an interest in codifying, classifying and arranging data. The level of significance is not reported. The finding of a correlation between extroversion and theoretical success conflicts with most studies of university undergraduates which suggest a positive relationship between introversion and success. Perhaps the fact that Health Visitor students are older students with a wealth of previous nursing experience and an obvious liking for relating to people deeply might help to explain this finding. Due to these factors they have more confidence than younger university undergraduates and are thus more likely to be extroverted than introverted. Alternatively perhaps they are simply a more extroverted group per se, and as a result are able to ask questions and derive more from the learning situation, which is then reflected in their theoretical results. Such speculation serves to demonstrate that correlation does not necessarily mean causation. It is unfortunate that the researcher failed to report the levels of significance of the negative correlations because they can sometimes be more informative than positive correlations.

If Hack had not decided to calculate two of the second order factors he would have reported that the 16PF failed to act as a predictor and this would have been untrue. Consequently one is left speculating how many other researchers have ignored the second order factors and perhaps missed some interesting and possibly valuable information. One is also left wondering why Hack, who was obviously fairly meticulous in relation to method and detail, decided not to calculate the other second order factors. The most likely reason is probably lack of time, as the calculation if done manually is time consuming. Of the studies so far reported only Wittmeyer et al investigated second order factors.

Jones reported that there was no consistent association between factor B and the State Final examination results (pass/fail) for the 36 psychiatric student nurses in her study. She did find an association between this factor and the Final examination results for the 197 general student nurses in the study. Such findings are difficult to evaluate because of the lack of detail reported regarding the study method. The Statistical Package for the Social Sciences (SPSS) was used to carry out data analysis, but Jones failed to state which tests demonstrated the reported association between factor B and the examination results. She simply reported that the "cross-tabulations" were carried out between the variables. She also failed to report whether the factor B score was taken from the first or second administration of the 16PF, and if there was any difference between the scores on this factor in the two administrations. Her rationale for testing twice was that the first testing could be deemed to be representative of the general public and the second (after most of the attrition had occured) to be representative of learner nurses. It is unlikely that the first testing did represent the general public

as those considered unsuitable for nurse training were already excluded from the sample. Even if, as she suggests, the first testing had taken place during recruitment but prior to selection, the sample might still not be representative of the general public as those who are attracted to nursing will to a degree be self selective.

Perhaps the failure to show any association between factor B and the examination results is due to the small number of psychiatric students in the sample. Alternatively, and probably more likely, it could be due to other non-cognitive variables such as factors C and G. Jones had noted that the psychiatric students were significantly less conscientious (G) and significantly more happy-go-lucky (F) than the general student nurses. Once again she failed to state the actual level of significance, or the statistical tests employed. The personality difference between the two types of student could have led the psychiatric students to be slightly less diligent in their preparation for the Final examinations as reflected in Jones' study.

The main collective criticism of all these studies is that, in all but three, Form C rather than Form A or B was administered. The three exceptions are Burton, Johnston and Leonard, and Wittmeyer et al. Cattell recommends that for research and for accurate individual work with most university and high school students forms A and B should be used. He also states that if time allows only one form of the 16PF to be utilised the most appropriate one is either Form A or Form B (provided the subjects have attained the appropriate reading level.) Clearly most researchers have either been unaware of these recommendations or have chosen not to adhere to them, probably due to lack of time. Form C contains 105 items and requires about 30-40 minutes. Form A contains 187 items and requires 40-55 minutes.

Burton is the only researcher who has stated an awareness of

Cattell's recommendations to test twice using parallel forms. He did not do so due to time constraints, but used Form A and tempered his findings accordingly.

Finally Reeve (1978) utilised the 16PF to present a theory of personality which involved using four factors of the 16PF (factors C,O,Q3,and Q4) and totalling the scores of these factors to outline a high, medium, and low risk personality in relation to suitability for nurse training. His explanation of how to calculate from the four scores whether a candidate represents a high, medium or low risk personality is unclear and requires to be expanded. In his study he utilised 53 pupil nurses and 45 student nurses who had completed their final examinations to test his theory. He found that the medium to high risk group, among other things, contained the majority of those who failed in written and clinical examinations and manifested more 'personal' problems. A major weakness of this study is that the 16PF was administered to the sample after they had taken their State Final examinations. One would naturally expect a change in Q4 during training and after examinations. This is confirmed by Birch who found that the Q4 score was higher on entry to training, lower eight months later, but increased again just before State Final examinations. It seems reasonable to assume that the score falls again after the examinations. One could also reasonably expect that a greater degree of maturity might be attained by the end of training. It might have been valuable to test the theory by using new entrants and designing a longitudinal study. Another consideration is the choice of the 16PF factors used to develop the theory. Reeve selected these four factors "from research and empirical evidence in other professional occupations". He appears to have overlooked Cattell's note of caution that factor Q3 is more liable to fluctuation with the psychological

state than are the others that he has selected. The value of Reeve's work is that he is trying to move away from examining differences between groups on a single 16PF factor, and instead is suggesting that the total balance of several factors is more meaningful when one is trying to assess whether a candidate is likely to be successful during nurse training and suitable for nursing. Lewis's findings on the four factors in relation to her group of successful senior nurses is interesting. She concurs with Reeve on factors C and Q3 in that success appears to equate with a high score on these factors. Reeve suggests that successful nurses should have low scores on the other two factors, but Lewis's group attained average scores on both of them.

Another frequently used instrument to investigate the personality of students was the Eysenck Personality Inventory (EPI). Eight non-nursing and four nursing studies which used it were reviewed.

Wankowski(1968) studied a random sample of 118 male and 53 female undergraduates attending Birmingham University. His paper formed part of a larger team study which was investigating several factors affecting the performance of students. He reported that the EPI suggested that in general high achievers (honours class 1, and class 2 div.1) tended towards stability and introversion, particularly if they had a low stress index. Lower achievers (honours class 3 and ordinary degree) tended towards neurotic introversion and non-achievers tended towards extroversion. If non-achievers had clear set goals they also tended towards neuroticism, if their goals were less clear they tended towards stability. The exception to the above findings were females who were high achievers but who had less clear goals. They were inclined to be stable extroverts rather than introverts. These findings conflict with earlier studies reported by Furneaux (1962) and

Kelvin, Lucas and Ojha (1965). They both suggested that the high academic achiever was introverted and neurotic rather than stable.

Entwistle and Entwistle (1970) and Entwistle and Wilson (1970)(1977) generally support Wankowski's finding of a statistically significant relationship between introversion and high academic achievement, although the Aberdeen sample of Entwistle and Wilson's 1977 study only predicted academic success for first year male students in the Science Faculty. The findings regarding stability/neuroticism are less consistent. While the Lancaster part of Entwistle and Wilson's 1977 study supported Wankowski's finding that on the whole stability was associated with higher academic achievement, the Aberdeen part of the study reported that neuroticism/stability was not clearly related to either success or failure. The two 1970 studies also failed to find a relationship between stability and high academic performance.

Cowell and Entwistle (1971) and Kline and Gale (1971) not only reported no significant relationship between neuroticism/stability and high academic achievement, but they also failed to find any significant difference between introversion and extroversion and examination results. Cowell and Entwistle suggested that they failed to find a significant relationship between introversion and high academic attainment due to the nature of their sample which consisted of 117 students attending ONC courses. They suggested that intellectually able introverts were more likely to be offered places in universities than extroverts and that as a result their sample was biased towards the more academically able extrovert and contained less academically able introverts. Certainly their data seems to support this theory.

Kline and Gale's finding could also be related to the sample used.

It consisted of 455 psychology students during their first year. Due to the type of student used one could speculate that they possibly had previous knowledge of the EPI, or that the sample was a biased one because of the degree of self selection that occurs in relation to such courses.

The variations in the reported findings related to the use of the EPI could be due to differences in the types of institutions that the samples are drawn from, and/or differences in the types of courses being undertaken. The latter point was demonstrated in Entwistle and Wilson's 1977 study in relation to Arts and Science students. The variations could also be due to some of the studies containing small sample numbers.

The nursing studies that employed the EPI do not reflect these findings. Long and Gordon-Crosby (1981) in their study of 59 third year student nurses and 37 new entrants in a New Zealand School of Nursing reported that the EPI failed to discriminate between success (theoretical and clinical) and failure, or between stayers and leavers. The latter finding supports the results of Brown and Stones study (1972). They administered the EPI as part of a battery of tests in a longitudinal study of 500 male students from several Schools of Nursing in England. They found no significant differences between stayers and leavers using the EPI. Hack (1983) also reported that the EPI failed to discriminate between high and low achievers in relation to the written examinations, course work and clinical assessment of 42 Health Visitor students. Dellar (1981), in a longitudinal study of 157 Health Visitor students reported that performances on the EPI related most erratically with examination performance. The overall trend was similar to that reported by Hack (1973) in relation to the 16PF second order factor Q1, but was not statistically significant.

However the scores for some individual years showed a negative correlation with examination success.

This lack of similarity between the non-nursing and nursing studies might be explained in two ways. Firstly the types of students used in the nursing studies are atypical. One is exclusively a male sample, one is non-British and the other two are Health Visitor students who are pre-trained and older. The more 'typical' entrant to nursing is probably approximately eighteen to twenty years old, a school leaver and predominantly female. The first two factors are similar to undergraduates. Secondly student nurses are taken from a wider section of the population range in relation to their academic ability than undergraduates, therefore one would expect fewer student nurses to be at the extreme ends of the EPI scale since there appears to be a positive correlation between introversion/extroversion and high/low academic achievement. As far as can be ascertained by a survey of the major nursing journals the EPI has not been administered to a more 'typical' group of British student nurses to date. Finally consideration of a difference in method between the non-nursing and nursing studies has proved fruitless, as differences in method between studies exists in both groups.

The use of the Edwards Personal Preference Schedule (EPPS) in nursing research was relatively popular in the 1960's, mainly in America. Reece (1961) used it to describe differences between stayers and leavers. Smith (1968) combined it's use with the AVL scale, and using factor analysis reduced the combined 21 variables to 7 factors, each of which he suggested described a 'personality type' within nursing. Hafer and Ambrose (1983) commented that Smith's work "reflects the nursing stereotype that is unfortunately still held by many people today." While this criticism may be valid for some of the

factors identified, some of these 'types' of student nurses can still be seen in the clinical areas today.

Bailey and Claus (1969) used the EPPS to try to identify differences in personality between nursing students and college students, as well as examining student nurses training in different institutions which had a variety of training programmes. They reported a significant difference in 11 of the 15 scales between student nurses and college students. They also found that although students from different institutions did not have identical need patterns they did have similar trends.

Recently two non-British researchers have used the EPPS. Zagar Jack and Walter (1982) administered it along with the Minnesota Multiphasic Personality Inventory (MMPI) to 570 American student nurses in an attempt to predict grade point average, (a clinical performance measurement) and graduation from nurse training. Neither test proved useful. Long and Gordon-Crosby (1981), whose New Zealand study was described earlier, reported that successful student nurses scored higher on 'Deference' and 'Affiliation' than unsuccessful nurses, and lower on 'Dominance' and 'Heterosexuality' than unsuccessful nurses.

Although the findings regarding 'Deference' and 'Dominance' confirm Reece and Bailey and Claus's finding (1961)(1969), it is interesting to note the absence of high 'Nurturance' and low 'Autonomy' as found in the work of Reece et al. Perhaps this is a reflection of changes within society which have occurred over the past fifteen years.

The most likely reason for the EPPS not having been used much in recent years is that it employs ipsative scores and then converts them to normative percentiles which makes the interpretation of the scores

less meaningful. Because of this method of scoring two individuals with identical scores on the EPPS may differ markedly in the degree of strength of their various needs. Thus by the time group norms have been calculated and then compared with other group norms the results are greatly distorted and of questionable value. This might explain Zagar et al's lack of success with the EPPS.

A test which appears similar to the EPPS, Jackson's Personality Research Form (PRF), was used by Hoffman (1970) to compare the personality of 80 American students on a practical nursing programme with what is described by the researcher as 'a more general student population'. The instrument consists of 12 scales, seven of which have the same names as scales on the EPPS. Hoffman reported significant differences on all 12 personality scales, eight at the 0.01 level and four at the 0.05 level. The findings were similar to those of Reece (1969), and Bailey and Claus (1969). Evaluation is difficult due to lack of information regarding the instrument used, and the fact that no other nurse researcher appears to have used it.

The MMPI has also been employed in American nursing research. As mentioned earlier, Zagar et al used it as well as the EPPS, to try to predict both grade point average and nursing graduation, with no success.

Thurston and Brunlik (1965) administered it to 172 females during the selection process at two Schools of Nursing, together with the Rotter Incomplete Sentence Blank (ISB), as part of a test battery. The purpose of the administration was to try to determine personality differences between academic achievers, underachievers and failures. Thurston, Brunlik and Feldhusen (1968) then replicated the 1965 work using 198 students from the same two Schools of Nursing plus 247 from another School of Nursing. Burgess and Duffey (1969) administered it

along with other tests to an experimental group of 76 student nurses and a cross-validation group of 74 student nurses. Both groups were female and new entrants to the collegiate programme of nursing at the University of Kansas Medical Centre. They were investigating whether the MMPI could determine differences between students who had high grade point average in first year and students who had low grade point average. Generally, these three earlier studies support Zagar et al's finding that the MMPI is of no value in predicting grade point average or academic achievement. Thurston and Brunlik (1965) and Thurston et al (1968) reported that none of the 16 MMPI predictors were of any value. Burgess and Duffey reported that eight of the factors correlated with grade point average scores at the 0.05 level of significance in either the experimental group or the cross-validation group, but that none were significant in both groups.

Since initially the MMPI was developed to measure traits which are associated with psychopathology these findings are not surprising. Examples of the scales are 'Depression', 'Masculinity-Femininity' and 'Paranoia'. Examples of items to which the subject gives the responses "True", "False" or "Cannot say", are "I do not tire quickly", "I am worried about sex matters" and "I believe I am being plotted against". Although one cannot assume that a high score on, for example, the Paranoia Scale indicates the presence of paranoia, one would not expect people who are presumed to be mentally healthy to produce extreme scores in statistically significant numbers on the MMPI.

Another factor which could have influenced the results was that in the two studies involving Thurston the administration of the MMPI and the Rotter ISB was not supervised, as the inventories were distributed through the post. Thus the time of administration of the tests, and

the environment of the subjects, plus their interpretation of the inventory instructions are uncontrolled variables. Even if in these two studies a substitute for the MMPI and a different method of administration had been used, the results may still have been open to doubt because of the method of defining achievers and underachievers. This was done by the various members of the faculty committees stating their opinion as to whether a student after eighteen months in training was meeting his/her full potential or not. The only objective definition was the one applied to failure. This was defined as someone who commenced training and then either failed or withdrew. Perhaps the use of test results or objective assessments would have helped to ensure a more objective definition of the two terms.

In relation to the findings from the Rotter ISB both Thurston and Brunlik (1965) and Thurston et al (1968) reported that adjustment/maladjustment was unrelated to success in nursing education.

Birch (1975), whose study of stayers and leavers was outlined earlier in relation to the administration of Cattell's 16PF, also used the Rotter ISB. He reported a significant difference at the 0.02 level between stayers and leavers, resulting in 56% of the leavers being identified. However when the sample was divided into student nurses and pupil nurses it was impossible to predict the stayers and leavers in each group, possibly due to the smaller size of the two samples.

The Rotter ISB is a projective technique which depends on the assumption that personality should be judged globally rather than focused on various personality traits. Although it is possible to check scoring reliability between various teachers by using correlation tests, there is a high degree of subjectivity in the

scoring method, because the interpretation of individual responses is subject to the personal theoretical bias of the marker. On these grounds the results obtained from the Rotter ISB require to be treated with some caution.

A different approach was taken by two other researchers.

Haffer and Ambrose (1983) studied 114 student nurses enrolled in three Nursing Schools in Nebraska. They administered an 80 item questionnaire which consisted of Bagozzi's Inner and Other Directedness Scale and his Materials Ambition Index, Duncan's Achievement-Motivation Index and Stolker's Perception of Nursing, plus 20 questions designed specifically for the study. From the responses seven student nurse profiles were identified using the technique of factor analysis. The authors claim that the seven profiles "represent distinct components of the student nurse population". They reported that the most common profile in their study was "the insecure, other directed doubter" (63.7%). This student type was described as tending "to live by other people's standards and strive to be what other people expect them to be. They also change their opinions to please others...". The least common profile was "the maternal regimentarian" (2.8%) who was described as the stereotype of the caring attending nurse "...who enjoy(ed) being needed by others and being recognised for their accomplishments."

It is difficult to accept that these seven profiles do "represent distinct components of the student nurse population", partly because of the small sample numbers, partly because any American sample taken from one area is unlikely to reflect the vast cultural/geographical differences found across the USA and partly because the system of nurse education is not standardised. The authors warn that although the four scales have been tested and validated much of the research

in their study was exploratory. They also state that " many of the issues that were created through the data analysis are interpretative and inconclusive." They conclude that their work requires to be validated by others, but that the method of study has proved valid in "parallel disciplines" and that the nursing profession may wish to refine the research that they have begun. This theory of student profiles may well be worthy of further investigation.

Mearns (1985) tried to isolate personal, social and academic predictors of future theoretical performance. Personality was one of the variables included under the heading of personal predictors. The sample consisted of 112 students on a BSc (Nursing) course at the University of Witwatersrand in South Africa. The sample was recruited over a period of six years. The personality of the students was assessed just prior to admission to the course by the nursing principals using a precoded sheet. It is not apparent whether this sheet was designed by the researcher for the study or by University personnel for selection purposes. The chi-square test was used to determine differences in personality between those students with satisfactory theoretical performance and those with unsatisfactory performance. In relation to personality no significant differences were found between the two groups.

The precoded sheet used cannot be evaluated as it was not published. However it must have had an overall grading in order to generate nominal data for statistical testing. Reducing the complexities of personality to such a weak level of measurement throws doubt on the value of including personality in this study.

From the above review on personality measurement, it is clear that more than one personality theory is underpinning the various instruments used. However any correlation found between the

compilation of any specific test, its underlying theory, and the measured outcome of the test may be less important than the individual's underlying personality processes which produce the measured outcome. The debate regarding the various personality theories is limited by the extent to which it allows the prediction of specific behaviours. What is of greater practical significance is the possibility that specific personality dimensions may be relevant to particular behaviours and/or occupational activities. However even when one has well defined personality dimensions, behaviour is often situationally determined, and life circumstances may be more important than personality dimensions. For example an individual's experience of unemployment may have a greater effect on his/her behaviour within any given job situation, or in relation to how he/she interacts with those senior to him/her, than the effects of specific personality dimensions.

Thus all of the above research reports must be reviewed not only in relation to the instruments used and the theories underpinning them, but also in relation to the life experiences and environmental situations of the various samples prior to entering nursing and at the time of testing, both as a group and individually. The interaction between experiences, environment and self cannot be ignored when examining personality characteristics.

1.3 Vocational/Personal Preferences.

An examination of related literature concerning the vocational preferences of student nurses reveals that there is a variation in both the instruments used to measure vocational preferences/interests and in the study design. The instruments used are designed to assess general areas of interest, based on the assumption that if an

individual is doing something that interests him he will work hard and achieve satisfaction. Hence the dual heading of this section.

Some researchers have examined vocational interests/preferences in relation to student attrition, some have studied its relationship to academic and/or clinical success. Others have chosen to describe the vocational interests/preferences of their sample without dividing them into comparative groupings.

The two most popular instruments used were the Kuder Vocational Preference Record (KVPR) and the Alport-Vernon-Lindzey Study of Values (AVL). Other instruments used included Rosenberg's Survey of Occupational Values and the Connolly Occupational Interests Questionnaire.

Three researchers used the Kuder Vocational Preference Record in their studies. Levitt, Lubin and Devitt (1971) and Birch (1975) used it when they were examining attrition rates.

Levitt et al administered it as part of a test battery to 425 American students at the beginning of their nursing training. Their data was collected over a period of three years. Only the 'Outdoor' score on the KVPR demonstrated a significant difference between those who completed nurse training and those who left. The mean percentile score for those who completed training was 61 compared with 52.9 for those who left. The authors did not publish the mean scores for the other nine scales therefore no profile of the total sample is available to allow general comparisons with other studies.

Birch in his Newcastle upon Tyne study, outlined in the previous section on personality characteristics, also administered the KVPR. He reported that the students who remained in training had a mean percentile of 90 on the 'Social Service' scale compared with a mean

percentile score of 70 for those who left. The standard deviation for both groups was similar. The mean score on the 'Social Services' scale for Birch's students who continued training is higher than Kuder's normative reference score for nurses which is 83. The mean score for both of Birch's groups on the 'Musical' scale is lower than the Kuder normative reference score which is 68. This could suggest that cultural bias may be affecting the scores. However such an observation can only be tentative, partly because it is based on only two scores, partly because Birch's sample represents a very small area of the United Kingdom, and partly because of the way in which the Kuder scores are calculated. The latter point will be expanded on later. Birch also included an overall KVPR profile for his sample. Although this profile contained pupil nurses as well as student nurses he reported that only on the 'Literary' scale was there a significant difference at the 0.05 level between student nurses and pupil nurses. The student nurses mean score was at the 30th percentile, whereas the pupil nurses mean score was at the 48th percentile. Overall the highest mean score was on the 'Social Service' scale at the 90th percentile and the lowest mean score was on the 'Clerical 'scale at the 18th percentile. The 'Mechanical', 'Scientific', and 'Artistic' mean scores lay between the 50th and 70th percentile and the 'Computational', 'Persuasive' and 'Literary' scales lay between the 25th and 50th percentiles.

Birch used the F-test and the t-test to compare those who remained in training with those who left. By using such methods of analysis each scale is examined independently, and no account is taken of any possible relationship between the scales. A multivariate form of analysis may have highlighted differences in scale clusters between those who continued in training and those who left. For example, is a

combination of a high 'Social Service' score and a high 'Musical' score found exclusively in those who continue with training, or is a similar pattern also demonstrated in those who leave nurse training? Such questions cannot be answered using univariate forms of analysis. Furthermore Birch has ignored the recommendation by Anastasi (1961) not to use percentiles or other normative types of scores when analysing data, except to make very general comparisons with other studies. This recommendation is due to the ipsative nature of the scores for the nine scales of the KVPR, which ensures that a very high score on any one dimension of the KVPR will automatically lower the scores of the other nine dimensions. Thus the observation made earlier in relation to the differences between the Kuder normative scores for the 'Musical' and 'Social Service' scales and Birch's findings for the same scales must be tempered by the knowledge that these scores are ipsative in nature.

Burgess and Duffey (1969), whose American study was outlined earlier in relation to the administration of the MMPI, also administered the KVPR to elicit if it could discriminate between American nursing students who had a high Grade Point Average (GPA) in first year and students who had a low GPA. They reported that the 'Literary Interest' scale significantly correlated with performance in both the experimental and the cross-validation group at the 0.05 level of significance. The mean score for the experimental group was 65.8, and 65.43 for the cross-validation group. The 'Mechanical' scale demonstrated a similar significant correlation in the experimental group only (mean score 23.32), while the 'Artistic' scale correlated significantly in the cross-validation group only (mean score 28.28). There was no apparent correlation between performance and the 'Social Services' scale in either group. (Mean score for both groups was 66)

A positive facet of this study is the inclusion of a cross-validation group which strengthens the credibility of the findings, since the subjects were all selected from the same educational establishment.

Although the mean score on the 'Social Services' scale is lower than that found by Birch it is relevant to note that in both studies it is recorded as the highest scored scale, which could indicate that it may be related to professional choice. Similarly although all the mean scores of this study are noticeably lower than the mean scores of Birch's sample, with the exception of the 'Clerical' score, the general overall profile of the two studies is similar on six of the remaining eight scales. The two scales that are dissimilar are 'Artistic' and 'Musical'. As the mean scores of the Burgess and Duffey sample are similar to the Kuder mean scores perhaps the differences highlighted between Birch's study and the Burgess and Duffey study are reflecting differences in cultural preferences generally between two nations, rather than differences between British and American nurses per se. Again such comparisons must take into account the ipsative nature of the Kuder scores.

The AVL Study of Values has been used by Hack (1973), and Entwistle and Wilson (1977) to attempt to predict academic success. It has also been used by Singh (1971) to describe student nurses.

Hack, whose study of 83 Health Visitor students was outlined earlier in relation to the use of Cattell's 16PF Questionnaire, used the AVL Study of Values questionnaire in an attempt to discriminate between students with high and low academic results. The questionnaire failed to discriminate significantly between scores in any of the six values.

Entwistle and Wilson in their Lancaster study administered the AVL

Study of Values questionnaire to 2500 students from seven universities in the North and Midlands of England. They, like Hack, reported that in themselves the six value scales were unrelated to academic performance when analysed using univariate statistical methods. When cluster analysis was applied to the data a high 'Religious' value and 'tendermindedness' were associated with above average degree results. Similarly a high 'Aesthetic' value in conjunction with qualities described as 'syllabus free' and 'conscientious' was associated with a high degree result. Conversely a very low degree result was associated with a fairly high 'Economic' value combined with qualities described as 'high numerical ability', 'low motivation', and 'poor study methods'. While some of the scales may contribute to a predictive profile, their individual contribution appears to be small and thus relatively inconsequential.

Singh, as part of the projects in England and Wales outlined in both previous sections, used the AVL scale to describe the values held by student nurses. He reported that the scores for five of the six AVL values were very similar amongst his six groups of experimental student nurses. The exception was on the 'Aesthetic' scale where the score for graduate nursing students was significantly higher ($P<0.01$). The reason why graduate student nurses should have a higher 'Aesthetic' score is unclear. Their socioeconomic background is similar to the other experimental course student nurses. However a higher percentage of them attended an Independent school where perhaps greater emphasis was placed on aesthetic value than in the Local Authority schools attended by the majority of the other experimental course students.

When the 229 experimental course students were compared with the 625 student nurses on traditional courses the two groups were found to

be similar on four of the six values. The experimental course students had significantly higher scores on the 'Social' scale and lower scores on the 'Economic' scale than the student nurses on traditional courses.

Singh also compared the 229 experimental course students with 147 female undergraduates. He found significant differences between the groups on all six values. At the 0.05 level of significance the student nurses had a higher score on the 'Religious' scale than the undergraduates, and at the 0.01 level they were more interested in emphasising useful and practical values as measured by the 'Economic' scale. At the 0.001 level the student nurses were found to have higher scores on the 'Social' scale, and lower scores on the 'Theoretical' and 'Political' scales than the sample of female undergraduates. Such a profile for the student nurses would suggest that although they have an obvious interest in people and issues of practical value, they do not appear to have a great interest in theoretical learning. This finding could have implications in relation to study habits and examination success. However one must always remember that the AVL produces ipsative scores and therefore a very high 'Social' score will automatically lower the scores of the other five values. The same observation is pertinent when evaluating the differences between the values of the experimental and traditional course students.

The AVL scale of values is based directly upon Spranger's 'Types of Men' (1928). Each value is characterised by a group of factors that are derived from Spranger's theory. Each value therefore encompasses a fairly wide theoretical concept. A narrower approach is taken in Rosenberg's Survey of Occupational Values, although it does cover areas which approximate some of the AVL scales.

Rosenberg's Survey is based upon Ginzberg et al's theory (1951) that there are three elements of work satisfaction: the nature of work in the form of income and prestige; the work activity itself; and the related satisfactions such as working in a particular setting or with a particular group. Rosenberg's Survey consists of a list of 10 possible factors which could be obtained from the ideal job and which reflect these elements of work satisfaction. From this list Rosenberg has isolated three clusters of values namely 'self expression orientation', 'extrinsic rewards orientation', and a 'people orientation'. Two researchers have used Rosenberg's Survey in their studies of nurses.

Collings (1980) administered it to 300 nurses in training from 4 West Yorkshire establishments. His sample comprised of student and pupil nurses, degree course nurses and pre-nursing students. The age range was seventeen and a half years to twenty four years of age. Sheahan (1983) administered a modified version of the Survey to 170 qualified nurses. His sample consisted of nurses attending first line management courses, student tutors, and qualified tutors. The age range was twenty four years to thirty seven years of age.

Despite the wide range of variables both in and between the two studies the ranking of the ten scales was remarkably similar. Both groups considered that 'the opportunity to work with people rather than things' was the most important characteristic of the ideal job. 79% of the students and 100% of the trained nurses rated it as such. Similarly 54% of the students and 83% of the trained nurses considered 'being helpful to others' as the second and third most important characteristic of the ideal job respectively. 'Status and prestige' was ranked tenth by both groups. 'The chance to earn good money' was ranked sixth by the students and seventh by the trained staff. The

most notable difference between the two groups was that while all the qualified staff felt that having a job which provided an opportunity to 'use special abilities' was very important and ranked first equal with 'working with people', only 47% of the nurses in training felt that this occupational value was important. However they did rank it third.

When Collings compared the different groups of nurses in training within his sample he found statistically significant differences on three of the ten scales. The chi-squared test was used to compare the groups. Student nurses following the basic three year training were more interested in 'earning good money' than the BSc student nurses or the pupil nurses ($P<0.009$). Pupil nurses valued the characteristic of 'helping others' more than the other students ($P<0.002$), and the BSc student nurses were more interested in 'exercising leadership' than the pupil nurses or the students on the three year programme.

He also compared his total sample of nurses with other students such as social workers, teachers, pure science students, biolgy/zoology/botany students and health science students. The t-test was used to compare the nursing students with the various groups of non-nursing students. Nursing students and Social work students were significantly different from other groups in relation to their desire to 'work with people and help others. ($P<0.001$ for all groups)

The profiles of nurses outlined in these two studies clearly indicate that nurses describe the characteristics of their ideal job in terms of 'people orientation' first. 'Self expression orientation" is a less important second choice, and they have a very low "extrinsic rewards orientation'. By asking respondents to rate characteristics of an ideal job one cannot automatically assume that the

characteristics rated reflect the actual job done by the respondents. If the respondent is contented in nursing then the ideal and the actual job could reasonably be expected to correlate. However if the respondent is unhappy in nursing the characteristics of the actual and the ideal job may differ. In the present climate of unemployment and restructuring within nursing it would be difficult to argue that all student nurses and trained staff remain in nursing primarily because they are experiencing job satisfaction.

It must also be borne in mind that probably only the first five rankings are worthy of consideration, due to the known inconsistencies of respondents when instructed to rank more that five items.

The differences reported by Collings between nursing and non-nursing students requires to be treated with caution due to the type of analysis used. The Survey of Occupatioal Values is rated on a five point Likert Scale. The data lends itself to classification within a nominal or ordinal scale. As one cannot assume an equal distance between the five points the data cannot be considered an interval level of measurement. Despite this the t-test was used to analyse differences between the nursing and non-nursing students. The chi-squared test which was used by Collings to explore differences between nurses in training within the sample might have been more appropriate.

Hack (1973), in the study mentioned earlier in this section in relation to the AVL Study of Values, also administered the Connolly Occupational Interests Questionnaire to the 83 Health Visitor students. Two of the areas measured by the questionnaire demonstrated a positive correlation with the examination results at the 0.01 level of significance. Firstly students who tended to be more interested in the use of words and verbal concepts performed better in examinations.

Secondly students who showed a greater interest in the use of tools and the manipulation of materials than in people, performed less well in examinations.

Long and Gordon-Crosby (1981), whose New Zealand study of 96 student nurses was outlined in the previous section in relation to the EPI, also administered the Wilson-Patterson Attitude Inventory (WPAI) to the students. Two dimensions, 'conservatism-liberalism', and 'realism-idealism' are measured by this test as well as four related primary factors. They reported that discriminant analysis on variables from a battery of tests identified eleven variables which were capable of classifying successful and unsuccessful students in relation to theoretical and clinical assessment ($P<0.01$). Two of these variables, 'Realism' and 'Religion' were generated from the WPAI. 88% of the student nurses were correctly classified in relation to assessment outcome. Five of the initial eleven identified variables were isolated from two of the four tests that generated the variables, and they were capable of correctly classifying the students in 80% of cases. As the other six variables, including the two generated by the WPAI, only increased the predictive value by 8% this would suggest that the contribution of the WPAI to the predictive matrix was of limited value, particularly when the extra time and cost of administering another two tests to achieve this increase is considered.

Hack in his 1983 study of 42 Health Visitor students also administered the WPAI. He noted that students who were low academic achievers consistently produced above average scores on 'Conservatism'. This finding was not statistically significant. However as the sample was a very small one the results are of limited value.

The review of the literature in this area reveals a paucity of studies related to student nurses, particularly in the 1980's. This is surprising when the importance of job matching and selection methods have been factors widely discussed in nursing circles since the restructuring of the NHS.

The main overall criticism of the instruments used in the above studies is that they fail to discriminate within a nursing population, either because the preferences/interests examined are too general, as in the AVL scale, or because items are consistently selected by most nurses, as in the Rosenberg Survey. An example of the latter would be items such as 'work with people not things' and 'be helpful to others'. The exception to this general criticism is the Kuder VPR which attempts to evaluate a wide range of vocational interests by presenting no fewer than 168 questions to the respondent. The overall criticism of this test is that no British norms are available to allow general comparisons between British students.

1.4 Social and Educational Background

During the period under review little research interest was shown in relation to the family and scholastic background of nurses in training. The studies which were undertaken covered a variety of areas that can be placed under the general heading of either social or educational background.

Singh (1970) in his study of 229 student nurses on experimental courses in England and Wales described in the first two sections of this chapter, gave an outline of their social class status. He also described the type of secondary school attended and the parental attitude towards the students choice of career.

Social class was based on the occupation of the father of the nursing student. The occupations were classified into seven categories according to the Hall-Jones scale. Social class 1 and 2, ie professional, managerial and executive, accounted for 50% of the sample. 23% of students reported that their father was employed in inspectional, supervisory, and other non-manual work (social classes 3 and 4). A further 20% of students reported that their father was a skilled manual worker. Students whose fathers were semi-skilled or unskilled were in the minority. They represented 6% of the total sample. Why 1% of the sample is unaccounted for is not explained. Perhaps the father was unemployed, deceased, the family had broken up, or the respondent did not know his/her father's occupation. Alternatively perhaps the 1% represented married students whose father's occupation was now less important to their social status than previously.

By using any type of social class scale based on occupation one is not examining the social background directly, but inferring the social status and related financial status of the individual based on the type of employment of the father. No account appears to be taken of single parent families where the breadwinner is female, or families where the individual has been brought up by someone other than the parents. By using a seven point scale to classify occupation a wider range of choice is afforded, but no account is taken of those fathers who are unemployed.

Because research during the 1950's and 1960's suggested that parents had a strong influence on adolescents' choices of career, particularly if they came from middle class families, Singh decided to include this area in his study. He reported that 61% of mothers and 52% of fathers were "entirely favourable" about their child's choice

of career. A further 27% of mothers and 28% of fathers were "favourable with some reservations". Only 8% of mothers and 11% of fathers were either "indifferent"or "opposed" to the career choice. As 63% of the students were reportedly from middle class backgrounds this finding would appear to support the findings of earlier studies. However Singh's study is sixteen years old. Over these sixteen years young people appear to have had more freedom from parental control. Many of them have had to leave home at an earlier age due to employment difficulties. Perhaps, as a result of these changes, parental influence is now less important in relation to career choice than it was in previous decades.

Singh's justification for examining the above two areas was based on research findings in general education which suggested that there was a relationship between family background and educational progress. In nursing, Scott-Wright (1968) also reported that the favourable attitude of parents towards their children undertaking nurse training was highly conducive to examination success, although only during the first half of training. Although Singh did compare the social class and parental attitude of various groups of students within his sample, he made no attempt to correlate the findings with success/failure during nurse training.

He also described the type of school attended by his sample. 77% had attended a Local Authority school, but he did not state what proportion came from a Grammar school and what proportion from a Secondary Modern school. The remaining 23% came either from Independent, or Grant Aided schools. The proportion from non-Local Authority schools appears rather high. However the high proportion of students from Social Class 1 and 2, and the high proportion of degree course student nurses in the sample (28%) could explain this finding.

Singh and Smith (1975) expanded on Singh's 1970 project by adding 625 basic general student nurses to the 229 experimental course student nurses, and examining the data for differences between those students who left training and those who continued. Like Singh (1970), Singh and Smith described the social class of the sample using the Registrar General's Classification to determine their father's occupation. The findings were similar to Singh's study in that 59% of the sample came from families where the father worked in a professional or managerial capacity. Similarly a low proportion of the sample (10%) had fathers who worked in semi-skilled or unskilled employment. The authors also noted that despite adding the 625 basic general students to the data the percentage of those attending Independent or Grant Aided schools rose by 2%. They also reported that of those who attended a Local Authority school 79% had attended a Grammer school. They concluded that "few student nurses, at least in this sample of over 800, come from working class homes or from the lower level of the state education system". In relation to attrition rates they reported that neither the type of secondary school attended nor the social class of the student nurse appeared to be related to a student's decision to enter nursing.

The criticisms that were offered in relation to Singh's use of an occupational classification to determine social class are equally pertinent in relation to this study. By having five classifications instead of the seven used in the Hall-Jones system many of the occupations under social class 3 cover a very wide range from non-manual to skilled manual. The Hall-Jones scale attempts to deal with this problem by adding another two scales to accommodate the broad range of occupations under the heading of non-manual worker.

Singh and Smith also examined parental attitudes to the

adolescent's choice of career. Only 7% of mothers and 11% of fathers were "indifferent" or "opposed" to the choice. These results are identical to those reported by Singh 1970. Singh and Smith also reported that the parents of students who leave were slightly less positive towards the students' career choice than the parents of those who continued in training. They fail to state if this difference is a significant one, but by examining the raw data it would appear unlikely that the finding is significant.

Hack (1973) was also interested in family and educational background in relation to the academic results of the 83 Health Visitors in his study. In relation to family background he investigated factors such as the father's occupation, parent's social class, birth order, whether the mother had gone out to work while the student was growing up, and the number of siblings in the family. Variables examined in relation to educational factors included type of school attended, school leaving age, and school leaving qualifications. All these variables were investigated by means of a written questionnaire. The only variables that demonstrated a positively significant correlation with the criterion variable were school leaving certificates, and the mother out working while the student was growing up .

Students with poor educational leaving certificates were reported to be less likely to perform well in examinations than those with better leaving certificates. However this study was conducted at a time when the basic entry qualifications into nurse training in England and Wales was either via the GNC entrance test or the possession of a minimum of three 'O' levels, a situation very different from present day. Today most students who apply to enter nurse training have left school with more than the minimum requirement

of five 'O' grades.

Although a significant positive correlation was found between mothers who went out to work while the Health Visitor students were growing up and the poor academic performance of these students during training, the finding was not not consistent for all intakes examined during the study. Therefore the value of this finding is limited.

Birch (1975) in his study of learners outlined in the previous two sessions briefly reported that no statistical differences were found beween students who continued in training and those who left in relation to social class. A similar finding was reported by Singh and Smith (1975). However in Birch's study only 24% of students came from social class 1 and 2 compared with 59% in Singh and Smith's study. There was a notable increase in Birch's study in the number of students classified under the social class 3 heading, 51% compared to 31% in Singh and Smith's study. An increase of 6% of students classified under social class 4 or 5 was noted in Birch's study. Both studies used the Registrar General's Classification. The differences between the two studies may be partly due to Singh and Smith's study containing students on experimental courses, as some of their sample were degree and diploma student nurses. The difference may also be due to the two samples representing different geographical areas. It could be argued that the Newcastle on Tyne area is traditionally more of a working class area than Singh and Smith's catchment area in the West Midlands.

Birch also noted that the mean age of his student nurse sample was 21 years and that on commencement of training 7% of the student nurses were married. Half of the married students failed to complete their training. Perhaps this last finding is due to the student having used nursing as a means of supplementing the family income in the early

stages of the marriage. Alternatively, perhaps an intended career has been terminated due either to pregnancy or to the husband moving to a new job outwith the area.

More recent studies have added little to previous awareness of the social and/or educational background of student nurses.

Roberts (1982), was interested in non-academic criteria which might assist in predicting success in student nurses' examination results, and thus prove valuable in the selection of candidates for nursing. Her sample consisted of 514 student nurses from 11 Schools of Nursing in the Sydney area of Australia. She and Mearns (1985), whose study was outlined in previous sections, both reported that there was no correlation between academic success and socioeconomic status. Roberts also noted that the birth order of the student was not important either, while Mearns reported no correlation between the type of school attended and academic success.

Jones (1983), (outlined in the Personality Characteristics section) confirmed Birch's finding of an association between marriage and attrition. 9% of the student nurses in Jones sample were married prior to entering nursing and she reported a statistically significant association between marriage and discontinuation of training. She failed to state the level of significance in her report. Much of Jone's study is descriptive. The social class groupings of her sample, like some earlier studies, is based on the Registrar General's Classification of the occupation of the student's father. The distribution within the five classes is similar to Birch's distribution, particularly in relation to the percentage of the sample drawn from social class 4 and 5, rather than the percentages reported by Singh (1970) and Singh and Smith (1975). However Jones' sample has more students drawn from social class 2 and less students from social

class 3 than those in Birch's study.

In relation to the type of secondary school attended there is a notable difference between Jones' study and the earlier studies of Singh (1970) and Singh and Smith (1975). 97% of Jones' students attended a Local Authority school, with more than half of them being educated at a Comprehensive school. This difference could be due to the changing pattern in educational philosophy over the past 10-15 years. Direct Grant schools no longer exist and some of the smaller Independent schools were forced to close due to increasing costs. Thus fewer non Local Authority school places are available and those that do exist are no longer within the financial reach of many parents. Alternatively the difference could be due to Jones' sample having been taken from one School of Nursing, whereas the GNC projects on the experimental courses drew their sample from eighteen Schools of Nursing.

Generally, the findings outlined in this section on family and scholastic background support earlier nursing studies carried out in the 1950's and 1960's. The 'typical' British student nurse who is successful appears, from this review, to be 18-20 years old, female, single, and from a middle class rather than a working class background. Over the years it is becoming increasingly more likely that he/she attended a Local Authority school. As there have been notable changes in traditional values particularly in recent years it is possible that these findings no longer accurately reflect the student nurse of the 1980's. Consequently the student nurse of today will not necessarily be female, and may be being recruited from a less restrictive social background than previously. Changing employment opportunities may also affect the age and marital status of the 'typical' student.

Some studies report that the career choice of the student nurses is in general viewed positively by the parents. This positive attitude by the parents, particularly by the mother, has been reported by other researchers in general education, such as Bandura (1977), to correlate with examination success. However more recent research by Baumeister et al (1985) suggests that a positive academic performance is more dependent on the student's perception of whether he/she is capable of achieving success than the belief by others that the student is capable of success. They also report that if the student's perception of the learning outcome is one of failure, then a positive belief by others in the student's ability will enhance actual failure rather than act as a correlate of success. Thus the findings on the effect of a positive parental attitude towards student nurses in relation to their academic performance is inconclusive. However more important than any influence that parents or 'significant others' can have on a person's performance must be the belief within the individual that he/she is capable of succeeding academically.

1.5 Study Strategies.

This heading covers a wide area including the way one approaches studying, the methods used to facilitate learning, and the reasons for studying. Most researchers have concentrated primarily on the methods used to facilitate learning. Few have attempted to examine the topic from a wider perspective. Some have examined lecture notes, which are often used by students to facilitate learning, and explored the relationship with academic outcome. As far as can be ascertained, the topic has not figured strongly in nursing reseach, with the exception of Dellar (1981).

Entwistle and Wilson (1970,1977), Entwistle and Entwistle (1970) and Cowell and Entwistle (1971) whose studies were outlined in the personality characteristics section of this chapter, explored the relationship between study methods and the quality of degree awards using modified versions of the Brown-Holtzman Survey of Study Habits and Attitudes. Entwistle and Wilson administered the questionnaire to 72 graduates attending the Diploma in Education course at Aberdeen University. It was designed to explore 'study methods' and 'academic motivation'. They reported that the most successful students in terms of the class of degree awarded had significantly higher study method scores than the students who were awarded a poorer class of degree ($p<0.01$). A similar statistical relationship was found between the academic motivation score and type of degree awarded ($p<0.01$). They also reported that although there was no statistically significant relationship between study method scores and scores on the EPI, stable introverts showed consistently higher scores on study methods than extroverts or unstable introverts. A significant relationship between motivation scores and EPI scores was reported at the 0.01 level of significance.

A similar approach was taken by Entwistle and Entwistle. They administered a modified version of the same questionnaire to 257 college and university students. Their findings confirmed those of Entwistle and Wilson. They reported that the most successful student academically tended to have high 'study method' scores and high 'academic motivation' scores. There was also a positive correlation between high scores on the study methods scale and the stable introvert as measured using the EPI. Cowell and Entwistle (1971) administered the questionnaire to 117 students on Ordinary National Certificate courses and again concluded that there was a positive

correlation between 'good' study methods and academic success. Stable introverts were reported to have "the best study attitudes" although unlike the previous two studies their examination results were not significantly better than those of extroverts. These three studies were pilot studies for the Aberdeen/Lancaster studies carried out by Entwistle and Wilson (1977). 624 Aberdeen university students and 1531 students from seven universities around the Lancaster area participated in the main studies. Their findings generally confirmed the results of the pilot studies.

Whilst all these investigations suggest a possible relationship between an organised approach to studying and high quality academic results, one cannot ignore the findings related to academic motivation and the introversion/extroversion dimension suggested by the EPI. Each of these variables individually does not correlate highly with academic success, however there does appear to be a relationship between the three variables. One is left to speculate, like the authors, whether the motivation to organise one's approach to study is programmed predominantly by a particular personality dimension or due to a high level of academic motivation. If an organised approach to study is due to a high level of academic motivation there is a need to investigate the driving force behind the motivation. Is the driving force generated by a desire for an external reward or is it due to a particular trait within the personality of the individual?

Changes in academic attainment may also affect students' approach to study. However, as is suggested by the authors, changes in academic attainment might equally well be affecting the level of motivation rather than the method of approach to study per se. Thus although the findings in these studies suggest a correlation between study methods and the quality of degree awarded, the mechanism of the

relationship between the two variables remains elusive.

Dellar (1981), whose longitudinal study of 157 Health Visitor students was outlined in relation to the use of the EPI, carried out a more detailed analysis on Health Visitor students accepted for training in one particular year.(n=24) This included a questionnaire designed to "ascertain whether any relationship existed between study methods and learning styles used by the students, and success on the course." No examples were given of the type of question asked or the method of analysing the questionnaire. Dellar reported that there appeared to be no relationship between study methods and success on the course. Whether this finding is due to the small sample number, the method of enquiry, the method of analysis or a finding that no relationship exists between the two variables is difficult to determine due to the lack of information given in the research paper.

Some researchers have explored the relationship between lecture notes and academic results. As lecture notes are frequently used as a basis for studying it seems pertinent to review some of the findings.

Research in the 1950's and 1960's was not in agreement as to whether or not notes aided the retention of material and consequent academic success. Eisner and Rhode (1959) and Berliner (1969) found notetaking not to be beneficial to the student, while Miller, Galanter and Pribram (1960) suggested that the benefits of notes was not in taking them, but rather in having them, in that they provided information for later review and elaboration.

More recent research, although adding to the body of knowledge, remains inconclusive as to the value of notetaking. Peper and Mayer (1978) undertook three experiments with first year psychology students at the University of California, Santa Barbara. The first experiment

used a sample of 60 students who were given a 16 minute lecture on computer programming. Half the group were asked to listen and take notes, the other half were asked to listen only. A short test was administered after the lecture. Notetaking was reported to have no overall effect on test performance, but it did have a statistically significant effect on the type of question that the students could answer. ($p<0.05$) Students who took notes performed better on interpretative problems which enabled them to link new knowledge to past experience and thus produce a broader learning outcome, while those students who did not take notes performed better on generative problems which encouraged the learning of main points in order to accomplish an acceptable performance at a later date. The second experiment was a replication of the first one. 48 first year psychology students from the same university were given a 22 minute videotaped lecture on the use of the chi-square test. The results from the second experiment confirmed the results of the previous one. The third experiment was designed to examine more closely what was recalled by the notetakers and non-notetakers. The authors reported that notetakers recalled ideas which contained underlying concepts, whereas the recall of the non-notetakers was narrower in that they recalled technical symbols and examples and presented rather vague summaries of the lecture.

The main weakness of this study is the exclusion of students who had a poor aptitude for the pre-test algebra items. While it could be argued that the pre-test was necessary because of the content of the lecture material it does bias the sample and make generalisation of the findings difficult. Perhaps topics which less obviously require a specific aptitude would have generated information about a wider section of the student population.

Palkovitz and Lore (1980) administered a multiple choice test to 42 first year psychology students at Kansas University. Eight of the questions contained material which could only be answered by having knowledge of material covered in the lecture as the topic was not covered in a textbook. Once the test was marked the scores for the eight questions were compared with each student's lecture notes. A significant difference at the 0.01 level was reported between the test performance of students with correct notes and those with incomplete or incorrect notes. However performance was not simply determined by the quality of the note taking, as 18% of the questions were correctly answered by students with incorrect or incomplete notes, and 66% of the incorrectly answered questions came from students with correct lecture notes.

The finding that 18% of the questions were answered correctly by students who had incorrect or incomplete notes possibly reflects one of the major problems of multiple choice items, namely the element of choice in selecting the correct answer. However when the last two facts reported in the previous paragraph are considered together it may be, as suggested in the previous study, that the relationship between the type of encoding used by the students during the lecture affected the recall of the students. Thus perhaps some of the students, despite having complete notes, had grasped the principles and underlying concepts of the lecture rather than the concrete facts and examples contained within the lecture. As multiple choice questions more easily lend themselves to testing specific facts rather than abstract concepts this could perhaps explain the high proportion of students with complete notes who incorrectly answered some questions. Alternatively the high level of incorrect answers by notetakers could be due to failure to review the notes adequately. As

a significant difference was found between notetakers and non-notetakers it seems likely that the opportunity to review notes does contribute to the learning outcome.

Baker and Lombardi (1985) were interested in the degree of relationship between lecture note quality and test performance. They also investigated the relationship between the specific information included in the lecture notes and test performance. 125 students from an introductory psychology class at the University of Maryland Baltimore County attended a scheduled class lecture, and took a multiple choice test on the material three weeks later as part of a scheduled examination. The researchers then asked them to submit their lecture notes for photocopying. 94 students complied. A randomly selected subsample of 40 students were then selected for the research project. The authors reported a relationship between the note taking of the main points of the lecture and test success. They also noted a relationship between note taking of material presented on acetates and test success. Students who had accurately recorded the acetate information and the main points of the lecture produced significantly better results ($p<0.001$). As there were more students who had the correct answer in the absence of notes than in the presence of notes, they reported that note taking was not a necessary condition for students to answer questions correctly. However they suggested that if a student includes material in his/her notes it is likely that they will answer a related question correctly. Of all the questions answered incorrectly only on 14% of the occasions was the relevant information included in the notes.

The last finding conflicts with Palkovitz and Lore (1980) who found that most students who answered questions incorrectly did include the relevant information in their notes. Again this conflict

could suggest that an important variable is the use of notes for subsequent study purposes. While encoding of material during the lecture may be assisted by note taking, further recall of material for examination purposes may be aided by note review while studying for examinations.

A positive facet of this study is that the teaching was carried out in a natural setting by a lecturer whose teaching style was familiar to the students. The test results were also obtained using a format that was already established. The main weakness of the study is that almost 25% of students attending the lecture were excluded from being chosen to participate in the study because they elected not to hand in their lecture notes. This omission could distort the findings because perhaps only those students who felt that their notes were adequate or organised enough had submitted them. Perhaps a high proportion of the students who did not submit notes had not taken any, or felt that their note taking was of a poor quality. Alternatively perhaps those students who had done badly in the test elected not to submit their notes to scrutiny. If such variables have in fact distorted the findings this might be another explanation for the conflict between these findings and those of Palkovitz and Lore.

Einstein, Morris, and Smith (1985) carried out a study on 24 introductory psychology students at Furman University. Primarily it was designed to examine the relationship between note taking and encoding of information. The findings were similar to those of Peper and Mayer (1978). A small section of the study examined the relationship between note taking and its ability to facilitate recall. The authors reported that the reviewing of notes immediately after receiving a lecture and just prior to recall did not increase the recall ability of the students. When the notes were reviewed one week

after receiving the lecture the students who were allowed to review their notes were four times better at recalling the important points of the lecture than the students who were not allowed to review their notes prior to recall. It was also reported that students who were successful in a post lecture test included more of the important points of the lecture in their notes than the students who were less successful in the test. Thus the recall differences were related to what students initially recorded in their notes. The authors concluded that memory differences between successful and less successful students were the result of factors that occurred during notetaking rather than factors related to note review. As the note taking styles of the successful and less successful students were similar this would appear a logical conclusion.

While these findings supplement some of the previous research, a theory of the possible functions of note taking appears to be no more exact than it was twenty to thirty years ago. The debate continues as to whether notes facilitate encoding, recall, or both in relation to academic success

1.6 Summary of Review

There is a paucity of empirical research into the relationship between non-cognitive factors and examination success. (See section 1.1). The body of knowledge concerning non-cognitive factors found in student nurses per se is variable.

While there is some information on why people choose nursing as an occupation, less is known regarding how these choices affect performance. In relation to reasons for choosing nursing some facts are known about the differences between those who complete nurse

training and those who leave. However as far as can be ascertained no attempt has been made to examine the relationship between reasons for choosing nursing and either theoretical or clinical performance during training.

Much has been written about the personality characteristics of various groups of nurses during the past twenty years, but it remains difficult to describe these characteristics readily due to the variety of tests used to measure them. (See section 1.2). Several studies have specifically examined the relationship between personality characteristics and theoretical and/or practical success during nurse training. Most of the studies are American, four are British. Partly due to the range of tests employed and the wide variety of courses followed, no clear relationship between the two variables has emerged.

All the nursing studies have examined academic performance in terms of pass/fail, whereas in general education consideration has been given to the level of the academic pass and its relationship to personality characteristics. Within British general education a relationship between certain personality dimensions and academic ability has been established using the EPI, but the few nursing studies which employed the EPI did not support the findings found in the more general educational context.

Assessment of vocational/personal preferences is employed in the USA to assist school leavers to make a career choice, and is used by some multinational firms as part of their selection process. However the literature reveals little information about such assessment of vocational/personal preferences in student nurse selection. (See section 1.3).

Of the studies that have been carried out the emphasis has been on describing the vocational/personal preferences of nurses already in

training, or the difference in characteristics between those who complete training and those who leave. Only two studies examined the relationship between vocational/personal preferences and academic ability, and each used a different test to measure the preferences, making it difficult to compare the studies.

Several studies have examined the social and/or educational background of student nurses, usually in relation to attrition or academic success. (See section 1.4). The most popular variables explored were social class and type of school attended, although the studies covered a range of variables including birth order and school leaving age. Findings regarding a correlation between social class and academic success were inconclusive. In relation to family influence some studies suggested a positive correlation between an approving parental attitude towards the student nurse's career choice and academic success. Two studies suggested a negative correlation between marriage and completion of training.

Research into study strategies has concentrated on two main areas; the relationship between study methods and academic performance, and the relationship between lecture notes and academic performance. (See section 1.5). A relationship appears to exist between study methods and the quality of degree awards, but the relationship between the quality of lecture notes and academic results is less well defined. With the exception of one small nursing study, all these reports emanate from general education. The nursing study found no correlation between study methods and academic success, although as indicated earlier this may have been due to the extremely small sample size.

None of the studies examined the effect that an individual's approach to study and/or reasons for studying may have on the quality of academic results.

The non-cognitive factors outlined in this review are only a small percentage of the total non-cognitive factors that could contribute to examination success in nursing. However this review has concentrated only on specific factors that could contribute to the selection technique within nurse education, which is chiefly dependent on academic qualifications, or which may enable the nurse teacher to offer counselling to the nurse learner during training. In both instances such factors could possibly be used to select and/or guide learners who are most likely to use their full potential and proceed more successfully through the modular and State examinations during training.

CHAPTER 2

RESEARCH DESIGN AND METHODS.

2.1 Objectives Of The Study

As stated in the introduction the purpose of this study is to determine whether specific non-cognitive factors can be identified which could act as predictors of high/low performance in examinations during nurse training.

The specific objectives of the study are fourfold. The first objective is to determine whether 1st level learners who have high academic qualifications but who attain average or below average examination results, and learners with average academic qualifications but who attain low examination results have similar

-motives for choosing nursing

-personality characteristics

-family backgrounds

-scholastic backgrounds

-attitudes to study

-vocational preferences

The second objective is to determine whether 1st level learners who have low academic qualifications but who attain average or above average examination results, and learners with average academic qualifications but who attain high examination results have similar

-motives for choosing nursing

-personality characteristics

-family backgrounds

-scholastic backgrounds

-attitudes to study

-vocational preferences

The third objective is to determine whether there are any differences in the non-cognitive factors outlined above between the following two groups of learners:

a) those with high academic qualifications/ average or low examination results, or average academic qualifications/ low examination results.

b) those with low academic qualifications/ average or high examination results, or average academic qualifications/ high examination results.

Finally, to determine whether there is any difference in the various non-cognitive factors outlined above between those learners identified in the first two objectives and those learners with high academic qualifications and high examination results, or low academic qualifications and low examination results, or average qualifications and average examination results.

Thus the sample will be classified into the following groups.

Group 1- Low achievers. ie learners with high qualifications who produce average or low examination results, and learners with average qualifications who produce low examination results.

Group 2- High achievers. ie learners with low qualifications who produce average or above average examination results, and learners with average qualifications who produce high examination results.

Group 3- Consistent achievers. ie learners with high qualifications who produce high examination results, learners with average qualifications who produce average examination results, and learners with low qualifications who produce low examination results.

2.2 Outline Of The Research Design

Although first level nurse training lasts for three years and consists of eight modules, due to time constraints data could only be collected from learners during Stage 1 of their training which consists of an introductory four weeks of theory and four modules(total 18 months). In addition only one of the four annual intake of learners could be followed through because there are approximately three months between each intake date.

The May/June 1986 intake was selected for the main study. Initially it was proposed that all data collection should be completed by the middle of module four in mid-July 1987. However when the National Board for Nursing, Midwifery and Health Visiting for Scotland (hereafter referred to as the NBS) indicated a willingness to allow access to Stage 1 examination results for the study this date was revised to December 1987, when the results for the May/June 1986 intake would be available.

To assist in the classification of the sample into academic groupings the academic records of six intakes of 1st level learners in training at one College of Nursing between February 1982 and February 1984 were examined. Figures from the NBS Annual Report 1984/1985 on the breakdown of educational attainments at entry to 3 year 1st level courses were also examined. It was then decided that learners included in the research study who had 2 Higher + 2 Ordinary grades (at band C or above), or all lower qualifications accepted by the UKCC, or entry via the E test/DC1 test would be classified for the purposes of the study as having low academic qualifications. Those learners who had attained at least 3 Higher + 4 Ordinary grades (at

band C or above) with the subjects at Higher grade being different from those at Ordinary grade would be classified as having high academic qualifications. Other qualifications accepted by the UKCC as equivalent to those outlined were included in this classification. Average academic qualifications were defined as those academic qualifications that could not be categorised under either of the above two categories. These three categories were defined prior to the sample being selected.

It was decided to define an above average examination result as any mark which was half a standard deviation or more above the group mean. A below average examination result was defined as any mark which was half a standard deviation or more below the group mean. An average examination result was defined as one which could not be classified under either of the above two headings. Prior to the pilot study these definitions were applied to eighteen sets of modular examination results from six intakes over three different modules in one College of Nursing to establish if, as predicted, the definitions produced fairly even categorisation. The examination results were also checked to assess that they followed a normal distribution curve, as this was assumed in the definition proposed. As the outcome of these exercises was satisfactory the definitions relating to examination results were adopted.

As examination candidates often take time to settle on new courses, or can be affected by illness, personal problems, or other similar variables, it was deemed unrepresentative to classify the academic results of learners on the basis of only one examination. Thus a learner's classification depended on his/her most frequent category of result over the first three modular examinations. Module 4 results could not be used as this module is not often assessed by

written examination due to its close proximity to the Stage 1 examination in some Colleges. Stage 1 examination results were used to assess differences in performance between Stage 1 modular examinations and the national examination.

The method of categorising the learners in relation to their examination results meant that data relating to all the non-cognitive independent variables was collected before the learners could be classified in relation to whether or not they were utilising their academic potential.

The non-cognitive data outlined in the objectives was collected during the introductory four weeks of theory and the theoretical component of the subsequent three modules. This ensured that data from learners in the four selected Colleges was collected at approximately the same point in their training, and that there was no disruption of the clinical areas because of the study. It also ensured that learners from each College had each instrument administered to them at the same time and under the same conditions. The only exception to this pattern of data collection was the administration of instruments to learners who, due to excessive sickness, poor clinical assessment, or poor modular examination results, had their training put back and consequently joined the August/September 1986 intake for theory and clinical placement. In order to administer the instruments to these learners at approximately the same time after commencement of training as their original peer group, they were removed from the clinical area at a time convenient to the ward staff. To maintain self esteem they were never asked to join their original peer group when data was being collected. When the modular results of those learners whose training had been put back was categorised the classification was based on the

mean score of the current peer group at the time of each examination, in order to control variables such as examination content, examination questions, and examination markers. Keeping those learners in the study who by necessity had joined the August/September 1986 intake effectively delayed the total categorisation of the sample, because their modular examination results were in some cases three months behind those of the main group. However to discard those learners from the study would have meant the loss of potentially valuable information. Various instruments were used to collect the data relating to the non-cognitive factors being examined, and these will be outlined in detail in section 2.5 of this chapter. A small section of the study generated qualitative data which was analysed using a coding frame. Quantitative data was analysed using multivariate statistical tests. Detail of the analysis of both qualitative and quantitative data is outlined in Chapter 3.

As indicated earlier learners from four different Colleges took part in the study. It might be argued that the Colleges ought to have been matched for modular order of subjects in order to control the subject variable. In practice this was impossible because when the study was being designed there were not four Colleges in Scotland using written examination as their modular assessment method who also ran the four modules in the same subject order.

However even if four such Colleges had been available this would not have ensured the control of subject matter, as one of the features of the modular system of training is that each College is free to interpret and teach modular subjects in order to meet local needs.

One could also argue that by using four different Colleges one fails to control variables such as teaching methods used, the teaching environment, weighting given to examination marking, teaching

resources and geographical area. However even if only one College is utilised, many of these variables still exist as often each module is taught and assessed by different teaching teams. Consequently the teaching methods, weighting given to examination marking and sometimes the teaching environment can be different, as not all Colleges have their teaching teams in the same geographical situation. Sometimes the teachers can also vary as some Colleges encourage their staff to rotate, and teach different modules in order to widen the range of subjects that they are capable of teaching.

The fact that these confounding variables exist does not necessarily weaken the study when one reflects that there are only two factors that appear to be constant in present day nurse education. Firstly learners are expected to learn new material in each theoretical module. Secondly evidence of this new learning having occurred is measured by an examination mark which is expected to reflect the learner's potential. All the learners within the Colleges of Nursing have been subjected to the wide range of variables outlined in the previous paragraph. Yet some learners appear to reach their full academic potential in modular examinations while others do not. It is therefore possible that those who are not reaching their full potential are being affected by an intrinsic or personal variable such as motivation, personality type, or domestic situation. Admittedly some learners could be adversely affected by the aforementioned variables due perhaps to a personality type which has difficulty in coping with such a variety of variables. However although this is a possibility the present system of assessment in nurse education does not take these confounding variables into account when the extent of new learning is assessed using the written examination format. Neither are these variables considered when the learner is assessed

during the written State Examinations as to whether he/she is safe to practise as a Registered Nurse.

Therefore based on the points raised in the foregoing discussion it was decided that the study should concentrate on the non-cognitive variables outlined in section 2.1 and select its sample from as wide a choice of Colleges as practically possible.

2.3 Selecting The Sample

Initially a questionnaire was designed to be completed by the Colleges of Nursing to determine their suitabilty for possible inclusion in the study. It covered areas such as intake numbers of 1st level learners, order of Stage 1 modules and method(s) of assessment of the theoretical content of each module.

Following discussion with the NBS the Directors of Nurse Education(DNE) in fourteen of the nineteen Colleges of Nursing in Scotland received the above questionnaire at the beginning of December 1985 along with an initial letter of introduction and a slip to be signed indicating a willingness to assist in the proposed research. The reason why five of the Colleges were not approached varied and included Colleges that had mixed modules in Stage 1, Colleges that were involved in comprehensive or experimental schemes of training and Colleges that consistently recruited learners with above average academic qualifications.

Out of the fourteen Colleges contacted regarding the research proposal, five were unable to assist in the research, two of the remaining nine Colleges willing to assist in the research were unsuitable, either because of their method of assessing the learner's knowledge of the theoretical component of each module, or because they

did not have a common core curriculum for the RGN and RMN learners during Stage 1.

Most Colleges of Nursing have similar intake dates, and therefore similar dates for their modular theory. As access was required during the introductory module and the modular theory of the subsequent three modules this meant that it was impossible to include all seven Colleges in the study, as they were scattered geographically. It was calculated from information on the completed questionnaire that any four of the Colleges should produce a sample of no less that 110 and no more than 200 learners, and that it would be possible, with good organisation and forward planning, to interact with four Colleges in any two week period of modular theory. Thus four of the seven Colleges were selected for the study using a table of random numbers. Those Colleges that had not been selected or who were unsuitable for the study were contacted. The DNE's of the four selected Colleges, which will be referred to as Colleges A B C & D, were contacted at the end of January 1986 and a meeting was arranged to discuss the project with each of them in greater detail. At that meeting they were given the specific objectives of the study and a copy of the information sheet which would be given to the learners to enable them to give informed consent to take part in the study. They were also given a sheet which outlined the proposed learner contact during each module, the reason for the contact, and the length of time requested by the researcher in each module. (See appendix I) It was stressed that alterations could occur if the pilot study indicated that this was necessary.

It was anticipated that the sample size would be 150. As some Colleges were still recruiting for their 1986 intakes this figure was based on information taken from the completed questionnaire. The

actual sample size (130) represented approximately 20% of all 1st level learners indexed in Scotland on three year courses during the same period of time.

2.4 The Pilot Study

The pilot study commenced at the beginning of February 1986 using learners and teaching staff who were not involved in the main study. It was completed on the 18th April 1986. The number of learners varied between 17 and 26. The main aims of the pilot study were as follows:-

1) to test the validity and reliability of an instrument designed by Singh (1970) to examine motives for choosing to enter nurse training. A list of 24 motives was presented to the learners. They were asked to rate each of these motives according to the part each of them played in their own decision to choose nursing.

2) to test the design, validity, and reliability of a 46 item questionnaire to elicit aspects of the student's family background, school and employment, and attitudes to study.

3) to test the design, validity, and reliability of an interview schedule designed to explore the family and scholastic background and career choice of the best academically qualified and the least academically qualified learners in greater depth. The schedule also explored attitudes to nurse training and questions about different types of people recruited to nursing.

Reliability of the above instruments was tested using the test-retest method, with 48 hours between the first and second administration of the questionnaire, and 1 week between the

administration of the other two instruments.

4) to test the design, validity, and reliability of an interview schedule designed for learner nurses who left/were discontinued from nurse training during the study to ascertain their experience during training and feelings about leaving.

5) to familiarise the researcher with the following instruments:-

a) Cattell's 16 Personality Factor Questionnaire Form A (187 items).

b) The Kuder Vocational Preference Record Form C/E (168 items).

6) to time the administration of all instruments.

7) to evaluate instrument items, with the exception of Cattell's 16 PF and the the Kuder Preference Record, for clarity and acceptability.

8) to test and evaluate the effectiveness of data collection sheets for recording academic qualifications and modular examination results.

9) to evaluate the method of administration of each instrument, including both verbal and written communication.

10) to identify any unforeseen problems.

11) to select instruments for the main study.

The decision to pilot a variety of research instruments was taken for two reasons: a) no single instrument adequately covers the range of non-cognitive factors under examination; b) to improve the chances of discovering one particular instrument which might significantly discriminate between the various groups being studied within the sample.

All the aims outlined above were achieved with the exception of number 4, since no learners left or had their training discontinued during the period of the pilot study.

Of the instruments specifically developed for the study no major problems in relation to their design, validity or reliability were identified. Minor alterations such as item order or sentence reconstruction had to be made occasionally and consequently when necessary a section of the instrument, or the complete instrument, was re-piloted. In relation to Cattell's 16 PF and the Kuder Preference Record only minor problems relating to the administration of these instruments was identified, such as the speed of delivery of verbal instructions, and these problems were easily corrected when the main study was conducted.

In contrast, Singh's instrument which used a Likert scale to assess the motives of people choosing to enter nurse training proved to be fraught with difficulties. Following attainment of Singh's permission to administer the instrument, 20 registered nurses were used to establish which items in the instrument were considered favourable, neutral, or unfavourable reasons for entry into nurse training. Two items were removed because of lack of agreement amongst the 20 nurses, and two were removed because they were felt to be outdated. The remaining twenty items were then used in the pilot study. On analysing the responses it was noted that 7 positively scored items and 1 negatively scored item were not creating discrimination in the learners. One other question also had to be rephrased due to five learners having difficulty with interpretation.

Scores from the Likert scale ranged from 87%-63%. On retest, scores ranged from 86%-52%, with 6 learners demonstrating an increased score, 10 a reduced score and 1 learner had the same score. Due to

the above findings an amended instrument was formulated by discarding the 8 non-discriminating items. Analysis of the results indicated that 16 of the 20 items were acceptable (in varying degrees) and the amended instrument was administered again to test for reliability. The two sets of scores were compared using the Spearman Rank-order Coefficient:- rho = 0.63. The amended instrument was discarded because of its poor reliability.

Consequently it was decided to design a new instrument. Learner nurses in the pilot study were asked to write down their reasons for entering nursing related firstly to patients and secondly to their own needs. From the responses an instrument was developed, again using a Likert scale to assess motives for entering nurse training. A total of 39 items were initially presented to the learners in the pilot study, and it was hoped that a minimum of 15 items would ultimately be suitable to create a new questionnaire. The items were presented in two sections. Section A contained items related to patient care and section B contained items related to the learners own needs. In addition, at the end of each section the learners were asked to rank, from the items presented, a maximum of five reasons for coming into nursing which were closest to their own. Thus they ranked a maximum of 5 reasons from Section A and 5 reasons from Section B. As this was a completely new instrument the items were analysed for internal consistency using the Spearman Rank-order Coefficient. Out of 39 items only 11 showed internal consistency, 4 at the 0.01 level and the others at the 0.05 level. Following discussion with advisors, the idea of using a Likert scale to measure response was abandoned. However the instrument was administered again to check the reliability of the rankings at the end of each section. Initially there appeared to be wide discrepancies between the ranking in the first

administration and the second administration. However on closer examination it was noted that some of the items were very similar. The discrepancies created by the learners in Section A were logical 91% of the time and in Section B 84% of the time. As a result it was decided to create a matrix to see if the items in each section fell into a number of clusters.

Items did in fact cluster. Some of them appeared to relate to various groupings within Maslow's hierarchy of needs (1943). However because of the weaknesses in Maslow's theory, and to avoid subjective grouping the 39 items were given to 70 judges who were unfamiliar with Maslow's theory, for allocation to the various categories. (See appendix II) With assistance from a psychologist the judges responses were examined, and those items that achieved 60% agreement or more were included in a new instrument, giving a total of 19 items. Items related to health education, and items orientated towards community nursing were rejected as they failed to meet the required 60% agreement amongst the judges. A further 4 items were included in the instrument which were highly ranked by the learners, but for which the judges could find no suitable grouping. These were included under a heading of "Idealism". Items which the judges categorised over a wide range of groupings and which were ranked low or not at all by learners were rejected. The order of presentation of the items in each section was determined using a table of random numbers. The resulting instrument was piloted. (See appendix III) As no major problems were encountered this instrument was included for use in the main study to replace Singh's instrument for measuring motives for entering nurse training.

Following the initial administration of each instrument the learners were asked to complete an evaluation sheet which covered both

presentation and content of the instrument. One example of these evaluation sheets is included in appendix IV. The evaluation sheets proved to be invaluable, particularly when concentrating on the finer points of the method of administraion of any instrument.

Each instrument was administered to learners who were at a similar stage in training to those who would participate in the main study. This explains why the numbers in the pilot study varied, as different classes had to be used for each instrument.

2.5 The Main Study

Although it was anticipated that the sample size would be 150 it will be recalled that these figures were partly based on 1985 information extracted from the completed questionnaire which each College had submitted. Unfortunately due to financial restraints imposed by most of the Health Boards 1st level recruitment was reduced. Consequently the number of 1st level learners recruited to the May/June 1986 intake in the four Colleges of Nursing used for the study was 136. The actual sample size available for the study was 130; 2 learners declined to take part in the study and 4 learners had previous experience of nurse training.

(A) Introduction to the learners.

Within three days of commencement of training the researcher introduced herself to the learner intakes in the 4 Colleges selected to participate in the study. During the introduction the learners were given background information about the researcher, mainly to assist in the establishment of rapport. They were also given an

explanatory handout outlining the purpose of the study and promising confidentiality to those who participated. After ensuring that all the learners had read and understood the handout, further explanation of the study was given using acetates to outline the frequency and duration of each visit and its purpose. When introducing the method of data collection used during Module 3, the concept of 'an interview' was played down, and the concept of 'a chat' was played up to make the interview appear less threatening. When requested, two examples from each instrument were given to typify the type of questions/exercises involved in each data collection session. The guarantee of total confidentiality was again reiterated and an explanation of the difference between anonymity and confidentiality was offered. Although the learners were given enough information to enable them to give informed consent to participate in the study it was important that they were unaware of the researcher's interest in their modular examination results. Any alteration in a learner's normal preparation for, or attitude to modular examination results would have invalidated the research. For similar reasons it was important that they were unaware that the researcher was classifying them according to their academic qualifications. All teachers involved with these classes were asked to withold this information if learners discussed the study with them. They all agreed to comply with this request.

Following an opportunity given to the learners to ask questions, the researcher invited anyone who did not wish to participate in the study to go to the library and use the time remaining in the session as a study period. To avoid the learners any embarrassment, or feeling of coercion, the researcher left the room for ten minutes to allow learners who did not wish to take part to leave. As indicated earlier only two learners declined to take part. One of those

learners has since left and the other is still in training. To prevent those who already had some experience of nurse training from feeling rejected they were included in the data collection. This also meant that their data could be analysed separately at a later date if desired.

Once learners had agreed to take part in the study a sheet of personal reference numbers was issued and each learner selected a personal number for use throughout the study. It was explained that the numbers were to ensure that by excluding the use of names no particular learner was easily identified by the researcher, and that if the papers were accidentally lost they could not be traced to a particular College or learner. It was explained that the numbers also facilitated data analysis.

Learners were also asked to give written permission to participate in an interview if they either discontinued training voluntarily, or were discontinued by the College. Some learners only gave permission in the event of themselves discontinuing the training.

Having completed all the necessary formalities the data regarding why learners come into nurse training was collected.

(B) The instruments used.

(i) An instrument to assess why people enter nurse training was administered within the first three days of commencement of training, on the same day as the learners' introduction to the study. (See appendix III) A detailed explanation of how and why this instrument was developed has already been outlined in the section of this chapter related to the pilot study. (Section 2.4). The learners were presented with 23 known reasons for people entering nurse training. The reasons

were divided into two sections. Section A listed reasons related to patients and Section B listed reasons related to the benefits which nursing can offer self. The learners were then asked to indicate on a separate answer sheet a minimum of two reasons and a maximum of five reasons from each section which influenced them to become a nurse. Responses were listed in priority order. It was felt that by insisting that all the learners rank five reasons one could be imposing on learners who genuinely had fewer reasons. This could have generated inaccurate data, and possibly have created ill-feeling or mistrust in the learners at a time when rapport between the researcher and the learners was being established. Therefore the compromise of ranking a minimum of two and a maximum of five reasons was imposed. A maximum of five was chosen because it is known that the more items one is asked to rank the more difficult the task becomes. It is also thought that five is the maximum number which can be ranked before accuracy of response is affected. Those learners who felt that none of the reasons offered applied to them were able to present their reasons in prose form. The reasons were presented in two sections to reduce the chances of learners selecting all the 'less selfish' reasons. It also helped to demonstrate that reasons related to self rather than the patient were not necessarily unacceptable, and therefore were possible options. It took a minimum of 4 minutes and a maximum of 12 minutes for the learners to complete the instrument. The reason for the early administration of the instrument was to try to minimise the chances of the learners' response being influenced by nursing personnel, changing attitudes or a time lapse. Ideally it should have been administered on the morning of the first day of training, but due to the number of Colleges involved and the

geographical distances between them this was not possible.

To reduce subjectivity when coding learner responses to the instrument, 20 Registered Nurses involved in the selection of applicants for 1st level training were shown the various reasons for entering nurse training. (This exercise was carried out prior to commencement of the main study). The reasons for entering nurse training which were generated during the pilot study were presented in the categories selected by the 70 judges during the designing of the instrument. The 20 Registered Nurses were asked to rank each group in order of its importance in influencing them in their decision to accept an applicant for 1st level training. (See appendix V) The range of agreement between the judges varied between the six categories. The lowest level of argeement was 68% and the highest level of agreement was 98%. The mean level of agreement was 82%.

Responses by the learners were coded using the rankings agreed by the 20 Registered Nurses involved in the selection of applicants. When a learner chose to record his/her reason(s) using option B, two judges decided into which category the response(s) should be entered.

While it can be seen from the literature review that much has been written about the motives or reasons for individuals choosing to enter nurse training, most of the instruments used in the earlier studies have presented rather 'open' or 'general' reasons as a basis for information gathering. Thus when such instruments have been used to elicit differences between various learner nurse groups in relation to motives or reasons for entering nurse training, few differences have been recorded.

The two commercial tests available to measure motivation are Cattell's MAT and the AVL Study of Values. Both tests yield a profile of needs, or sentiments as Cattell describes them, but neither test is

recommended to be used for making selection decisions. Both tests produce data concerning general motivation. However when they were used in the studies outlined in Chapter 1 they proved of limited value. For example the MAT failed to distinguish between the motives of learners who completed training and those who did not complete training.

Due to the inappropriateness of the instruments reviewed in relation to this study it was necessary to design an instrument. Every effort was made to present up to date reasons generated by learners just commencing 1st level training. It was also necessary to ensure that the range of reasons listed in the instrument reflected specific areas of interest rather than totally reflecting general areas of interest such as 'a desire to help people', or 'an interest in nursing'. These requirements were felt to be met in the instrument which was administered to the sample of learners at the commencement of their training. (Appendix III)

(ii) Cattell's 16 Personality Factor Questionnaire (1967 Edition, Form A) was administered to the learners. It was administered during module 1 theory to ensure that if a learner left training or was discontinued the researcher had a personality profile which might yield useful data for later analysis if desired. By waiting till module 1 theory the learners were also given time to settle, as the administration of the questionnaire was at least four weeks after commencement of training. Most learners took about forty five minutes to complete the inventory, although a few took just over an hour, whilst others were finished after thirty five minutes.

The 16PF questionnaire is based on more than thirty years of factor-analytic research on normal and clinical groups. Form A

consists of 189 items, each of which offer the learner one of three responses from which to choose. The 189 responses generate 16 scores on factorially derived scales each measuring the strength and weakness of particular primary source traits. In addition to these 16 primary traits the questionnaire can generate four secondary traits which are attained from the scores of component primary factors. These secondary traits are broader than the primary ones and measure degrees of 'extroversion', 'anxiety', 'tough poise' and 'independence'.

The 16PF was selected for four reasons. Firstly it is perhaps the most comprehensive of all single personality tests, as it generates 20 personality traits using objective scoring. Secondly it is the most frequently used personality test in nursing research. Of the studies reviewed in Chapter 1, fifteen used the 16PF compared to six who used the EPPS, four who used the Eysenck PI, four who used the MMPI and six who used a variety of lesser known tests. Thus by selecting the 16PF the results of this study could be compared with the findings of some earlier nursing studies. Thirdly, as outlined in Chapter 1, some of the available tests are not suitable for this study. For example the MMPI generates scales associated with psychopathology and the EPPS employs ipsative scores which makes interpretation of the scores less meaningful. Finally, by calculating the second order traits in Cattell's 16PF one generates factor scores for extroversion and anxiety similar to the dimensions found in the Eysenck PI. Therefore some comparisons could be made, where appropriate, between Cattell's second order factors and the findings of both the nursing and the non-nursing studies outlined in section 1.2 of Chapter 1.

For the reasons outlined in the previous paragraph the 16PF appeared to be the most appropriate objective scoring personality test for use in this study. However it is not without its weaknesses.

Like all personality tests the traits are defined in very broad terms and may be too abstract, thus reducing the predictive value of the test. The evaluation of the instrument during the pilot study revealed that 82% of the learners felt that the inventory was too long and 59% found the exercise tiring. Although a shorter version of the 16PF could have been employed to overcome the learners' criticisms such a change was not desirable, as Cattell recommends that for research purposes only forms A and/or B should be used. Although the use of both Form A and B is recommended if research is being carried out, it was not possible to retest the sample using Form B because of the difficulties involved in gaining access to the learners. Lack of this retest means that the sten score recorded is only accurate to + or - 0.7 sten.

As 60% of the learners in the pilot study stated that they would prefer to complete the inventory during the first teaching session of the day, presumably when they feel least tired, this was taken into account when planning the main study timetable.

(iii) A 46 item questionnaire was administered to the learners to elicit their family, scholastic and employment background. It also covered the learners' attitude to study and methods of study. (See appendix VI) The data was collected during the theoretical component of module 2, once the module 1 examination had been administered. Most learners completed the questionnaire in seven minutes and none took longer that ten minutes. The main reason for choosing this type of instrument was that a wide range of information could be collected in a very short space of time. As the researcher was having to be allocated time to collect data during a very tight theoretical programme this was an important advantage.

The questions were mostly designed using a multiple choice format, although 30% used a forced choice format. This enabled the coding frame to be automatically determined in most cases. Coding frames for the questions that did not fall into this category are outlined in Appendix VII. The questions were presented in four sections.

Section one contained 14 items related to personal background. Items 3 and 5, related to social class, were included to enable comparisons with Singh's study (1970), Birch's study (1975) and Jones's study (1983). In Singh's study 50% of his sample were classified as coming from social classes 1 and 2, compared to 6% being classified as coming from social classes 6 and 7. The Hall-Jones scale was used to classify the occupations. In Birch's and Jones's studies 24% of students came from social classes 1 and 2. These figures are based on the Registrar General's classification. Similarly item 4 was included to compare the percentage of married learners with those in Birch and Jones's studies. Items 6 to 14 were designed to gauge the presence of some factors within the family environment that can have a positive or negative effect on studying.

Section two contained 3 items related to schooling. Item 15, eliciting the type of school attended, is based on Scott-Wright's study (1968) where students who went to fee-paying or junior secondary schools were less successful in nurse training than those who had attended senior secondary schools. The other 2 items are included because the age at which one leaves school and/or the number of secondary schools attended may affect the number, type and quality of subsequent school academic grades.

Section three on employment contained 5 items related to the learner's experience of unemployment, either directly or vicariously.

These items were included as they could influence one's motive to enter nurse training. Items 23-28 which cover parental attitudes to employment choice and reasons for entering nursing are included to enable comparisons with earlier studies, particularly the work of Scott-Wright (1968) and Singh (1970).

Section four contained 18 items related to studying. Items 29-31 and 36 are based on findings outlined by Entwistle and Entwistle (1970) and Entwistle and Wilson (1970). Item 35 is based on a finding by Cowell and Entwistle (1970). Items 30, 32, 33, 34 and 35 are designed to elicit study methods and items 37-46 are designed to elicit (on a broad basis) attitudes to studying.

When section four was originally designed the word 'usually' found in items 30-35 was not included. However when this instrument was evaluated during the pilot study, 37% of learners expressed a difficulty with the interpretation of at least half of these items. The reason given was that their response could vary. They suggested that the inclusion of the words 'most frequently', 'usually' or 'most often' would prevent this difficulty with interpretation, as it would clarify the item for them. Thus in the final draft of the instrument the word 'usually' was included.

The main problems in the design of the questionnaire were ensuring a logical order of the items being presented and ensuring that the questions were easy to interpret. Again the evaluation sheet used in the pilot study was invaluable and led to the instrument being revised and evaluated three times before the final draft was ready for use in the main study.

The main weaknesses in the questionnaire are firstly that there are too few items to explore each section adequately. Secondly many of the items fail to provide in-depth information because of the

absence of subsequent open questions. A good example of this is the question "What age were you when you left school?" The next question ought to have explored why the learner either left school as soon as was legally possible, or stayed on beyond the compulsory leaving age. Thirdly some items elicit relatively superficial data. Two examples which demonstrate this are item 15 - type of school attended, and item 45 - friend's opinion of learner's study habits. Finally item 3 omitted to instruct the respondent to enter father's occupation even if he was deceased. However in the main study this omission was corrected verbally during the administration of the instrument.

The main strengths of the instrument are the clarity of the items, the range of data covered, the speed and ease of administration, and its reliability. When the questionnaire was readministered during the pilot study 84% of the items had at least 85% reliability. The reliability of the remaining 16% of the items ranged from 69% - 78%. There was an interval of 2 days between the first and second administration of the questionnaire. Another strength of the instrument is that it is easy to code the responses to the items.

(iv) The Kuder Vocational Preference Record (1973 edition, Form C/E) was administered to the learners to assess their relative interest in 10 general occupational themes. It was administered during the theoretical component of module 2, by which time the learners had just over three months clinical experience which gave them some insight into what was involved in the work of a learner nurse. Most learners took about fifty minutes to complete the inventory. One or two learners were finished within half an hour, but some learners required one and a quarter hours to complete the instrument.

The Kuder Preference Record is based on extensive item analysis.

The reliability of the scales clusters around a coefficient of 0.90. This coefficient is determined by the Kuder-Richardson technique. Form C/E consists of 168 items of the forced choice triad type. For each of the three activities listed in an item the learner has to indicate which he would like most and which he would like least.

The 168 items generate raw ipsative scores for the 10 occupational themes which are then converted into percentiles. A verification score (V-score) to check the confidence which can be given to a respondent's answers is also calculated. For comparison mean scores are available for a variety of occupations including nursing.

The Kuder Preference Record was chosen for five reasons. Firstly it has been widely used, particularly in North America by centres specialising in vocational guidance. Secondly the 10 occupational interests cover a wide range such as mechanical, computational, social service, scientific and literary interests. Thirdly although the instrument does not relate specifically to employment categories, a review of the literature tentatively suggests that a low score in the general area of 'social service' and/or a high score in the general area of 'outdoor' may correlate with a learner's failure to fully utilise their academic potential. Perhaps some of the scores in the other general areas of occupational interest may correlate with the learners use/lack of use of academic potential. Fourthly it was selected because it was self scoring. Finally of the instruments reviewed in section 1.3 of Chapter 1, the Kuder Vocational Preference Record was the only instrument which appeared to have any discriminatory powers. All the other instruments reviewed failed to discriminate within a nursing population.

Although the Kuder Preference Record was selected for use in the main study some weaknesses in the instrument for the task in hand must

be acknowledged. It is a North American instrument, and although Form C/E is a United Kingdom edition the norms supplied for the test are American. Because the scores obtained from the instrument are ipsative in nature, any comparisons of percentile scores with other studies or groups can only be tentative and very general. Care has to be taken when interpreting high scores on the literary interest in particular, but also on the musical and artistic interest. It is known that high scores in these interests may indicate neuroticism rather than genuine interest. (Gilbert and Jessup 1975)

Responses to each item are achieved by the learner using a pin to prick his/her preferences through five sheets of paper. The pilot study evaluation revealed that none of the learners found this method of response easy. 85% reported that they found the pin difficult to use and a further 15% reported that they found the pin initially difficult to use. The fact that the pin was difficult to use may account for 90% of the learners in the pilot study feeling that the inventory was too long, and 85% of the learners reporting that they found the exercise tiring. As 75% of the learners in the pilot study stated that they would prefer to complete the inventory during the first teaching session after lunch, this was taken into account where possible when planning the main study.

The instrument is self scoring, but the pilot study revealed that 13% found scoring difficult, especially for scales 4 and 5. A further 20% found scoring initially difficult. When the scores for the pilot study were checked, a 16% error rate in the self-scoring was found. Consequently the researcher chose to calculate the scores in the main study herself. Why such an error rate occurred may be linked to the difficulty of scoring expressed by some learners. As scoring was carried out immediately after the inventory was completed, tiredness

might have been a factor.

Of all the instruments piloted this one was the least popular, mainly because one's hand becomes sore quite quickly due to the use of the pin to score the 168 items.

(v) An interview schedule designed to explore in greater depth certain aspects of areas already covered in the 46 item questionnaire was administered during the theoretical component of module 3. The interview schedule was also designed to explore certain aspects of nurse training and learner attitudes towards people with different types of personality within nursing. (See appendix VIII) It is a structured interview schedule which covers four main areas:- family background, school and choice of career, nurse training and people as nurses. It was not administered until module 3 so that the learners had a minimum of nine months training before responding to questions about their training. This also gave them time to experience working with different nurses before being asked to offer opinions related to the personalities of people least/best suited to be nurses.

Immediately prior to the interview the learners were told by the researcher that she would like to use a tape recorder during the interview in order to ensure accurate reporting of the learner's answers, and spend less time writing a precis of what the learner was saying. However the researcher stressed that if the learners felt that the use of the tape recorder might inhibit them then the researcher would prefer, for the sake of honesty in reporting, to work without the tape recorder. One learner requested that the tape recorder was not used and the researcher complied with her wishes.

As the interview takes between fifty minutes and one and a quarter hours to complete it was not possible to interview the total sample,

due to time constraints and the very tight programming of the theoretical modules. Following discussion with advisors it was decided to select the extreme ends of the sample for interview, using their academic qualifications as the criterion. Using this criterion 38 learners were categorised as having low academic qualifications, and the bottom 25% of this group (9.5 learners) were selected to be interviewed. 40 learners were categorised as having high academic qualifications, and the top 25% of this group (10 learners) were selected to be interviewed. Thus a total of 20 learners, representing 15% of the total sample, were selected for interviewing. As the learners for interview were selected within four weeks of commencement of training a further eight learners, four from each group, were chosen to act as reserves in the event that a selected learner left or had their training discontinued. Although the selection was made early in the study, before most of the other data had been collected, the learners were not told who had been selected until the day of the interview. The decision to do this was based on the pilot evaluation which suggested that the longer the learner was aware that he/she had been chosen the more anxiety was experienced. It was also noted during the pilot study that sometimes learners who had several days prior warning were absent on the day of the interview and returned to College the following day.

The interview schedule consisted of 75 questions. A minimum of 53 questions and a maximum of 69 questions were answered by the learner depending on the responses to the various questions. 27% of the questions are closed questions and they are mainly used to introduce a subsequent open question. For example question 32 asks "Are you enjoying your training?" Depending on the response the subsequent open question is either "Why is that?" or "What is the most enjoyable

part of it?"

The first part of the interview deals with the learner's family background. The information gleaned from the first question is simply designed to help the interview to 'get started', as this data has already been collected using previous instruments. The questions in this section concentrated on two areas. The first area investigated the reaction of the people the learner was living with when they discovered that the learner wished to train as a nurse, and the effect that their response had on the learner's decision. This area was probed to compare the results of previous studies relating to parental attitudes with the learner nurse of today. See Scott-Wright (1968), Singh and Smith (1975), Bandura (1977) and Baumeister et al (1985). The second area investigated the perceived effect that unemployment would have on the learner, and on those living with them, if they were unemployed. This area was probed to see if an awareness of the effects of unemployment motivated the learner to use his/her potential during modular examinations, thus ensuring that his/her training would never be discontinued due to academic failure.

The second part of the interview was concerned with school and choice of career. Questions 13 and 14 were asked to establish the type of educational system to which the learner had been exposed. Questions 15-20 probed the attitudes of the learner and his/her parents and teachers towards examination results, to see if attitudes established during secondary schooling had any effect on the way learners performed in nursing examinations. Questions 21-25 and 30 were asked to establish whether school subjects had been planned with nursing in mind, or whether nursing was considered only at a later date, perhaps once it was clear that it was not possible to follow the first career choice. This data was collected to see if there was

any relationship between initial career choice and examination performance during nurse training. The researcher was also interested in how many learners in the sample had initially chosen medicine as a career, and why they had not pursued their first choice. The attitude of teachers towards nursing as a career was probed in question 22 to establish the type of attitude teachers conveyed to their pupils. Questions 26-29 again probed unemployment, but this time to establish if the learner had any actual experience of it, either directly or vicariously, and to explore the effect that the reality of unemployment had on them. The rationale for these questions is the same as that outlined previously.

The third part of the interview is concerned with nurse training. Questions 32-36 explored whether the learner had enjoyed his/her training so far, and the reasons for his/her responses to the questions. Questions 37-40 probed the learner's degree of interest in promotion in nursing. The data was collected to establish its effect, if any, on the use of academic potential in modular examination results.

Questions 41-52, with the exception of question 46, explored the learners' attitude to nursing theory, and the reasons for their attitudes. This was to establish if there was any difference in attitude between those learners who used their academic potential in the modular examinations and those who did not use their academic potential. Question 51 also revealed general attitudes towards training as did questions 32-36, 45 and 46. Questions 47 and 48 were designed to explore why learners study because, as can be seen from section 1.5 of Chapter 1, this is an area which has been given scant attention within nursing.

Questions 53-62 explored the learner's concept of self, tutors,

and peers, particularly in relation to academic qualifications. These questions were designed to explore whether the learner's perception of how he/she, and others, viewed his/her academic qualifications affected the quality of their marks in modular examinations. Question 60 explored the range of qualifications, including academic qualifications, which the learner felt were necessary in order to train as a registered nurse. Question 63 explored the reasons offered as to why the learners thought their peers had chosen nursing as a career. This could make an interesting general comparison with the reasons given by the learners in the introductory module.

The last twelve questions are concerned with people as nurses. Questions 66, 67, and 68 were based on items 34, 98, and 106 in Cattell's 16PF, and have been designed to see if the learner's concepts of self have any bearing on whom they would accept or reject for entry to nurse training. These questions were also used to probe why learners would accept or reject particular types of people. Question 64 enabled the learners to state the types of people that they felt should not be recruited to nurse training, and why they felt that way. Having established a dialogue about types of people in nursing, question 72 was designed to probe how contented the learners were within nursing, and why they felt the way they did. Once again this data was examined to see if there was a relationship between contentment and and the use of academic potential.

The main problems in the design of the interview schedule were ensuring that within each section the questions followed a logical order, commencing with general rather than specific questions, and yet were clear and stimulating. They also had to be presented in a non-threatening and non-anxiety provoking manner, in an environment which was conducive to interviewing. Again the evaluation of the instrument

during the pilot study proved invaluable in ensuring that the questions and their method of presentation met those criteria. Another problem was the tendency, during construction of the schedule, to assume things about the learner. For example, to assume that all learners felt that promotion within nursing was important, or that all learners studied. However the biggest problem was designing an interview schedule which would take no more than an hour to implement, yet still cover the areas to be investigated. The Colleges had indicated that the interviews would have to be conducted during a study period, and most study periods last for an hour. Consequently there were times during the interviews when the extent of probing had to be curtailed in order to ensure that the interview was completed within the time allocated.

The main problem in the collation of data from the interview was in constructing a code book which catered for the flexibility necessary when coding open questions, and yet was comprehensive enough to handle the data. The pilot study interviews were used to modify the coding frames following analysis of a sample of schedules. Using this method the final coding book was produced. (See appendix IX) For ease of analysis the codes were recorded on a transfer sheet rather than on the interview schedule. To check the reliability of the code book a random sample of interviews from the main study were coded by someone experienced in coding. All the data for the analysis was coded by the researcher. The pilot study was also used to test the reliability of the interview schedule. The interview was conducted twice with each subject. A period of seven or eight days existed between the first and second interview. 73% of items had at least 74% reliability. The remaining 27% of the items ranged from 67% - 75%.

(vi) An interview schedule was designed to be used with learners who decided to leave nursing, or whose training was discontinued by the College. (See appendix X) The schedule consisted of 44 questions, although if the learner, prior to leaving, had completed the 46 item questionnaire administered during module 2, the number of questions in the schedule was reduced to 35. The first questions related to the response of those people living with the learner when they were told about the learner's decision to train as a nurse, the reason for choosing nurse training, and other career ambitions. Questions 5-30 covered areas similar to those described in relation to the interviews conducted during module 3. For example, the learner's experiences during training, attitude towards nursing theory, self concept and self confidence. Many of the questions used for the leaver interview were identical to the module 3 interview. However the thrust of the leaver interview was directed to the contribution that such factors made to the learner's decision to leave training, or to having his/her training discontinued. Questions 32-36 concentrated on the effectiveness of relationships during training, to elicit if there were any problems in this area which may have contributed to the learner leaving training. Questions 31 and 37-44 concentrated on the degree of adequacy/failure experienced by the learner following leaving or being discontinued from nurse training. Questions 40 and 41 were included in order that the responses could be checked with the official records to elicit any discrepancies in the reason given for a learner leaving or having his/her training discontinued. Questions 11, 31 and 33 were included to enable a comparison between those who left training during this study and those who left training during Birch's study (1975).

In the event the leaver interview schedule was only used once, despite the fact that within eight months 6 learners had resigned and another 6 had their training discontinued. Within the first five months of training 5 learners had resigned and 1 had been discontinued. At the beginning of the study all of those learners who had now left originally agreed that they could be approached for interview if they left training, or were discontinued. However when approached by the researcher only 2 learners agreed to be interviewed, and one of them failed to keep the appointment. The remaining 4 learners decided that they had changed their mind and no longer wished to be interviewed. Because of the very poor response rate it was decided to eliminate the use of this instrument from the study.

This decision was taken with regret because the instrument may have given some valuable insights into the experiences during training of those who subsequently left or were discontinued. This data could then have been compared with the experiences of those learners still in training. Comparisons could also have been made between the two groups in relation to their attitudes to study. The reason why these learners declined to be interviewed at the last minute is unclear. It could not have been due to the venue of the interview, as it had been stated that the interview would be conducted outwith the College premises, unless both the DNE and the learner involved were willing to have it conducted on College premises. If the interview was to be conducted outwith the College premises the venue was to have been selected by the learner.

CHAPTER 3.

ANALYSIS OF DATA.

The analysis of the data is presented in sections, and where possible these sections have the same headings as those used in Chapters 1 and 2. Depending on the level of measurement and the type of statistical test used the dependent variable was either achievement or results.

The first section outlines the method of analysis. The next 5 sections examine characteristics of the sample in relation to the following variables; academic qualifications of the learners, learner achievement groups, attrition rates, learner relocation, age, sex and marital status. The remaining sections analyse the sample in relation to the reasons for choosing nursing, Cattell's 16 PF Questionnaire, family, scholastic and employment background, studying, and the Kuder Vocational Preference Record. The final section presents a detailed account of the 20 learner interviews with the 10 most academically qualified learners and the 10 least academically qualified learners in the sample.

3.1 Method of Analysis

a. Qualitative data

The tape for each interview was played and a record made of the categories to which the responses belonged. This was done using a code book.(See appendix IX) A sample of the tapes were replayed for the purposes of inter-rated reliability. There were no differences between raters in categorisation. Once coded, categories were then quantified. Transcripts were made of the responses to open questions.

b. Quantitative data

This data was analysed initially using descriptive statistics such

as frequency counts for academic qualifications, attrition rates, and relocated learners, and the mean, median, mode, and standard deviation for the modular and Stage 1 examination results. The Statistical Package for the Social Sciences (SPSSX) was then used to carry out mainly inferential statistical tests.

The crucial question in these results concerns differences between achievement groups and in part the role of non-cognitive factors in predicting these differences. Consequently achievement groups were used initially as the dependent variable. The independent variables were at times qualitative in which case crosstabulations and chi-square techniques were used. Where the independent variables were quantitative the appropriate correlation techniques regression and multiple regression were employed. As a check on the above a oneway analysis of variance was also carried out. More specific information is given below.

Spearman's rho was calculated. This also enabled the independent variables to be checked for multicollinearity so that fewer variables could be entered in subsequent analysis of data if possible.

The chi square test was used to elicit differences between the groups in relation to independent variables which only achieved a nominal level of measurement. For example to detect differences in relation to the independent variable 'College of Origin'. A oneway analysis of variance was carried out on the remaining independent variables. Scheffe's test was also used to examine multiple comparisons between means.

Another way of approaching the testing of the research objectives is not to categorise the learners into achievement groups, but to use examination results as the dependent variable. This has one

disadvantage, namely that it does not focus attention immediately on the question of achievement. Instead it asks a simpler question, namely 'What are the variables which predict the learners' results?' However there are advantages to using results as the dependent variable. First it in fact allows the achievement question to be analysed. The mechanism is to partial out the effects of prior academic qualifications. This would mean entering academic qualifications as the first variable in a multiple regression. The second advantage is that results, being a large range of values, allows a more stable multiple regression equation where the dependent varible is quantitative. A third and more marginal advantage is simply that it allows a check on the statistics carried out using achievement as the dependent measure. For many purposes the two approaches should produce a similar picture.

With results as the dependent variable the following statistics were calculated. Pearson's Product Moment Correlation Coefficient to identify multicollinearity. Frequency counts to determine whether variables were normally distributed.

A multiple regression equation was calculated entering the variables in the block one at a time, commencing with academic qualifications. Some nominal variables were used by employing the coding technique known as dummy variables. The tests mentioned previously in this paragraph were employed to ensure that the variables used in the regression analysis were not highly intercorrelated, and that the variables were normally distributed, or at least that any deviations from normality were not extreme.

Finally partial correlation was used to describe the relationship between modular examination results and Stage 1 examination results while adjusting for the effects of academic qualifications.

For findings related to analysis using Spearman's correlation coefficient, partial correlation, oneway analysis of variance and regression analysis see appendices XI-XVI.

3.2 Academic Qualifications of Learners.

The 130 learners in the sample represented a broad spectrum of academic entry qualifications, from those with no academic qualifications who gained entry via the UKCC test, to those with 5 or 6 Higher grades. Table 1 illustrates the breakdown of educational attainment of the learners on entry to each College. 4 of the learners had a University degree.

Table 1: Breakdown of educational attainment on entry to each College.

	Higher Grades					'O' Grades		UKCC Test	Total
College	5+	4	3	2	1	6+	5		
A	1	4	7	8	8	4	2	2	36
B	4	4	7	15	2	0	1	2	35
C	1	1	1	3	2	2	2	0	12
D	3	6	14	17	6	0	0	1	47
Total	9	15	29	43	18	6	5	5	130

Using the academic classification defined in section 2.2 of Chapter 2 (and in the Glossary of Terms) 30.77% of learners in the study had high academic qualifications, 43.08% had average academic qualifications, and 26.15% had low academic qualifications.

Correlations were completed between academic qualifications and modular examinations. A positive correlation of 0.16 (P= 0.04) was noted. There was a positive correlation of 0.29 (P= 0.002) between academic qualifications and Stage 1 examination results.

A positive correlation of 0.50 (P= 0.0001) was noted between modular examination results during Stage 1 of training and the Stage 1 examination results. When a partial correlation test was run controlling for academic qualifications a positive correlation of 0.48 was noted, indicating that the effect of academic qualifications was negligible.

The sample used for the study represented 20% of the population of 1st level learners who were indexed for the first time in Scotland during May/June 1986. Table 2 below gives an indication of the accuracy of the sampling method.

Table 2: Differences between population and sample in relation to Stage 1 examination results.

	Population	Sample
Mean result	x%	x + 1.07%
Standard deviation	8.36	8.04
Failure rate	7.71%	6.52%

Note - These figures were calculated excluding resits or previously indexed learners.

3.3 Learner Achievement Groups

The learners were classified into one of three achievement groups as outlined in Section 2.1 of Chapter 2. (and in the Glossary of Terms) Due to the attrition rate only 92% (119) of the original sample could be used to explore the research question. 46 learners were classified as consistent achievers (38.7%) ie. performing as expected, 35 learners were classified as high achievers (29.4%) ie performing better than expected, and 38 learners were classified as

low achievers (31.9%) ie performing less well than expected.

3.4 Attrition Rates.

The attrition rate from the May/June 1986 intake during Stage 1 of training was 17.69%. This figure does not include one learner who transferred training to another College, or one learner who commenced in the May intake and then, because she was too young, was deferred to the August 1986 intake. If they had been included the attrition rate would have been 19.25%. Table 3 illustrates the number of learners who left/were discontinued, and the stage of training they had reached when they left. Ten of the learners outlined in Table 3 had above average qualifications, nine had average qualifications and six had below average qualifications. Of the fourteen learners who sat examinations prior to leaving, five failed to produce examination results which reflected his/her academic potential. Two were classified as having high academic qualifications, but produced a below average module 1 examination result, and three were classified as having results below their potential.

Eight of the learners who left had been intending to follow an RMN training in Stage 2, one had intended to follow an RNMH training and the other 16 had been scheduled for an RGN training.

Table 3: Number of learners who left/were discontinued.

College	Before module 1 exam	Before module 2 exam	Before module 3 exam	Before Stage 1 exam
A	1	0	0	1
B	4	1	5	2
C	0	0	0	0
D	6	3	0	2
Total	11	4	5	5

There was no statistical difference noted between the achievement groups in relation to those learners who completed Stage 1 of training and those who did not. However there was a 9% loss from both the high and consistent achiever groups (total 18%) and a 13% loss from the low achiever group.

3.5 Relocated Learners.

21 learners (16%) were relocated to the August/September 1986 intake due either to failure in a modular examination, failure to achieve a satisfactory assessment, or excessive sick time during a module. Table 4 overleaf illustrates the reason for the relocation, the academic classification, and the modular examination classification of the learners at the time of relocation. Nine of the learners were put back prior to the commencement of module 2, six were put back prior to the commencement of module 3, and the remaining six were put back prior to the Stage 1 examination. Two of the relocated learners were twenty two years of age, the other nineteen learners were twenty one years of age or less.

21% of relocated learners belonged to the low achievement group, 11% to the consistent achievement group and 6% to the high achievement group. A correlation of 0.23, (P= 0.01) was noted between relocated learners and achievement groups suggesting that relocated learners are less likely to be high achievers than non-relocated learners. This finding was supported by oneway analysis of variance which indicated that the high and low achievement groups were statistically different, (P= 0.03) with learners from the low achievement group being more likely to be relocated.

Table 4: Academic classifications, modular examination results and reason for relocation of learners.

Learner	Reason	Academic Classification	Examination Classification
1	Sick rate	High	Low
2	Sick rate	High	Low
3	Sick rate	High	Average
4	Sick rate	High	Average
5*	Sick rate	High	Average
6*	Sick rate	High	-
7	Sick rate	High	High
8*	Sick rate	Average	High
9*	Sick rate	Average	High
10*	Sick rate	Average	-
11	Sick rate	Average	Average
12	Sick rate	Average	Low
13	Sick rate	Average	Low
14*	Sick rate	Low	Low
15*	Sick rate	Low	-
16*	M1 exam failure	High	Low
17*	M1 exam failure	High	Average
18	M1 exam failure	High	Low
19	M1 exam failure	Average	Low
20	M3 clinical fail	Average	Average
21	M3 clinical fail	Low	Low

* Denotes learners who subsequently left training.

3.6 Age, Sex And Marital Status Of Sample.

The sample consisted of 71.54% female learners and 28.46% male learners. 13.51% of the males were married and 12.90% of the females were married. Table 5 illustrates the age range of the learners.

Table 5: Learners in sample classified by sex and age at commencement of training.

Age	Male	Female	Total number of learners
17<	3	14	17
18-20	16	49	65
21-25	14	20	34
26-30	3	5	8
31-35	0	3	3
36-40	0	1	1
41 & over	1	1	2
Total	37	93	130

The age range within this sample is different to the age range of 1st level learners indexed in 1985/86.(NBS annual report). This may be due to the increasing difficulty that school leavers have in obtaining employment as soon as they leave school. 20.16% of the learners were under 18 years of age when they commenced training compared with 13.07% of learners in this sample. 33.06% were twenty years of age or over compared with 36.92% of learners who were 21 years of age or over in this sample.

Regression

Prior to discussing the findings on age, sex and marital status of the sample in relation to inferential statistics a general overview of the findings related to regression analysis is required.

Using examination results as the dependent variable all suitable independent variables were submitted for analysis. Table 6 overleaf outlines the degree to which total variance in examination results was identified.

Table 6: Outline of regression analysis

Type of sample	% of variance	No~~ of variables	Type* of variables in equation
Total	38	9	Reasons for choosing nursing (2) Personality (1) Background (2) Schooling (1) Study (2) Occupation preference (1)
Sub-sample-learners with above average quals	78	12	Reasons for choosing nursing (1) Personality (2) Background (3) Schooling (1) Study (3) Occupation preference (1) Relocation (1)
sub-sample-learners with average or below average academic quals	28	5	Personality (2) Background (2) Study (1)

* 'Type' refers to the area under investigation. The actual variable identified under each area may vary in each regression analysis.

~~ Refers to number of variables accepted into the regression equation. 86 variables were entered for regression analysis

Using achievement groups as the dependent variable a positive correlation of 0.20 (P= 0.05) was found between age and achievement. The older the learner the more likely they were to be high achievers. There was also a correlation of 0.21 (P= 0.05) between sex and achievement, with female learners more likely to be high achievers than males. A correlation of 0.29 (P= 0.01) was noted between marital status and achievement, with married learners more likely to be high achievers than those who were single.

Regression analysis, using examination results as the dependent variable, contributed 4% of the variance to age, suggesting that older learners produced better examination results than younger learners. When regression analysis was re-run excluding those learners with above average academic qualifications, age contributed to 3% of the variance, suggesting that the older learners who are producing the higher examination results have average or below average academic qualifications.

Sex was not accepted into the regression equation for the total sample or for the sub-sample of learners with above average academic qualifications. In the sub-sample of learners with average or below average qualifications it accounted for 4% of the variance. Female learners attained higher examination results than male learners.

Marital status contributed 3% of the total variance when regression analysis was performed on the sub-sample of learners who had above average academic qualifications. It was not accepted into the regression equation for the total sample, or the sub-sample of learners with average or below average academic qualifications.

3.7. Reasons/Motives For Choosing Nursing.

The remaining variables in this and subsequent sections will be considered both in terms of the sample as a whole, and in terms of the differences which were exhibited between the group which remained in training, and relocated learners and those who left training/were discontinued.

All 130 learners (except 1) offered a minimum of 4 reasons which influenced them to become nurses. The one exception omitted a first choice in Section A, but selected a second choice. The reasons were selected by most learners from the list of reasons outlined in the 'Reasons for Entering Nursing' exercise. A minimum of two reasons were selected in priority order from each section. One learner chose to record her reasons related to Section A in prose, and three different learners also recorded their reasons in this manner in Section B. These reasons were then coded as outlined in Chapter 2, section 2.5(B)(i).

In Section A (reasons related to patients), 81.54% of learners selected a third reason, 48.46% a fourth reason and 23.08% a fifth reason. In Section B (reasons related to self), 89.23% of learners selected a third reason, 67.69% a fourth reason, and 37.69% a fifth reason. The number of students who identified with the individual statements in each section of the exercise varied, as did the priority given to the statements. These factors are illustrated in Table 7 overleaf.

Table 7: Number of learner responses to each statement, classified by rank order and statement

Section A - Choice						
Statement	1st	2nd	3rd	4th	5th	Total
1) to nurse the underprivileged	4	2	3	6	3	18
2) opportunity to care for the dying	0	1	3	3	2	9
3) opportunity to set up equipment for a variety of procedures	0	2	4	1	2	9
4) opportunity to care for people with long term illness	1	7	6	2	1	17
5) to nurse people no matter what age they are or what their illness is	39	29	13	6	5	92
6) opportunity to care for the elderly	0	4	3	5	1	13
7) to help people who are ill	18	30	22	7	0	77
8) because nurses are trusted and regarded highly by patients	3	5	9	10	2	29
9) because it is rewarding to know I have helped someone to get better	60	34	17	4	2	117
10) opportunity to care for children	2	6	2	6	3	19
11) because patients trust and rely on nurses to help them	2	10	24	13	9	58

over/

Table 7: Number of learner responses to each statement, classified by rank order and statement

Section B - Choice						
Statement	1st	2nd	3rd	4th	5th	Total
1) opportunity to meet people	10	18	24	14	9	75
2) because of the starting salary	0	0	4	0	0	4
3) to have a challenging job	41	38	17	8	1	105
4) because curious about what the work of a nurse actually involves	2	7	6	8	3	26
5) to learn about psychology,sociology, pathology, biology etc.	5	11	10	13	3	42
6) because of long term salary prospects	0	0	6	4	3	13
7) because of the esteem with which people regard a nurse	1	2	8	5	5	21
8) because I had no prospects of an alternative career	3	4	2	4	3	16
9) because you get security of employment	3	4	7	8	7	29
10) to gain job satisfaction	57	31	13	8	8	117
11) opportunity of employment while possibly looking round for another job	0	1	1	0	2	4
12) because you get the opportunity to learn about what causes illnesses	8	14	18	16	5	61

The overall percentage of responses to each of the statements ranged from 90% to 3.08%. Reasons which could be considered by the interviewing judges to be less desirable (Section A reason 3, and section B reasons 2,6,8 & 11) were favoured by less than 7% of the sample, with the exception of Section B question 6, "I came into nursing because of the long term salary prospects", and Section B question 8, "I came into nursing because I had no prospects of an alternative career." These two statements had a response rate of 10% and 12.30% respectively.

None of the reasons which could be considered to be very positive, (Section A, reasons 1,2,4,6 &10) were chosen by more than 15% of the sample. The responses ranged from 6.92% to 14.62% and covered reasons such as caring for the dying, the chronic sick, and the elderly. Table 8 illustrates the percentage of responses to each statement, classified by the statement number, from the 'Reasons for entering nursing' exercise.

Table 8: Percentage of all learner responses to each statement irrespective of order of ranking

N = 130

Section A	% of learner response	Section B	% of learner response
1	13.85	1	57.69
2	6.92	2	3.08
3	6.92	3	80.77
4	13.08	4	20.00
5	70.77	5	32.31
6	10.00	6	10.00
7	59.23	7	16.15
8	22.30	8	12.30
9	90.00	9	22.30
10	14.62	10	90.00
11	44.62	11	3.08
		12	46.92

Generally the reasons given by both the learners who subsequently left training and those who continued covered a similar range. However in relation to the reasons considered by the interviewing judges to be the most desirable ones (those in Group C), 60.00% of the learners who left training had selected either none or only one response from this group of reasons. In contrast 38.09% of those who remained in training selected either none or only one response from the same group of reasons. Table 9 outlines the interviewing judges rankings for each group. A full breakdown of the questions in each group and the percentage of agreement between the judges is given in appendix V.

Table 9: Interviewing judges ranking for each group of reasons in the 'Reasons for entering nursing' exercise.

Ranking in descending order	Group of reasons
1	C
2	I
3	D
4	G
5	E
6	A

The reasons for entering nurse training given by the relocated learners and those who continued in training but who were not relocated covered a similar range. However in relation to the interviewing judges' groupings, 25% of the relocated learners chose their first two reasons for coming into nursing from Group I, compared with 21.15% of those who remained in nursing but who were not

relocated.

25% of the relocated learners gave three or more reasons from the top rated group compared with 19.23% of those who remained in nursing but were not relocated.

75% of the relocated learners selected no reasons from the bottom group (Group A) compared with 60.58% of those who were not relocated. Similarly 58.34% of the relocated learners selected more than one reason from the second bottom group (Group I), compared with 72.12% of those who remained in nursing, but were not relocated.

No statistical differences were noted between learners who discontinued training or were relocated and their peer group in relation to reasons for entering nursing.

No statistical differences were found between any of the achievement groups and reasons for entering nursing selected from Section B. No statistical differences were found between any of the achievement groups and the first choice of reason selected from Section A. Scheffe's test indicated that high achievers and consistent achievers were significantly different at the 0.05 level of significance in relation to their second choice of reason from Section A. This finding was supported by oneway analysis of variance, which indicated that there was a significant difference between these groups at the 0.02 level. As can be seen from Table 10 overleaf, high achievers were more likely to select a self esteem reason than consistent achievers.

Table 10: Differences between high achievers and consistent achievers in relation to second reason for entering nursing

High Achievers Group D type reason	Consistent Achievers Group I type reason
I came into nursing because -	came into nursing -
1 nurses are trusted and highly regarded by patients	1 to nurse the undeprivileged
2 patients trust and rely on nurses to help them	2 because you get the opportunity to care for the dying
3 of the esteem with which people regard a nurse	3 to help people who are ill
	4 because it is rewarding to know I have helped someone to get better

When 'reason for entering nursing' was entered into the regression equation the first choice of reason from Section A accounted for 3% of the variance of examination results, and the third choice from Section A accounted for 4% of the variance. The analysis suggested that the higher the examination result the lower the reason was ranked by the interviewing judges. When the reasons given by those learners with average or below average academic qualifications were excluded from the regression analysis the first choice of reason in Section A was dropped from the equation. In this analysis the third choice of reason from Section A accounted for 5% of the variance. Again the analysis indicated that the higher the examination result the lower the reason was ranked by the interviewing judges.

When regression analysis was performed on the sub-sample of

learners who had average or below average academic qualifications the 'reasons for entering nursing' variables were all rejected from the regression equation.

3.8 Cattell's 16 PF Questionnaire.

This instrument was administered to 128 learners, as one learner left during the introductory module and one learner was deferred to the August 1986 intake because she was too young. Differences between those learners who remained in training and those who left or had their training discontinued were noted in 6 of the 16 primary factors. See Table 11. Differences reported refer to the extreme ends of the sten score range, ie 1,2 and 3, or 8,9,and 10, except in the case of factor B where a sten score of 7 was included. Below are the descriptions for each factor in Table 11:-

B+	More intelligent.	I+	Tender minded.
C-	Emotionally less stable	L+	Suspicious Self opinionated
E+	Assertive	Q4+	Tense.

Table 11: Differences between learners who remained in training and those who left or were discontinued in relation to Cattell's 16PF Questionnaire

	n = 23	n = 105
Factor	% with high/low sten score who left/were discontinued	% with high/low sten score who remained in training
B+	4.35	17.14
C-	30.43	7.96
E+	26.08	11.42
I+	26.08	6.49
L+	34.78	11.42
Q4+	39.13	12.38

There was no difference between leavers or those who remained in training in relation to Factor B- (less intelligent/ concrete thinker)

Lesser differences of between 6% and 13% were also noted in relation to factors A-, F+ and M-. Those learners who left or were discontinued were less reserved, or more happy-go-lucky, or less practical and conventional than the learners who remained in training.

Differences between the 12 relocated learners and those learners who continued in training without being relocated were noted in 5 primary factors. See Table 12. As with Table 11 the differences reported refer to the extreme ends of the sten score range. Below are the descriptions for each factor in Table 12:-

E+	Assertive.	M-	Practical.
F-	Sober, serious.	N+	Shrewd,worldly.
H-	Shy	Q2-	Group dependent.

Table 12: Differences between relocated learners and non-relocated learners in relation to Cattell's 16 PF Questionnaire.

	n = 12	n = 102
Factor	% with high/low sten score who were relocated	% with high/low sten score who were not relocated.
E+	25.00	11.76
F-	33.34	5.88
H-	16.67	5.88
M-	25.00	39.22
N+	25.00	9.80
Q2-	8.34	27.45

Lesser differences of between 7% and 12% were also noted in relation to factors B-, Q1-, and Q3-. Those learners who were relocated were less intelligent, or more conservative, or more likely to follow their own urges than those who remained in training without being relocated.

A visual examination of the sten scores for the four second order factors revealed that 17.83% of the total sample had an extroversion score of 8 or more, while 6.98% of the total sample had an introversion score of 3 or less. 10.08% of the sample had a high anxiety score (sten 3 or less) and 6.20% had a low anxiety score (sten 2.5 or less). 3.87% had a combination of a high extroversion score and a low anxiety score, and 1.55% had a combination of high extroversion and high anxiety scores.

A low Factor Qiii score infers that one is "likely to be troubled by pervasive emotionality" and may experience frustration. A high score on this factor infers that one is "likely to be enterprising, decisive and have a resilient personality." 3.10% of the total sample had a low score and 22.48% had a high score on this factor. The scores on Factor Qiv revealed that 17.05% of the total sample had passive personalities and were "likely to desire and need support from other persons." At the opposite end of the scale less than 1% of the sample (0.77%) obtained a score that reflected an "aggressive, independent, daring, incisive" personality.

In relation to the four second order factors differences between those learners who left or had their training discontinued are illustrated in Table 13 overleaf. The descriptions for the second order factors in Table 13 are:-

Qi+ Extroversion. Qii+ High anxiety.

Qiii+ Tough poise. Qiv- Subduedness.

Differences between the two groups of learners were found in

two of the four factors.

Table 13: Learners who remained in training and those who left or were discontinued in relation to 2nd order factors from the 16 PF Questionnaire.

Factor	n = 13 % with high/low sten score who left/were discontinued	n = 113 % with high/low sten score who remained in training
Qi+	15.38	18.58
Qii+	30.77	7.96
Qiii+	23.08	23.01
Qiv-	7.69	17.70

There was a difference between relocated learners and those who continued their training with their original peer group in two of the four second order factors. 41.67% of the relocated learners were extroverted (Qi+) compared with 15.69% of those learners who remained with the original group. 41.67% of the relocated learners demonstrated a "tough poise" (Qiii+) compared with 20.59% of those learners who remained with the original group. "Tough poise" describes a "resilient enterprising personality" which is "likely to miss the subtle relationships of life, and to orient to behaviour too much toward the obvious."

Oneway analysis of variance failed to identify differences between the achievement groups in relation to either the first or second order factors of the 16 PF Questionnaire. One factor correlated with achievement groups. There was a negative correlation of 0.19 (P= 0.04) with Factor B. This suggested that abstract thinkers were less likely to be high achievers than concrete thinkers.

The findings from regression analysis varied, depending on whether the total sample or sub-samples were used. Table 14 illustrates this variation.

Table 14: Relationship between Cattell's 16PF Questionnaire and examination results using regression analysis

Sample description	16 PF Factor and finding
Total sample	Q1: The more experimenting/free thinking the higher the examination result 1% of variance
Sub-sample of learners with average or below average academic quals	A: The more reserved/detached the higher the examination result 6% of variance
	Q2: The more group-dependent the higher the examination result 7% of variance
Sub-sample of learners with above average academic quals	C: The more affected by feelings/ emotionally less stable, the higher the examination result 4% of variance
	I: The more tender-minded/ sensitive, the higher the examination result 2% of variance

As can be seen from Table 14 the percentage of variance of the factors is greatest in the average or low academically qualified sub-sample. Instability of the regression equation within sub-samples is to be expected and the differences identified here should be interpreted with caution. However there is suggestive evidence that a different set of factors are predicting examination results for the average and low academically qualified sub-sample. This has

implications for the management of such learners on courses, since the factors which determine their success or failure may be different from those learners who have high academic qualifications.

No statistical significance was found between the second order factor Qi (introversion/extroversion) and examination results.

3.9. Family, Scholastic And Employment Background.

The 46 item questionnaire which probed these three areas was administered to 119 learners, as 11 learners had left prior to module 2.

The Hall-Jones Scale was used to describe the sample in relation to social background. The percentage distribution of the sample is illustrated in Table 15.

Table 15: All learners classified by social class

N = 119	
Social class	% of learners
1	5.04
2	14.29
3	5.88
4	10.92
5	37.82
6	17.65
7	7.56
unemployed	0.84

14.29% of those who completed the questionnaire were married. The social class of the married learners is indicated in Table 16.

Table 16: Married learners classified by social class

N = 17	
Social class	% of learners
1	0.00
2	29.41
3 & 4	17.65
5	29.41
6 & 7	23.53

There was no statistical significance between social class and either achievement grouping or examination results.

The majority of learners reported that parental attitude towards their choice of career was favourable. Table 17 illustrates parental attitude in detail. Some of the learners chose the "does not apply" option for parental attitude because a parent was deceased or the learner was married, but 48.39% of those who chose this option were not married, and both parents were still alive.

Table 17: Parental attitudes towards the choice of nursing as a career

N = 119		
Attitude	% response of father	% response of mother
entirely favourable	47.90	61.31
favourable/some reservations	15.13	21.01
indifferent	10.92	4.20
rather opposed	4.20	3.37
do not know	4.20	1.68
does not apply	17.65	8.40

Of the learners who were married all but one reported that their spouse's attitude was favourable, although 30.03% of the spouses had some reservations. Parental or spouse's attitude towards choice of career was of no statistical significance in relation to either achievement grouping or the quality of examination results. No other person appeared to influence significantly the learner in relation to their choice of career.

57.98% of the learners lived in the nurses' home. Of the remaining 42.02% who lived out, 36.23% lived with 2 people or less, 28.98% lived with 4-6 people and 2.90% lived with more than 6 people. 14.49% lived with someone under ten years of age and 4.35% lived with someone under five years of age. 11.59% lived with someone who was either physically or mentally infirm. 62.50% of these infirm people required assistance from the learner. No statistical relationship was found between the number and/or age of the people a learner was living with and either the achievement grouping or examination results. Similarly there was no relationship between living with someone who was either mentally or physically infirm and the two dependent variables.

Regression analysis of the above average academically qualified learners contributed 9% of the variance for examination results to living in the nurses' home. It suggested that those within this sub-sample who live in are less likely to produce high examination results. This finding was not noted in either the opposite sub-sample or the total sample.

90.76% of the sample attended a comprehensive school; 1.68% attended a feepaying school; 3.36% attended a senior secondary school; 0.84% attended a junior secondary school and 0.84% attended a technical school. A further 2.52% attended a convent or junior

seminary school, or were educated outwith the United Kingdom. While the number of secondary schools attended had no significant effect on achievement grouping, it did account for 3% of the variance of examination results when both the total sample and the high academically qualified sub-sample of learners were analysed. Number of schools attended had no apparent significance in relation to learners who had average or below average academic qualifications.

66.39% of learners had been unemployed at some time, and 45.38% had experience of living with someone who was unemployed. 33.61% had experienced both being unemployed and living with someone who was unemployed. All but one of the 26.89% of learners who stated that security of employment influenced their decision to enter nursing very strongly or strongly had experienced unemployment personally or vicariously. Of the 27.73% who said that security of employment had no influence on their decision to enter nursing 60.60% had experienced unemployment personally or vicariously. Of the 45.38% of learners who said that security of employment influenced them a little 77.78% had personal or vicarious experience of unemployment. Security of a career after qualifying had a greater influence on the decision to enter nursing than security of employment per se. 54.62% of learners stated that career security after qualifying influenced them very strongly of strongly. 12.60% stated that it had no influence at all on their decision to enter nursing. No statistical significance was found between security of employment or career and either achievement groupings or the quality of examination results.

58.34% of the relocated learners had experienced unemployment compared with 71.57% of those who remained in training, but were not relocated. Similarly 33.34% of relocated learners had lived with an unemployed person compared with 49.02% of those who remained in

training but were not relocated. Security of employment and security of a career after qualifying were less important to the relocated learner. 16.67% stated security of employment very strongly or strongly influenced them compared with 29.41% of non-relocated learners who remained in training. 33.34% stated security of a career influenced them very strongly or strongly compared with 59.80% of non-relocated learners who remained in training. No statistical relationship was found between unemployment experience and the achievement groupings, with the exception of vicarious unemployment experience. Scheffe's test indicated that consistent achievers and low achievers were significantly different (P= 0.05) in relation to having lived with an unemployed person. The consistent achievers were more likely to have lived with an unemployed person than the low achievers. This finding was supported by oneway analysis of variance which noted a significant difference between the two groups.(P= 0.008)

No statistical relationship was found between the employment experience of the sub-sample of learners who had average or below average academic qualifications and the quality of examination results. Regression analysis of the high academically qualified sub-sample revealed that 2% of the variance of examination results was due to a negative relationship between unemployment and examination results. It was suggested that the better the quality of the examination result the less likely a learner from this sub-sample was to have experienced unemployment personally.

3.10 Studying

The last section of the 46 item questionnaire probed learners' attitudes to study along with some questions in Section 1 related to

the study environment. Of the 42.02% of learners who lived out, 88.41% said there was a room in the house where they could be alone to study. Of the minority who had no room where they could be alone 37.50% said they could not study if there was background noise. Half the learners living in the nurses' home said they could not study if there was background noise. Overall, 46.22% of the learners in the sample stated that they could not study if there was background noise.

There was no statistical significance between noise or the facility to study in an empty room and either achievement groupings or examination results.

63.87% of learners stated that they were easily distracted from studying, and 36.13% said that they were not easily distracted. A correlation of 0.21 (P= 0.02) was found between achievement groups and the power of peer pressure to abandon studying. The results suggested that those who rarely allowed friends to dissuade them from studying were more likely to be high achievers. No statistically significant differences were noted between the achievement groups and either their study attitudes, methods, or habits. Variables related to distraction levels were rejected from all the regression equations, except for the one variable concerned with studying and peer conformity. Regression analysis of the high academically qualified sub-sample suggested that 2% of the variance of examination results was related to this factor. The higher the examination result for this sub-sample the less likely the learner was to experience feeling the odd one out in their circle of friends when they had to study.

When re-reading self-taken notes after a teaching session most learners found them easy to understand, although 17.65% admitted they could not understand them. Regression analysis using both the total

sample and the sub-sample consisting of the high academically qualified learners suggested that the easier the notes were to understand the better the quality of examination result. This variable accounted for 2% of the variance when the total sample was used, and 4% when the high academically qualified sub-sample was used. This variable was rejected when entered into the equation using the average or low academically qualified sub-sample for analysis.

Reasons given for stopping studying are illustrated in Table 18 and assignment completion times are illustrated in Table 19 overleaf.

Table 18: Reasons for stopping studying

N = 119	
Reason	% of learners
tired	30.25
bored	27.73
time allocation ended	8.40
understood material	33.62

Relocated learners were more likely to stop studying because they were bored or tired. 83.34% gave these reasons for stopping studying compared with 56.31% of those who remained in nursing but were not relocated. Regression analysis suggested that in relation to the average or low academically qualified sub-sample of learners the higher the quality of the examination results the more likely the learners were to stop studying because they were tired or bored. (4% of the variance) Apart from this finding there appeared to be no statistically significant relationship between reasons given for ceasing a study session and either achievement groupings or quality of examination results.

Table 19: Assignment completion time

N = 119	
Completed	% of learners
promptly	8.40
soon as possible	65.55
put off as long as possible	26.05

Those who allocated a given time to studying did not often complete their assignments promptly, and occasionally put off doing assignments for as long as possible. Just over half the learners studied when they felt like it, 40.34% set aside definite times for study and 8.40% only studied immediately before an examination. 31.93% decided what they would study as they went along, and 11.77% who had initially preselected a topic for study changed their minds once they had started. 91.67% of the relocated learners stated that they studied when they felt like it compared with 46.60% of the non-relocated learners who remained in nursing.

Just over half the learners made notes when studying, and a further 14.94% wrote questions based on the subject matter and then tried to answer them. For 32.77% of the sample studying involved no activity other than reading. No statistical difference was found between study frequency or study method and either achievement groupings or quality of examination results.

Table 20 overleaf illustrates the reasons given for studying. 52.10% admitted that they sometimes put off studying because they disliked it.

Table 20: Reasons for studying

N = 119	
Reasons	% of learners
to get through exams	5.88
to get average mark	12.61
to get above average mark	46.22
to get best possible mark	35.29

50% of the relocated learners stated that they studied with the intention of attaining the best possible mark compared with 33.01% of the non-relocated learners who remained in training. No statistically significant differences were found between the reason for studying and the various achievement groups.

Regression analysis of the total sample indicated a positive correlation between the reasons outlined in Table 20 above and the quality of examination mark attained. This variable accounted for 6% of the variance. When the sub-sample containing the high academically qualified learners was used for analysis the percentage of the variance for this variable increased to 19%. The same variable was rejected from the regression equation when the average or low academically qualified sub-sample was analysed.

3.11 The Kuder Vocational Preference Record.

This instrument was administered to 119 learners, as 11 learners had left prior to module 2. However the scores of 4 learners were not analysed as they had V-Scores of less than 37 (actual scores 35,34, 30 and 30) and therefore their other scores were of doubtful value. These 4 low V-Scores represent 3.36% of the total sample and is within Kuder's expected range for low V-Scores which is 1-5%. Table 21 illustrates the range of scores for the 10 occupational themes. A

high score represents scores at or above the 68th percentile, an average score represents scores at or between the 67th and the 33rd percentile, and a low score represents scores at or below the 32nd percentile. Table 22 overleaf illustrates the mean score for each theme, expressed in percentiles.

Table 21: Range of scores for the 10 occupational themes in Kuder expressed as percentiles

N = 115

Theme	% with high score	% with average score	% with low score
outdoor	23.48	38.26	38.26
mechanical	7.83	33.04	59.13
computational	25.22	46.09	28.69
scientific	57.39	29.57	13.04
persuasive	27.83	39.13	33.04
artistic	32.17	37.40	30.43
literary	25.22	43.48	31.30
musical	32.17	40.87	26.96
social service	55.65	36.52	7.83
clerical	22.61	25.22	52.17

22.22% of those learners who had a high outdoor score had a social services score on or below the 46th percentile. Of the 25% of learners who had a high literary score 13.79% also had high musical and artistic scores. A further 44.83% had either a high musical or a high artistic score.

No statistical differences were noted between any of these vocational variables and the various achievement groupings.

One variable, the clerical theme, contributed 4% of the variance of examination results when the total sample was analysed. When the average and low academic sub-sample was analysed the variable was rejected from the equation. In the case of the total sample and the high academic sub-sample the lower the percentile score on degree of

interest in clerical type work the higher the quality of examination result. No other occupational theme showed any statistically significant relationship to the quality of examination results.

Table 22: Mean score for each occupational theme in Kuder expressed in percentiles

N = 115			
Theme	Mean score	Theme	Mean score
outdoor	44.03	artistic	50.42
mechanical	28.78	literary	48.49
computational	49.70	musical	50.52
scientific	66.57	social services	68.37
persuasive	48.69	clerical	38.75

Only the scores of 11 of the twelve relocated learners were examined, as 1 learner had a V-score of 30. Table 23 illustrates the differences between the relocated learners and the non-relocated learners who remained in training in relation to the occupational themes. High and low score ranges cover the same percentile ranges as outlined for the previous Table.

Table 23: Percentage numbers of high and low groups on each of the Kuder occupational themes between relocated and non-relocated learners

		n = 11	n = 104
Theme	Score range	relocated %	not relocated %
mechanical	low	72.73	57.69
computational	low	45.45	26.92
scientific	high	36.36	63.46
persuasive	low	27.27	11.54
artistic	high	18.18	33.65
literary	low	9.09	33.65
musical	high	18.18	33.65
social science	high	18.18	59.62
clerical	low	36.36	4.81

As can be seen from Table 23, relocated learners have lower percentile scores on all themes than non-relocated learners, with the exception of the literary theme.

3.12. Learner Interviews.

A total of twenty learners were selected for interview. Half were drawn from the top 10% of the high academically qualified learners and half were drawn from the bottom 10% of the low academically qualified learners. The sample was predominantly female (75%) and half were aged over 21 years. Only five of the sample were married, two of whom were male learners.

During the clinical experience of module 3, four learners were relocated and one learner, who came from the very low academically qualified group, resigned. The relocated learners all came from the very high academically qualified group, one of whom was relocated due to a module 1 examination failure and the others relocated due to excessive sick time.

The most notable observation in relation to these two groups of learners was the homogeneous nature of the individuals interviewed. From the analysis of the 20 interviews it was clear that a few differences existed between the two academic groups, but that the quality of nursing examination results was not one of them. It was also evident that in many instances specific attitudes or beliefs were not found exclusively in either the low or the high academically qualified group, but were shared by some learners from both groups. Occasionally these learners had above average examination results as a common factor, but more often there was no correlation with

examination results.

Because of the nature of the findings the one difference between the two groups which reflected the use or non-use of academic potential will be presented in Section A, along with general differences noted between the two groups. Section B will outline general differences and/or similarities between those learners with above average examination results and those with average or below average results. Any findings which are felt to be of general interest and which afford insight into the area being studied will also be mentioned in Section B.

Unless stated differently, findings presented represent learners in both the high and the low academic group.

Section A

The one factor which demonstrated a difference between the high and the low academic group in relation to the use of academic potential was one of the group of reasons given for entering nursing. When an altruistic reason was offered by a learner from the low academic group they were likely to perform above their expected potential. When an altruistic reason was offered by a learner from the high academic group it was not reflected by their use of potential in nursing examination results.

The following subsections outline general differences between the high and the low academic group, but no positive correlation was found between any of these differences and the use of academic potential.

(i) Reasons for entering nursing

Half the learners interviewed outlined a range of altruistic reasons for deciding to enter nursing which are reflected in the following extracts:

> "To work in the third world because health is one of the basic needs of those countries."
>
> "Because I (pause) its a worthwhile job, it's a job where you are helping people, you are not just sitting behind a desk all day, though obviously you are helping people if you give them information, but you're not actually doing anything to help their physical or emotional wellbeing, whereas you can do that as a nurse."
>
> "Because I saw that I could help people that were less able than myself, thought I could."
>
> "Chose psychi (psychiatric) nursing because I wanted to help those shunned by the world. I know mentally disturbed people, the stigma (pause) no support, and wanted to help."
>
> "Well my Mum died around that time and that really got me thinking about nursing and the medical profession and when I went up to see her in hospital that influenced me, seeing nurses and that and I started to think more about being a nurse. When I went up one day there was this nurse who was there and she was really an ideal nurse. I looked at her and thought I would like to do something to help people and for other people to look at me like that."

Seven of the learners with an altruistic reason belonged to the low academic group.

Less common reasons for entering nursing were found only in the high academic group. Below are some examples:

> "I didn't want to go to College so this seemed a way out."
>
> "I was fed up with my previous job and thought well (pause) why not try nursing."
>
> "I was interested in biology and the science of nursing, or rather theory behind the skills, so here I am."
>
> "It's a job I've always really liked the idea of doing. Nursing is actually physically doing something (pause) something varied. More physical than mental work - I enjoy bedmaking, doing dressings and even sitting talking to the patients as long as you are not doing it all day."

None of the learners who stated these less common reasons offered them without mentioning a reason from one of the categories outlined in appendix V, although only one mentioned a reason from the altruistic group. All but one of these learners from the high academic group who offered less common reasons attained above average examination results.

Of the seven learners from the low academic group who outlined a range of altruistic reasons for deciding to enter nursing, three had above average examination results and four had average examination results. Thus they produced results above their expected potential.

Thirteen of the learners displayed a negative attitude towards those of their peers whose only reason for coming into nursing was to avoid unemployment. The following is a typical response:

> "I can see why they came in but I don't approve. I think personally that they should know exactly where they are going. Quite often you find that these people don't know anything about the job and they have a tendency towards a blase attitude. Those who are suited to nursing are very few."

The low academic group were less tolerant than the high academic group in relation to nursing being used as a means to avoid unemployment.

(ii) Job satisfaction

A notable difference between the high and the low academic group was the type of experiences which made the work of nursing enjoyable. The learners in the low academic group expressed patient related experiences such as:

> "It's great seeing people ill, needing help and knowing that you've helped with their care."

or:

> "Doing things for them that make them happy and in that I get

satisfaction out of that. I can make them feel better and make them laugh even though they are in hospital."

The learners in the high academic group who did not have above average examination results spoke of non-patient centred experiences which made the work of nursing enjoyable such as:

"It's very varied you can't really predict what you're going to do that day. I also enjoy doing dressings, you know doing them."

or:

"I think the psychology of nursing, do you know what I mean? Using psychology to do the job in practice. Watching how it works that's really enjoyable."

Despite all learners initially stating that they were enjoying their training, on further probing four of those interviewed admitted that they would consider leaving nursing if they could find another job. They all belonged to the high academic group, and three of them had examination results below their academic potential. One learner expressed it in this way:

"Yes I have considered leaving and still do at times. I've been unhappy and I don't think it's all that it's cracked up to be. Perhaps I've come in with the wrong ideas or something, I've felt frustrated at times (pause) disappointed as well, I think you come in and when you get taught at the College about all the new systems of doing things and you go into a ward that is doing a very old regime and this has been going on for years and probably will do, then you get disappointed by it."

Another stated:

"I thought it would be varied and interesting, but that's only when you first go to a new ward, then you end up doing the same old thing every day (pause) oh the patients change, but on a medical ward it's not very interesting CVA's or dicky hearts."

(iii) Nursing theory

When questioned about how relevant the modular theory was to modular practice seven learners stated without reservation that it was all relevant. Five of the learners who held this view belonged to the

low academic group.

(iv)Perception of peers

Fourteen of those interviewed felt that not all their classmates were suited to nursing, although the majority were suited. Eight of those who felt that a minority were unsuited, felt it was due to lack of maturity. The following two statements reflect the general feeling of those interviewed:

> "I've got this thing, well I'm young as well but I've got this thing about the age group of nurses that they are not suited to it because they're (pause) I can't say it because I'm only young, but they're not suited to it because they're not grown up enough. They're immature. It's not hit them yet that they're in a profession and they've got to be caring. They've still to grow up."

> "There are a few people that are a bit silly, you know immature (pause) too young. Maybe they hadn't thought about it enough, though at the same time they seem to think they are very grown up, but they're more concerned with themselves than with nursing or the patients."

Four learners felt that some of their peers weren't suited to nursing because they lacked initiative or practical ability. The following extracts reflect this feeling:

> "They're very nice people, easy to get on with and that, but handless and clueless. You have to unravel the mess."

> "They're really nice and wouldn't do anyone any harm but they haven't got an ounce of common sense in their head. They try to do far too many things at once and it usually finishes up you're running behind them clearing everything up."

All the learners who felt that some of their peers were not suited to nursing were referring to a maximum of 16% of their class and a minimum of 4%. Those learners in the low academic group mentioned the unsuitability of their peers twice as frequently as the learners in the high academic group.

(v) Types of people in nursing

When asked if there were any types of people that they felt should

not be recruited to nursing there was one factor, prejudice, which was mentioned more frequently by the low academic group than the high academic group. Four learners wished to exclude people with religious prejudice and three wished to exclude people with racial prejudice.

(vi) Concept of unemployment

Eight learners from the low academic group had experience of living with an unemployed person compared with three from the high academic group. Six learners felt that unemployment would affect their basic living standard. These learners, with one exception, were in the low academic group. All the learners in this group mentioned problems of finding money for bills or accommodation:

> "If I lost this job I would lose my accommodation, and I couldn't afford anything very good and would have extra bills to pay." said one learner.
> Another stated:
>
> "Well, my income would be halved. May have to go abroad to earn a decent living. Woudn't be able to adequately feed and clothe my family."

Section B

(i) Examination performance.

The performance of the two groups of learners in their nursing examinations was similar, as can be seen from Table 24.

Table 24: Examination results of the interview sample classified by high and low academic qualifications

N = 20

	Examination Results		
Academic Qualifications	above average	average	below average
High	4	5	1
Low	3	5	2

(ii) School and career choice.

Fourteen of those interviewed stated that they had paid attention to school examination results during their secondary education. Three of them admitted that this only applied to the last two or three years of schooling. Some learners (4) said that they had paid attention to examination results because they had wanted to prove their ability to others. One learner reported that she:

"Wanted to show Dad. He said I was just thick."

Another learner stated:

"Because of my sister (pause) when I was doing '0' levels she was doing her Highers and her Higher results were better than my '0' level results (pause) she looked a lot better than me when they both came out on the same day."

Those learners in the high group who achieved their potential in the nursing examinations, and those learners in the low group who achieved above average examination results either had an unexplained desire to do well or to prove something as shown in the previous examples. Only one of the learners who had above average examination results does not meet this criteria. Of the learners who stated they had not paid attention to examination results, half were from the academically high group and stated that "Exams were easy, I always passed therefore I never bothered." Those learners in the low group had not been concerned, either because their interests had lain outwith school activities or they had had no career in mind for which to aim.

During secondary schooling the attitudes of teachers towards school examination results appeared to have no effect on the way

learners performed in nursing examinations.

The choice of nursing as a career for 16 of the learners took place after they had chosen their subjects for '0' grade study. Four learners had never seriously considered another career. Those who had always wished to nurse, or who now felt that there was no other job that they would wish to do, did not necessarily attain above average examination results. Of the seven learners interviewed who had attained above average marks in their nursing examinations the four from the high academic group had wanted to be a)a vet, b)a pilot, c)a nurse, and d)a teacher . The first two still expressed these desires for a non-nursing career, but despite their very high academic qualifications they were unable to gain entry to train for these careers. The three learners from the low group had wanted to be a)a teacher, b)a doctor, and c)a nursery school teacher. The latter still expressed this desire, but at present did not have the necessary academic qualifications.

(iii) Nurse training.

a) Job satisfaction

All the learners interviewed stated unreservedly at the time of the interview that they were enjoying their training. This included the learner who left three months after the interview was given. Learners who stated that one of the most enjoyable parts of their training was meeting people, as well as a particular aspect of nurse training, had above average examination results. Half of the learners interviewed had experience of nursing elderly patients and mentally ill patients.

Nine of the learners admitted that there had been times in the

past when they had not enjoyed their training. Occasionally the lack of enjoyment had been patient related, but the overwhelming reason given was poor interpersonal relationships with staff, particularly during the first clinical placement. However they did not necessarily feel that those experiences constituted a general problem with relationships. The following three examples are typical of the types of situations which caused poor staff relationships and lack of enjoyment during the first eight months of training:

> "I think it was a clash of personalities, somebody in the ward put me right off. She was constantly on your back. I think it was me for about three weeks then it was somebody else, because it was my first ward and I was first to get it I felt like it wasn't worth doing anymore. She just wasn't able to cope and we suffered for it."

> "There were times when I was on a medical ward that I didn't enjoy it and it wasn't because of the patients or anything it was actally the staff. I know module one's are the lowest of the low but I remember this Sister we had used to make out a work list, I know a lot of wards don't but she did, I don't think anyone would ever dare tell her she wasn't to, and she had given me obs (observations) to do. She wrote against my name, my surname she never said nurse or anything 'obs. complete by 12 noon - no mistakes' I asked her if I had previously done something wrong and she said 'No you haven't done anything wrong but module one's all make mistakes and I'm just telling you not to.' I don't mind a row for something I've done wrong but I resented getting one before the job was even done."

> "On my first ward I was going to give it up if I failed anything I was leaving. I don't know whether my communication skills were bad or my confidence was lacking totally and I was just putting on some sort of face, but I just did not get on with the staff in that particular ward. I never settled the whole time I was there I was quite unhappy. I felt I was being picked on. The staff reckoned they thought I was going to be a good nurse at the start and I let them down, therefore they were constantly pulling me up

> ...trying to make me what it was they saw in me. They went about it the wrong way and I resented it and this made the personality clashes I think."

The learners who experienced such situations belonged to both the high and the low academic group. Some attained above average examination results. None had below average results. The learner who left training was one of the nine who had stated that there had been times

in the past when he/she had not enjoyed his/her training. The reason given was difficulty with some of the theoretical content of the training, and the effect that this difficulty had had on self esteem.

Of the sixteen learners who stated that they would not consider leaving nursing if they could find another job, twelve stressed it was because they enjoyed the work. The following extracts summarise the feelings expressed:

> "It's just what I want to do, it's the career I want to do. Someone might put me out, but I'll never leave, I enjoy it so much."

> "I think I'm suited for nursing. I really enjoy it, I don't think I would enjoy anything else. It's hard, but I enjoy it."

b) Self perception

In relation to the learners perception of his/her training, all the learners who attained average or below average examination results, reported that the clinical practice was easy, and six of them also found the theory easy. All but one of those learners who found theory easy was in the high academic group. Eight learners, all from the low academic group, found theory difficult, though only one had below average examination results.

Of the four learners who had below average examination results, those from the high academic group reported that they found theory easy, and the others reported that they found it difficult. Those learners with above average examination results reported that their experience of training in terms of being easy or difficult had been a mixed one. One of these learners from the high academic group stated:

> "It's been ok. In the wards towards the end of the 13 weeks I get a bit fed up because it's so routine. You get tired of the same atmosphere all the time and that's difficult. At the beginning it's interesting, different new (pause) it's easy."

One of these learners from the low academic group stated:

> "Some parts of theory have been difficult, maybe because I

didn't do any sciences at school. Other stuff is easy. In the wards I find it easy to cope with the ward routine though a patient's care can be difficult (pause) I've got to think faster and work faster."

c) Relationships

Fourteen of the learners reported that they found relationships in the clinical areas easy. Reasons for this varied as can be seen from the following extracts:

"I'm easy going and don't cause a lot of hassle."

"Staff have been great. I get on well with them. I thought I would be made to feel very inferior compared to the rest of the staff, being so junior, but you don't feel like that (pause) they have been very good, very supportive."

"I've learned from my last job just to keep my own counsel so I just tend to go in and get to know everybody but don't get too involved (pause) that's the best way as far as I'm concerned. Sometimes maybe you can sense there is an atmosphere between people (pause) the answer is just not to get involved in it and I think you should treat everybody the same with respect towards Sisters and Staff Nurses."

Three of the learners, all but one of whom came from the low academic group, said that initially they had difficulty with relationships. The remaining three stated that they generally found relationships difficult, particularly in relation to trained nursing staff. All of these learners belonged to the high academic group. Two examples are highlighted below:

"The attitude of staff towards student nurses. They take it for granted that you know nothing and you're just there to do bedbaths and bathing and things like that and you know nothing. If you contribute something to a conversation it's wrong and if you challenge them 'Why are you doing this can we not do it like that?' it just gets people's backs up. There's been quite a few times that has happened. It makes relationships difficult. I'm always in trouble."

"On the wards relationships can be difficult. My skill in knowing how to approach staff is a bit dodgy. My views on authority are a little strange. In jobs I've been in before everybody mucked in. Like the top boss was right in with everybody else and it was like everybody did for everybody you know? Even the boss was called their first name. Here you have Sister so and so and Nurse so and so. Psychiatry wasn't too bad but in general wards they have a hierarchy for some unknown reason. They seem to think that this is the way to do things

and I find that difficult to cope with, distances between people that are imposed upon you, we are all human. In some respects perhaps I am anti authority."

None of the learners who experienced relationship difficulties attained above average examination results.

d) Promotion

When questioned on promotion in nursing once qualified, half of those interviewed said that the fact that they could gain promotion later was important to them. Learners who were interested in promotion were found in equal numbers in both the high and the low academic group. There was no relationship between full use of potential in examinations and an interest in promotion.

The most popular long term goal in relation to promotion was to become a clinical teacher. This was the goal of 5 of those interested in promotion.

No relationship was found between a particular classification of examination results and those learners who admitted a lack of interest in promotion. The most popular long term goal for this group was to be Staff Nurses (5 learners). The learner who subsequently left training had stated that he/she would really like to become a Nursing Assistant because this grade had more patient contact than learner nurses or Staff Nurses.

(iv) Nursing theory.

Of the learners who had above average examination results, four felt that all the modular theory was relevant to modular practice.

Thirteen of the learners stated that not all modular theory was relevant to modular practice. The degree of variety in the perception

of the relevance of theory to practice for these thirteen learners is outlined in Table 25 below.

Table 25: Perception of relevance of theoretical input of modules to modular clinical experiences.

	N = 13		
	Simulated Practice %	Nursing & Allied Lectures %	Physiology Lectures %
Relevant	84.62	46.15	30.77
Mixed	15.38	46.15	30.77
Non-relevant	0.00	7.70	38.46

When questioned about private study most of the learners gave several reasons for studying. Seventeen of the learners stated that they studied to pass examinations. Three of these learners, who all belonged to the high academic group and were functioning below their academic potential, stated that this was their only reason for studying.

The passing of examinations was not always the primary reason for studying. Nine of the learners stated that their main reason for studying was to understand problems encountered on the wards, or increase their knowledge of a particular patient's illness. The following two extracts highlight these patient centred motives:

> "So I know my stuff. Also for the patients as well so that when they need a nurse you don't stand there clueless not understanding what they're on about or what's wrong with them although you've done that block."

> "In the wards you know I might see something and think that's interesting I'll go and look that up when I get home. Like a lady who had oesophageal varices and she had ascites and I was wondering why you do this for her and why she was on fluid restriction and I looked it up and found out. I've done that quite a few times."

Eight learners stated that they studied to acquire a general

understanding. None of their comments were patient centred.

(v) Perceptions of academic ability.

Five of those interviewed had a poor self image in that they, or their family, felt they were slow and only partially successful. Those from the high academic group were using fully their potential in examinations, and those from the low academic group were functioning above their expected level of potential.

Seventeen learners felt that their tutors in the College did not put a lot of store by learners previous academic qualifications. Two learners from the high group felt that they were made to feel different by their peers because of their very high qualifications. Their peers applied pressure on them by expecting them to have consistently high examination marks and to 'know all the answers." One learner from the low academic group stated that his/her peers made him/her feel inferior because he/she had no academic qualifications and had entered nursing via the DC1 Test.

(vi) Entry criteria for nursing.

a) academic

Six of the learners from the high academic group and nine from the low academic group felt that it was not necessary to have Higher grades to become a 1st level nurse, and that Higher grades should not be an entry requirement for training.

Of the seven learners who had above average nursing examination results, five felt that Higher grades were not necessary, and three mentioned the value of having an Ordinary grade in a science subject.

b) Non-academic

Within both groups greater stress was placed on the non-academic criteria which the learners felt were important entry requirements for nurse training. Eighteen of the learners mentioned personal characteristics such as patience, understanding, and a sense of humour, which they felt were necessary qualities for someone who wished to train as a 1st level nurse.

Nine of the learners, representing both groups, felt that leadership qualities were a necessary qualification for nurse training:

"Must be able to cope with pressure and still function effectively and make decisions." said one learner.
Another stressed,

"You have to have initiative and know when to use it and when not to. Sometimes you need to know what to do first and sometimes you have to like guide, you know steer other people to do things right without upsetting them."

Eight also mentioned the need to be fit, healthy and physically strong, and six mentioned that it was important that someone who wished to train as a nurse had certain moral qualities, such as those illustrated in the following extracts:

"Someone who puts other people first and who is reliable. Prepared to put everything they've got into it. Say 'I'm prepared to put more into this job than I can take out.' rather than someone who's thinking what they can get out of the job"

"Reliable (pause) be there no matter what- weather, week-ends, or feeling tired, and able to be trusted to do what you know is right (pause) and with patients' things."

Two thirds of the learners who mentioned these moral qualities were in the low academic group and three quarters of them had above average examination results. Of the third who were in the high academic group all had above average examination results. No learner mentioned feeling that a tidy well presented appearance was an important

quality.

c) Perception of peers' reasons for choosing nursing

Sixteen of the learners felt that the majority of their peers had chosen nursing because it was a career that they had always wanted to pursue. Ten mentioned that some of their peers were training because it was a job. The following extracts typify the reasons offered as to why the learner's peers had chosen to train as nurses:

> "It's a lifetime ambition for most of the class, something that they have always wanted to do, but some of them are in there just to get off the dole."
>
> "Quite a lot of people in the class have done other things and have become fed up with them and have had nursing in their minds and just taken the step and done it. There are also a few school leavers who have always wanted to be nurses. It's a good career generally."
>
> "Many of them just like working with people and have always wanted to nurse. A few are in it for the perks like cheap accommodation and have made it clear that when that goes they go. I think it's terrible that they were let in."
>
> "A couple have come in because they couldn't get a job anywhere else. Some of them have always wanted to be nurses. Some of them because it is just something that they want to try, they've tried a lot of other things and they're trying this."

d) Types of people in nursing

When asked if there were any types of people that they felt should not be recruited to nursing the responses varied, but there was no correlation between the use of potential and a particular response.

The remainder of the findings in this section are included only because they are felt to be of general interest.

Thirteen learners were willing to accept people who presented themselves in an untidy, slipshod fashion into nursing. Seven felt

that as nurses wore a uniform this solved the problem, and two felt that all people were capable of change and that training would ensure "that they smartened themselves up a bit." Four learners felt that there was no relationship between an untidy self presentation and the quality of nursing care given, "untidy people are not bad nurses."

Seven of those interviewed were unwilling to accept people who dressed in an untidy slipshod fashion into nursing. All the learners with this opinion belonged to the low academic group, and they all felt that someone who was untidy would present a poor image of nursing. Four also felt that untidiness reflects untidy attitudes. The following extract is typical of their reactions:

> "If you walk on to a ward like that a patient's going to look at you and go 'Good grief I'm not going to let her near me if I can help it.' If you can't turn up to an interview smart and tidy, and that's to get the job, when they've actually got the job they're going to make even less of an effort. You've got to go on to a ward smart and tidy and look as though you're clean and that, because you can't go on and promote hygiene and things like that to a patient if you're untidy. A lot of people gauge how you are by the way you look."

Eighteen of those interviewed felt that people who were not satisfied with a task unless the minor details were given close attention should be accepted for nurse training. Thirteen believed that it was a positive attribute to bring into nursing as "patients would be sure of really good care." and "They could act as role models for other nurses, especially folks like us."

Five were willing to accept such people, but stressed that they would have to change to a degree otherwise "the ward routine could be slowed up." This was also the reason given by the two learners who stated that they would not accept such a person for nurse training.

Half of those interviewed, represented in both the high and the low academic group, recognised that the more forceful assertive personality could have leadership qualities which could be valuable.

The following two extracts reflect this awareness:

> "People who are assertive are going to get ito trouble sooner or later (pause) but only if their ideas are not good ideas. If their ideas are good that's good (pause) for patients and for us. You often find they become leaders and it's easier to learn from them when they are really positive about what they say."

> "They are able to speak their mind and are not afraid to say that somebody is wrong no matter who they are. That's good for the patients and if they have the right ideas and get promoted that's good for others too."

None of the learners expressed any concern about the person who tried to use these qualities in a negative way. The following explanation outlines why there was no concern:

> "A cheery assertive person is good in the ward and we need people to speak out and if they do go over the top or go too far it doesn't take long for a Sister or Staff Nurse to shut them up and they learn where the line is and how to say the same thing differently, you know more professionally."

(vii) Social background

No link was found between examination performance and parental/partner attitude towards the learners' choice of nursing as a career.

Fifteen learners stated that parental attitudes, whether positive or not, had no effect on their decision to enter nursing. The following reflects the response of most learners.

> "Nothing, no effect at all. I felt as though it was my own decision, it should be up to myself because it was actually me that was taking up on the career."

(viii) Concept of Unemployment.

Thirteen of those interviewed had been unemployed at some time, and 12 had lived with someone who was, or had been unemployed. Eight had both experience of unemployment directly, and had lived with an unemployed person. There was little difference between the two groups in relation to the number who had direct experience of unemployment.

Eighteen of the learners indicated that they would anticipate that if they were unemployed this would affect significant others in their lives. Fourteen felt that there would be some form of interpersonal conflict. This was often expressed in terms of parental/spouse irritation or annoyance.

Eighteen of the learners were aware of a range of non-financial effects of unemployment. The most frequently mentioned effects by both the groups were boredom (10 learners) and loss of self esteem (9 learners). Loss of self esteem was often expressed in terms of failure, "being looked down on", or loss of independence which was valued highly. Other effects frequently mentioned were depression and anxiety.(7 learners)

Two of those interviewed lacked an awareness of the consequences of unemployment and saw it in terms of "more free time" or "I don't spend a lot of money so I'd be ok."

Despite the range of awareness of the possible personal effects that unemployment could have on self or significant others, more than half of the learners appeared not to be influenced by their awareness in relation to using their potential in examinations. Nor was any difference found between the academically high and low groups in relation to their awareness of the range and type of problems generated by unemployment.

CHAPTER 4.

DISCUSSION OF FINDINGS

Generally the findings hold few surprises, and many of the findings are supported by previous research particularly outwith the field of nursing. Even findings which initially appear to contradict earlier work can sometimes be explained in terms of changes in social attitudes and expectations over a period of time.

The discussion will be presented in sections, following whenever possible those used in Chapter 3.

4.1 Academic Qualifications, Achievement Groupings, and Examination Results

Analysis indicates that 74% of the sample had a minimum of 2 'H' and 3 'O' grades, and that 41% of the sample had a minimum of 3 'H' and 2 'O' grades. Such grades would suggest that the potential exists for high academic achievement, yet 32% of all learners were performing less well academically than expected. Similarly a poor correlation was found between academic qualifications and examination results. As this poor relationship between academic qualifications and theoretical performance during nurse training is clearly not due to a lack of academic ability, and as 29% of the learners were performing better than expected, one could argue that many of the non-cognitive factors suggested by regression analysis account for some of the variance in examination results. However a significant percentage of the variance (22%) remains to be explained. As the learning process involves a minimum of two people, the learner and the teacher or facilitator of learning, plus the material to be assimilated, it is not unreasonable to suppose that part of the variance of examination results could be

due to the latter two factors.

The weak relationship between academic qualifications and achievement groups appears to be less easily explained in terms of the non-cognitive factors used in the study than the relationship between academic qualifications and examination results. Again the variance in achievement levels could be due to either the teacher or the material being taught. It is recognised that teaching style and method can affect the learning outcome for a student. (eg Lovell 1980) The perceived relevancy of the material to be learned can also have a positive or negative effect on the learning outcome and consequently on achievement grade. (eg Rogers 1977) However one is still left asking the question 'Why do some learners perform better than expected, while others perform less well than expected?' Clearly both groups of learners are exposed to relatively similar teaching styles and methods, and to similar fairly inflexible management structures within Colleges of Nursing.

Perhaps the answer partly lies in the presence or absence of a personal need to achieve, to be suœssful, generally. (McClelland 1961, Atkinson and Feather 1966) The presence of such a need could then motivate the learner to be a high achiever in his/her chosen career. Alternatively the differences may be partly explained by attribution theory as it has been applied by Weiner, Frieze, Kulka, Reid, Rest and Rosenbaum (1972), and Weiner (1979) to develop a model of causal attributions related to achievement behaviour. Their theory would consider the differences between achievement groupings in terms of internal causes such as mood variations/emotional reactions in response to various learning situations and/or teachers; the degree of effort exerted in relation to learning; and innate ability which it has already been noted in this study accounts for a small proportion

of the achievement groupings. External causes such as task difficulty, luck, and teacher bias would also be considered. Membership of a particular achievement group would be determined by the learner's perception of the relationship between internal and external causes and levels of achievement (locus). It would also be determined by the degree of control which the learner felt he/she had over the learning situation (controllability), and by the likelihood of the causal attributions readily changing (stability). This theory could account for some of the differences between achievement groups, as learners' perceptions of locus, controllability, and stability do vary as can be seen from the interview findings. (and from comments made during feedback sessions.)

Although this study has suggested that the contribution of academic qualifications to either the quality of nursing examination results or the level of theoretical achievement is low, it cannot be stressed enough that the sample is not representative of the general population. All learners in the sample have either a minimum of 5 'O' grades or a pass in the DC1 test. Thus these learners already have above average academic ability in relation to the general population. It is highly probable that if the sample had been representative of the general population the findings in relation to academic ability would have been different. They might have shown a higher correlation similar to the findings of earlier nurse researchers such as Scott-Wright (1968) and Pealing (1982).

4.2 Attrition Rates and Relocation

Although no statistical difference was noted between either the achievement groups or examination results in relation to attrition, an

18% wastage rate cannot immediately be dismissed. It is difficult to evaluate this figure as the National Board publishes its figures annually and the figures given are accumulative. However the figure of 18% is not as serious as it may appear because the attrition rate for the separate Colleges ranged from 0% - 34%. Consequently some of the Colleges were below the national annual figure (1985/86) while others were above it.

The relocation rate for learners was 16% and mainly represented learners who had average or above average academic qualifications. (48% above average, 38% average, 14% below average). 71% of the relocated learners (15) were put back a class due to excess sick time as opposed to theoretical failure (19%) or clinical failure (10%). As all learners have to pass a medical examination prior to commencement of training it would seem unlikely that so many would become unfit to nurse within such a short time. It would appear more likely that this high sickness rate is possibly reflecting high levels of stress particularly in the clinical situation. Certainly the learner interviews would suggest that many learners experience high levels of stress, often related to unrealistic expectations by more senior members of staff, or to poor interpersonal relationships with staff. The authoritarian climate described in some of the clinical areas could, for some learners, create a situation of enforced dependency where the learners feel that they are almost impotent particularly in relation to stressful situations and discovery learning. The fact that all but two of the relocated learners were twenty years old or less would suggest that these learners may still be maturing, and that thay may not yet be able to cope effectively with difficult, stressful situations, or with stress related to requesting information to enhance knowledge. The only option left may seem to be avoidance of

stressful situations for short periods.

Alternatively the high sick rate partly may be because some of the relocated learners are not really interested in nursing and have commenced training mainly to secure employment. Such a theory is possible when one considers that seven of the fifteen learners who were relocated due to excess sick time subsequently left training, three of them within six weeks of training. Of the fifteen learners relocated due to excess sick time, twelve could be categorised and seven of them were found to be low achievers.

Another reason for the high sick rate may be the realisation that nursing no longer offers a secure career. Some nurses are finding that they cannot get employment at the end of their training, so perhaps by being relocated some learners are simply trying to extend their employment time, in the hope that the situation will change with time.

4.3 Age, Sex, and Marital Status

Irrespective of whether the dependent variable used was achievement or examination results, the findings were identical in relation to older learners doing better than younger learners, females doing better than males, and married learners of both sexes doing better than single learners. The term 'married', it will be recalled, includes learners who are co-habiting. The finding that older learners performed better than younger learners is well supported by literature from the field of Adult Education (eg Botwinick 1973, and Knox 1977). There appears to be little or no decline in intellectual abilities with age. The older learner often has greater life experience, even if they are only in their early twenties. Sometimes they may also be more certain of

what they do, or do not wish to do with their life than the younger school leaver.

The finding that females do better than males may be related to the different perceptions of the sexes in relation to success. Females often attribute failure to low ability, and success to high effort or good luck. Men often attribute failure to lack of effort or bad luck, and success to high ability. Females are more inclined to underestimate their ability, whereas males often have an inflated assessment of their performance. (Deaux and Farris 1977) If learner nurses have similar self concepts females will probably work harder than men, who feel that they have high ability anyway and therefore less effort is required.

The finding that married learners of either sex do better than single learners could be explained by married learners probably being older. Alternatively a high percentage of single learners in the study lived in, and that factor had a statistically significant effect on the dependent variables.

The finding that married learners do better than single learners, and by inference older learners better than younger ones, appears to differ from that of Birch (1975) and Jones (1983), who reported a significant relationship between marriage and discontinuation of training. Although the learners in this study still have eighteen months of training to complete, it would seem unlikely that these very successful learners would leave training in high numbers now, especially as most attrition occurs during the first year of training.

4.4 Reasons/Motives for Choosing Nursing

Despite attempts being made in this study to ensure that the

instrument used to measure this variable contained many items which were more specific, and less susceptible to social desirability than those used in previous studies, it is interesting to note that the more specific reasons were selected less frequently, particularly in Section A (patient centred reasons). Even in Section B the more socially desirable reasons such as 'job satisfaction' and 'opportunity to meet people' were the most popular. This finding could be due to the learner being influenced by the media's persistent portrayal of nursing as an exciting job where one is involved in saving life and helping people to get better. Coupled to this portrayal could be the lack of in-depth knowledge by guidance teachers and career officers about the range of experiences and work situations that nursing involves. Thus the potential recruit frequently has a shallow, rather naive notion of what nursing actually involves.

Another reason for this finding could be due to the way in which learners are recruited at present. Once a person responds to an advert for nurse training he/she is usually given information regarding where the training will occur and the form that it will take, ie number and type of modules. Implied in this information is that the learner will become aware of the different areas within nursing (eg. surgical, medical, psychiatric, care of the elderly) which will make up part of their training, the age range of the patients, and the types of illnesses that can precipitate a person's admission to hospital. Often at interview this information is reiterated, and sometimes more specific questions are asked of the candidates in relation to their perceived ability to work with the elderly, to work with people who may be doubly incontinent, or with people who may not get better. However it is unusual for candidates for nurse training to be told the percentage of hospital beds occupied

by the eldery and/ or the chronic sick, and the implications which such facts have on the nurse's job. Similarly it is unusual for the candidate to visit the clinical area, especially to visit a 'general' medical ward, or a ward for the care of elderly mentally or physically ill people. Thus with hindsight, it is hardly surprising that less than 15% of the sample stated that they came into nursing to care for people such as the dying, the elderly, or the chronic sick, whereas 90% selected 'reward of knowing I have helped someone to get better' as one of their reasons. Despite this lack of detailed information during recruitment it was pleasing to note that less than 7% of the sample selected reasons which could be considered to be less desirable. This probably indicates that the present information regarding nurse training is effective enough to enable those who are not suitable to reject nursing as a possible career option.

The reasons for remaining in training and for leaving were very similar to those reported by Singh (1970), Singh and Smith (1975) and Jones (1983). Again this is probably due to the high degree of self selection prior to training commencing.

As the learner responses are so similar in respect of the choices made, it is hardly surprising that no differences were found between the achievement groups in relation to the first reason given for entering nursing. However the finding that high achievers and consistent achievers were significantly different in their second choice of reason from Section A is interesting. Why high achievers are more likely to select a self esteem reason for their second choice than consistent achievers is unclear, but could be linked to either need achievement theory or attribution theory mentioned earlier in Section 4.1.

A more likely reason for the differences between the two groups is

as follows. The interviewing judges used in the study placed greater value on the reasons offered by the consistent achievers, probably because this group of reasons is dominated by very specific, realistic options. However one of the most popular options 'it is rewarding to know I have helped someone to get better', is also in this section and could be described as a self esteem reason, despite the fact that it was not categorised in this way by the judges when the instrument was being developed. If this statement does in fact reflect a self esteem reason, and was the most popular second choice for the consistent achiever group then there effectively is little difference between the two groups in relation to their choice of second reason from Section A.

When reasons for entering nursing were compared with examination results regression analysis suggested that, in relation to the first and third choices selected from Section A, the higher the examination result the lower the reason was ranked by the interviewing judges. When regression analysis was performed excluding the high academically qualified group, all the 'reasons for entering nursing' variables were rejected from the regression equation. These findings, although difficult to interpret, would suggest that a very acceptable reason for entering nursing, from the interviewers point of view, is not particularly likely to be a good predictor of the quality of results in subsequent nursing examinations, particularly if the learner has average or below average academic qualificatons. Those learners with high examination results, particularly from the high academic group, appear to be opting for less altruistic reasons for entering nursing, which could mean that they are more aware initially of what nursing entails and therefore find it easier to assimilate information which is used later in examinations. Alternatively it could be that for

some of the learners with high academic qualifications nursing was not their first career choice. This honesty may be being reflected in their reasons for entering nursing, although it is having no effect on the use of their high academic ability.

Whatever way the findings in this section are interpreted they must always take account of the fact that the instrument used has a few limitations. Apart from the one mentioned earlier in the section, it also lacks a wide range of groups, particularly in Section A. This is mainly because the responses are categorised into two sections. While the sections could be merged, the main danger would be that learners may quickly identify the self centred reasons and reject them as socially unacceptable. Secondly the instrument still contains statements which are not specific enough, eg. 'to meet people', 'to help people who are ill'. However it will be recalled that the statements used in the instrument were generated by learners who had just commenced training, and therefore to omit such frequently used statements would have distorted the range of reasons offered to the learners in this study as 'known reasons for entering nursing'.

4.5 Cattell's 16 PF Questionnaire

It is interesting to observe that some of the learners who subsequently left training or who had their training discontinued displayed extreme scores on many traits that later could have proved counterproductive to a successful nursing career. For example a third of those who left training were emotionally less stable and affected by feelings (C-), over a third were suspicious (L+) and/or tense (Q4+), and just under a third were extremely tender minded and over protected (I+). It would appear that perhaps due to some of these

traits some learners decided that nursing was not really a suitable career for them. Only one of the traits noted in this study is mentioned in earlier research in relation to learners who leave, and that is factor C-, learners who are more affected by feelings (Jones 1983). Burton (1972) also mentioned this factor in relation to unsatisfactory students along with factor L+, the extremely suspicious learner.

The differences between relocated learners and their original peer group is also interesting. About a quarter of these learners are more assertive (E+) and/or more shrewd and calculating (N+) than those learners who are not relocated. A quarter of them are less conventional (M+), and fewer of them are as group dependent (Q2-) as those who are not relocated. They are also much more extroverted (second order factor Qi+), and have a higher Qiii score (second order factor) which means they are more likely to be enterprising and resilient personalities in comparison to those learners who were not relocated. The above factors could credibly describe the type of person who is less concerned about the rules of absenteeism and the need to support other members of the nursing team working in the ward. These factors could also describe the type of person who is willing to accrue one and two day absences from work to the point where they are required to repeat a module.

Burton (1972) noted that the unsatisfactory learners in his study were more shrewd and calculating than the satisfactory learners (N+), and Birch (1975) also noted that this factor was present in those of his learners who left training. Jones (1983) noted that the learners in her study were more self sufficient (Q2+) than those who completed training. These earlier findings are not inconsistent with the present findings in relation to the relocated learners, as almost half

of the relocated learners subsequently left, or had their training discontinued.

From the findings on both the relocated learners and the learners who left/had training discontinued, it would appear that there are notable differences in personality traits compared with those learners who remained in training and who were not relocated. Many of the learners in this study who had less desirable traits did not complete their training.

The differences in findings from the earlier studies could be due to a more accepting attitude towards candidates who are less conservative in their presentation and dress, and to the belief held by some interviewers that nursing needs a wider range of personalities and less traditional values than it has previously selected for training.

When the total sample was examined in relation to achievement groups a negative correlation was found between factor B and achievement ($P = 0.04$). This suggested that learners who were less intelligent or who were concrete thinkers were more likely to be high achievers than learners who were more intelligent or who were abstract thinkers. It is likely that this finding has less to do with IQ per se, and more to do with the concept of convergent/divergent thinking. As nursing is a very practical job it is possible that it attracts more convergent thinkers than divergent thinkers, and that during written examinations the convergent thinker has an advantage in that they will instinctively think of patients they have nursed, or a situation they have encountered, and use these experiences as a basis for a detailed narrative answer. Possibly the divergent thinker is more likely to consider concepts, theories, or principles in relation to the written question, and may therefore omit the type of detail

which the examiner requires for a complete answer to questions which are practice based.

No other differences were found between achievement groups. This is not surprising when one considers that nurse learners do not reflect the general population in relation to the total range of personality traits. It would also suggest that although personality must have some effect on the need, or otherwise, to excel, this instrument is not 'tuned' finely enough to identify such delicate differences between achievement groups.

The finding that the second order factor Qi (introversion/extroversion) cannot discriminate between achievement groups or examination results supports earlier nursing findings by Long and Gordon-Crosby (1981) and Dellar (1981), and is most likely due to the sample being to a degree self selecting.

The above point regarding nurses being a highly selected group in relation to personality traits would also explain why only one factor, Q1, was retained in the regression equation when examining the variables in relation to examination results. Although analysis suggested that the more free thinking a learner was (Q1+), as opposed to respecting established ideas (Q1-) the higher the examination result, this factor only contributed 1% of the total variance and therefore is not particularly meaningful in terms of important factors for consideration in relation to future recruitment.

Regression analysis of the sub-samples of learners is more interesting, as it may be that learners with above average academic qualifications and learners with average and below average academic qualifications are different in terms of personality traits that correlate with high examination results. Learners with above average academic qualifications who achieve high examination results appear to

be emotionally less stable (C-), and more tender minded (I+), than less well academically qualified learners. This finding of high results correlating with emotional instability was also reported by Furneaux (1962), Kelvin et al (1965) and Entwistle and Wilson (1977). Learners with average or below average academic qualifications who achieve high examination results appear to be more reserved, detached, critical (A-), and more group dependent (Q2-), than those with above average qualifications. This last finding is the opposite to that of Michael et al (1971) who reported that the more self sufficient a student was the better the performance. However these were American learners and therefore cultural differences, and a different educational system, could account for the different finding.

As stated in the previous chapter these differences should be approached cautiously as they may simply be due to instability of the regression equation within the sub-samples. However if the differences are real, then it could be that those who have only average or below average academic qualifications and who attain high examination results compensate by drawing on knowledge acquired from other members of the ward team, or by being willing when they have failed to understand something to be dependent on peers for clarification. Perhaps too, their more reserved nature ensures that they are less likely to be distracted by a very active social life.

4.6 Family, Scholastic and Employment Background

One of the most striking things about this section of the study is the difference between this study and earlier studies in relation to social background as categorised by the occupation of the breadwinner (usually the father). In previous studies, particularly the earlier

ones, most learners came from a middle class background and less than 10% came from a background where the breadwinner was unskilled. In this study there is a wider distribution throughout the classes, with the higher proportion of learners coming from a background where the breadwinner is a skilled manual worker (38%). There is also a notable difference in the number of learners who come from a family where the breadwinner is employed in unskilled work, or is unemployed (26%). This change could be due to a changed perception of the type of person suitable for nursing. Traditionally it had been seen as a suitable occupation or even vocation for young ladies from middle class backgrounds, whereas girls from working class backgrounds were directed towards factory or shop work, and boys towards an apprenticeship. Due to a blurring of the social class image and to the decline of heavy industry, young people, particularly young men, from a wider range of social class background may be considering nursing as a possible employment where previously it would not have been contemplated. Such a change can only benefit nursing, as patients represent all strata of society and are now more likely to be nursed by people from less restrictive backgrounds than previously, nursed by people who can more readily relate to them and their problems.

In the earlier studies by Scott-Wright (1968), Singh (1970), and Singh and Smith (1975), there appeared to be a correlation between parental attitude towards the learners' choice of career and subsequent performance during nurse training. These findings are not supported in this study. Although the range of parental attitudes towards the learners' choice of career has not really changed since Singh's study (1970), 48% of learners felt that the attitude of their parents to their career choice was not applicable, and when this point

was explored during interviews it became clear that learners felt that it was not part of the parental role to try to influence career choice. Such a decision was "..up to me, I'm the one who's doing the job, not them."

A little surprisingly the size and ages of the family one is living with, and the degree of privacy afforded, appears to have no effect on either achievement grouping or examination results. Similarly neither of these factors appear to be affected by noise level when studying. Most learners have a room where they can be alone to study, but even if they have to study in the presence of others this does not appear to affect their performance. Perhaps these factors are having no effect because the learner is used to them and has learned to adapt accordingly. This might partly explain why some learners who live in the nurses' home are less likely to produce high examination results. Some of these learners are from the high academically qualified group, and often people who have done well at school come from small families where studying is seen as important and therefore encouraged. There must be quite a change when they are exposed to the noise and distractions that are part of the ethos of any nurses' home. Those learners who have been brought up in larger families, or in families where studying was not particularly encouraged are more likely to have learned how to succeed despite the environment and atmosphere.

Although the number of secondary schools attended appeared to have no effect on achievement groupings, it did account for 3% of the variance of nursing examination results. This finding may suggest that irrespective of circumstances a learner with a need to achieve will overcome such difficulties while at school, and that later he/she will continue to overcome any residual damage caused by school changes

because of an internal driving force. However the effect that changes in secondary school education may have generally, when not all learners have an internal need to achieve, could be being reflected in the nursing examination results.

The high percentage of learners who have either experienced unemployment (66%) or have lived with someone who has (45%), reflects both the change in employment patterns in recent years and the change in the social backgrounds of the learners. Almost a third of learners admitted that security of employment had strongly influenced their decision to become a nurse, and over half the learners admitted that security of a career had strongly influenced them, despite the fact that nurse training no longer automatically guarantees employment once trained, and that in some areas of nursing security of career either no longer exists, or is tenuous.

As no statistical significance was found between either of these two variables (employment and career needs) and either achievement groupings or the quality of examination results, it could be concluded that although employment and career needs had an influence on work choice, that influence failed to be a powerful motivator once a training place was attained. Alternatively, perhaps these factors could have been powerful enough to motivate until the learners began to realise the reality of future employment prospects.

Despite many of the learners having personally experienced some of the problems of unemployment, and all having an awareness of related factors such as financial difficulty and social or psychological problems, their experience or awareness appeared to have no effect on their achievement groupings or examination results. Perhaps those who had experienced unemployment saw it as inevitable that one would be unemployed for a short period after leaving school, and felt that

their turn was over, while those who had not experienced unemployment felt it could not happen to them, therefore it was irrelevant in terms of performance during nurse training. Interestingly those learners who were consistent achievers were more likely to have lived with someone who was unemployed than learners who were low achievers. Perhaps the learners who performed consistently were aware of the emotional reality of the effect that long term unemployment can have on a family unit, and consequently this emotional reality, as opposed to a more cognitive awareness, motivated them to consistently utilise their potential.

4.7 Studying

The range of factors explored in relation to studying was reasonably diverse, and yet few factors were able to discriminate between achievement groupings or correlate with examination results. Despite almost half the learners stating that they could not study if there was background noise, there was no statistical relationship between noise and either of the dependent variables. Similarly the provision of a room for studying, the presence or absence of a study plan, or the frequency of studying had no significant effect on either achievement groupings or examination results. The way in which learners allocated time and selected topics during a study session, and the actual method(s) used to study had no apparent effect on the dependent variables. This last finding of a lack of relationship between method of study and results is also reported by Dellar (1981). The learners' response times to completion of course work, and their like or dislike of studying had no effect either.

Potential for being dissuaded from studying did appear to be

significant in relation to achievement groups, in that those learners who rarely allowed friends to dissuade them from studying were more likely to be high achievers. How much this was due to study motivation or a personality trait such as conscientiousness is difficult to determine. It could also be due to fear of failure or a loss of self esteem.

The ability to understand self-taken notes appears to correlate with examination results in that the easier it was to understand the notes the better the quality of examination results. Similar findings were reported by Baker and Lombardi (1985), and Einstein, Morris and Smith (1985). Interestingly this variable was dropped from the regression equation when learners with average or below average academic qualifications only were used for analysis. Thus it would appear that this is a more important factor for the group that have above average academic qualifications. Although it is easy to understand the relationship between clear notes and the quality of examination results, the finding related to the sub-sample is more difficult to understand. Perhaps those with average or below average academic qualifications take less detailed notes, either clear or unclear, but primarily use prepared handouts and/or text books to study. This is possible, as 18% of all learners admitted that they often could not understand their notes, and presumably resorted to other information sources. The observation that 18% of learners had difficulty following their notes suggests that either there is a case for a session on notetaking early in training , and/or nurse teachers are failing to give adequate signposting during lectures, and adequate support material during or following the use of alternative teaching methods.

More than a third of the learners stated that they studied to get

the best possible mark, while almost half stated that they studied to get an above average mark. While there was no relationship between the quality of mark the learner was trying to achieve and the achievement group, there was a relationship between this factor and the quality of the examination result. It is possible that the quality of mark that the learner was aiming for is a reflection of the degree of motivation to study. If this factor is measuring motivation then the finding is similar to that of Entwistle and Entwistle (1970), Cowell and Entwistle (1971), and Entwistle and Wilson (1977) who all reported a significant correlation between motivational score and class of degree awarded.

Certainly the quality of mark aimed for is an important factor as it accounts for 6% of the total variance of examination results. However it is important to note that when the sub-sample of learners with average or below average academic qualifications was analysed this variable was rejected from the equation, and when the opposite sub-sample was analysed (above average academic qualifications) the percentage of variance increased to 19%. As stated earlier this could be the result of an unstable regression. On the other hand it could be that learners with average or below average academic qualifications are motivated primarily by other factors, such as desire to give good quality patient care, which is reflected in examination results, whereas, having previously having done extremely well in examinations at school, the high academically qualified learners could be partly motivated by the reward of a good quality examination result.

Whatever factors lie behind the quality of examination results and /or achievement groups it would appear that motivation to do well is a more important variable than the acquisition either of 'good' study habits, attitudes, or methods.

4.8 The Kuder Preference Record

It is unwise to draw definite conclusions about the relationship between the mean scores attained across studies due to the ipsative nature of the scores. However such a comparison may possibly be of value to highlight general trends across time.

When comparing the mean scores in this study with earlier works two factors become immediately apparent. Firstly the mean score for social service interest in this study is lower (68) than that reported by Birch or Kuder. Birch found that the mean score for those who completed training was 90 and for those who left training 70, and Kuder reported a mean score of 83 for nurses. (N = 1881) This lowering of the mean score may be reflecting that those who are now being attracted to nursing are less vocationally orientated than previously. On the other hand it could be due to the learners having a wider range of interests which could be causing the very high social service score to automatically lower. The second notable change is that on the persuasive theme the mean score is much higher than reported in earlier studies. The score in the present study is 49 compared with 30 in Birch's study and 32 reported by Kuder. There is a possibility that if the learners in the present study are more persuasive, some may have been able to convince someone at interview that they had a greater interest in people and nursing than they actaully had. Alternatively this higher persuasive ability may be a product of the education system and/or society, where more stress is now being placed on the importance of selling oneself, and persuading people that one has something of value to offer.

On examining the range of scores within the present study it

becomes clear that there is little to choose between the mean score for the social service interest (68) and the mean score for the scientific interest (67). These comparable mean scores could be due to the importance that many Colleges place on the need for science subjects as a desirable pre-requisite for nursing. it could also be that because of high unemployment and contracting university places some learners, who would have liked to follow a more scientifically orientated career, have chosen nursing as a second option. It is disappointing to note that only just over half of the sample had a social service score at or above the 68th percentile. This means that just under half of the learners had no greater interest in peoples' welfare than the general population, yet one often needs a very high level of caring and/or motivation to carry out effectively some of the tasks required of nurses.

As almost a quarter of the learners who had a high outdoor score also had a social service score of less than 46, it may be worth being extra carful when considering a candidate for nursing who is very keen on exclusively outdoor pursuits.

No statistical differences were noted between any of the vocational themes and achievement groupings. Such a finding may suggest that, like the findings from the 16 PF Questionnaire, a high degree of self selecting has already occured.

The only variable that appeared to contribute to the variance of examination results was the clerical theme. The better the quality of examination result the lower the score on the clerical theme. This finding is worth consideration as many of those who do well academically during training are often perceived as suitable material for senior posts at a later date, and all senior posts entail varying, but sometimes considerable, clerical work.

In relation to the relocated learners they had lower scores than non-relocated learners in all themes, with the exception of the literary theme. This may indicate that generally they have a lower level of interest and/or motivation than those learners who have not been relocated. However what gives rise for greater concern is that only 18% of relocated learners have a social service score at or above the 68th percentile, compared with 60% of non-relocated learners. Due to the high number of relocated learners who do not have a low literary score (9% compared with 34% of non-relocated learners) it is possible that despite their low score on the social service theme they are perfectly capable of producing acceptable examination results.

4.9 Learner Interviews

As the number of learners interviewed was low and represented only 15% of the total sample the findings from the interviews must be approached with caution, and no generalisations can be made. Nevertheless some of the findings are interesting and worthy of consideration.

The interviews were designed to probe in greater depth all the non-cognitive factors outlined in the specific objectives, (see Section 2.1) with the exception of personality characteristics and vocational preferences. They were also intended to give a brief insight into the learners' perceptions of their training, and their attitudes towards the different types of personality found within nursing.

The analysis of the interviews suggested that the 1st specific objective had a positive outcome in as much as learners from the very low academic group and learners from the very high academic group

appeared to be different in relation to the effect that their motives for choosing nursing had on examination performance.

Learners from the very low academic group who had an altruistic motive were likely to do well in examinations, whereas learners with similar motives from the very high academic group did not perform to their expected level in nursing examinations. This finding could be due to the altruistic reason acting as a powerful additional motivator in learners who were already well aware that their formal academic qualifications were much lower than those of their peer group. Thus they may have felt that they needed to work hard to maintain parity with their peers to ensure that they would be able to achieve their altruistic objective. The effect of the altruistic reason on the learners from the very high academic group may have been insignificant, as they were possibly well aware that their formal academic qualifications were significantly superior to those of their peer group. Thus they may already have assumed that they could achieve their altruistic objective without any additional effort.

Alternatively, although less likely, the learners from the very low academic group may have been more sincere about their motives than those from the very high academic group, and consequently the quality of their motives may have been reflected in the examination outcome. Interestingly seven of the ten learners who expressed an altruistic reason belonged to the very low academic group. Why this should be is unclear, but it could be that those in the very low group had given greater thought to why they wanted to nurse, or, because they had done less well academically at school (for whatever reason) they may have been more sensitive to others who were less fortunate, such as the sick. Alternatively those in the very high academic group may have assumed that an altruistic reason was 'taken as read' by the

interviewer and therefore these learners may have offered other additional reasons for coming into nursing. Whatever the explanation it may be a matter for concern when some learners from the very high academic group admit that they were motivated to choose nursing in order to avoid less attractive employment/ education options.

The 2nd specific objective had a negative outcome in that no non-cognitive differences between consistent and non-consistent achievers could be identified as predictors of examination performance. The most likely reason for this finding is the small sample size.

The 3rd and 4th specific objectives of the study also had a negative outcome in that neither group of learners had non-cognitive factors in common which acted as predictors of examination performance. This finding is probably due to the small sample number, as one could have expected low examination achievers to have had similar attitudes to study, and high achievers to have had similar attitudes to study, in view of the findings reported by various researchers in general education such as Entwistle and Wilson (1970) (1975). The finding does seem to support that of Dellar (1981), although his sample was also extremely small (n = 24). One finding which was heartening, although it did not correlate with examination performance, was that the passing of examinations was not always the primary reason for studying. Nine of the learners representing both academic groups stated that their main reason for studying was patient centred. From this finding one might infer that to select candidates for nursing mainly on the basis of their academic qualifications, or to evaluate the quality of learner nurses by primarily using a written format is too simplistic, because of the effects of such subtle factors as reasons for studying on the quality of delivery of care in

the clinical area.

Although none of the other findings from the interviews are related to the specific objectives of the study, the two areas of the interview designed to give a brief insight into the learners perceptions of their training, in terms of the various factors explored in the interviews, and the learners' attitudes towards different types of personality recruited to nursing, yielded interesting data related to the general research question.

The interviews revealed that the very low academic group described patient centred experiences as factors which generated job satisfaction, whereas learners from the very high academic group who did not attain above average examination results described non-patient centred experiences when discussing job satisfaction. There appeared to be a link between those learners from both groups who described patient centred reasons as facilitators of job satisfaction and the attainment of above average examination results.

These findings suggest that a genuine interest in the patients may be a powerful motivator. It may be stimulating learners from the very high academic group to use their potential fully to acquire a sound nursing knowledge which is reflected in their examination results. Similarly it may be stimulating learners from the very low academic group to assimilate knowledge and strive for examination results well above their expected potential.

The fact that learners from the very high academic group who performed below their expected potential in examinations expressed non patient centred experiences as creators of job satisfaction serves to strengthen the above argument, although to suggest that non patient centred experiences which generate job satisfaction could be predictors of a particular grade of examination result is not possible

because of the sample size. The above interpretation is supported by research from Adult Education which suggests that a student's motivation to assimilate new learning material and produce a successful learning outcome is related to the learner's perception of the relevance of the material to be learned. (Houle 1961, Rogers 1975, Lovell 1980) Thus if the learner is genuinely interested in patients and their care, new nursing knowledge will be seen as relevant. An additional or alternative reason for some learners from both groups attaining above average examination results could be the presence of need achievement in these learners, as it was noted in analysis that all but one learner had an unexplained desire to do well or to prove something in relation to their training.

Another interesting finding related to the one on relevance outlined in the previous paragraph was the learners' perception of nursing theory. Seven learners, mainly from the very low academic group, felt that all their theory was relevant. Of the thirteen learners who stated that not all modular theory was relevant 85% felt that all simulated practice was relevant, 47% felt that all nursing and allied lectures were relevant, and 31% felt that all physiology lectures were relevant. It would appear that as the sessions become less practical, or practice based, the focus of relevance may be lost to the learner. For example 39% of learners failed to see any relevance between physiology lectures and their training. This failure to identify the relevance of theoretical teaching sessions does not appear to be related to a particular academic group, therefore it would seem reasonable to conclude that it is related to the learners' perceived relevance and/or motivation to learn.

Almost 50% of the learners interviewed reported experiencing periods during the first eight months of training when they had not

enjoyed the training. These learners represented both academic groups. None of them had below average examination results. Because of the sample size little can be generalised from this finding, however it may be a matter for some concern that none of these learners, all of whom had a reasonable knowledge base, expressed problems with the delivery of patient care. Their unhappiness emanated from interpersonal problems with senior staff. While one could argue that problems are often generated by both parties, the extracts outlined in Section 3.10 subsection Biii, would suggest that the expectations of trained staff were unreasonable, and could have been the catalyst for poor staff relationships. It is to the learners' credit that despite these experiences most of them had no desire to leave training, because the delivery of patient care compensated for the negative relationship experiences. This finding of poor interpersonal relationships between trained staff and learner nurses was also referred to by Birch (1975) in relation to reasons for attrition. It was also interesting to note that none of these learners considered their experiences to be relationship problems, simply incidents which made them feel unhappy at times. This would suggest that these learners were identifying individuals who made them unhappy, as opposed to a specific group of people.

The above assumption is reinforced by statements made by six of the learners who admitted to actual relationship difficulties during training, particularly in relation to trained staff. When recounting their problems these learners referred to staff collectively, for example by talking about " the attitude of staff towards student nurses". Three of the learners stated that they had learned how to overcome the relationship problems that they had experienced initially during training. The other three learners were still experiencing

relationship problems at the time of interview. All three of those still experiencing problems came from the very high academic group, as did one of the learners who initially had relationship problems.

Again one has to be cautious when working with such small numbers, but perhaps these relationship problems were due in part to different levels of expectation between the trained staff and the learners. These learners were academically very bright, yet from their comments they were often thwarted from applying what they had learned, and negatively reinforced if they tried to contribute to discussions on nursing care. Some also had difficulty coping with the hierarchical structure, apparently being more appreciative of sapiential authority.

Alternatively, they could have been having relationship difficulties due to an attitude which appeared to reflect a lack of interest in their work. Certainly none of the three learners produced examination results which reflected their very high academic ability. Therefore it could be inferred that they were showing little application in acquiring a high degree of nursing knowledge, and that this apparent lack of application was interpreted as a lack of interest in nursing, which could explain negative attitudes being demonstrated by the trained staff.

A totally different reason for the finding could be that those who interviewed these learners were impressed by their academic qualifications, and any hint of potential interpersonal problems were felt to be due either to the interview situation, or were felt to be capable of correction once nurse training commenced.

When evaluating the level of difficulty of both the theoretical and clinical component of their training those learners who had above average examination results, irrespective of which academic group they

belonged to, reported that their experience of training in terms of being easy or difficult had been a mixed one. In contrast all learners who attained average or below average examination results reported that the clinical practice was easy. Many of them had also found the theory easy. This finding might suggest that those learners who had above average examination results had been more diligent in their studies and this had equipped them with a broader, deeper knowledge base with which to evaluate their own theoretical and clinical performance.

Alternatively learners who attained average or below average examination results may have been accepting a lower self standard than the learners who attained above average examination results. Consequently, by lowering one's self standard the level of one's own clinical expertise would also be lowered, resulting in a perception that clinical practice was easy. However it is helpful to note that self evaluation is not always accurate in predicting outcome, as was demonstrated when learners from the very low academic group reported finding theory difficult, although three of them had above average examination results, and four had average examination results.

One area examined during the interviews which appeared to have no effect on examination results was unemployment, despite the fact that thirteen of the learners had direct experience of unemployment, twelve had vicarious experience of unemployment, and eight of them had experienced unemployment both personally and vicariously. This lack of relationship between unemployment experience and examination results was not due to a lack of awareness of the range of effects of unemployment, as the learners' understanding of the problems was considerable in both groups. Within the very high academic group the finding could be explained in terms of the learners' certainty that as

they were very highly qualified they would always be accepted for some form of training or employment. Alternatively it could be explained by a confidence that with their proven ability it was unlikely that they would not pass their nursing examinations. Also, within both groups the learners may have felt that the problem in relation to employment was in acquiring regular work rather than in retaining it once employed.

Another factor which appeared to have no effect on examination results was initial career choice. Of the seven learners interviewed who attained above average examination results only one had planned nursing as a career before deciding which subjects to take for 'O' Grade study at school. Not all learners who stated that they had always wanted to nurse, or could now think of no other work that they would prefer to do, attained marks in keeping with their academic potential. This finding may be linked to need achievement theory which suggests that those who are high in need achievement will do well irrespective of the particular task or job, whereas those who are low in need achievement require external stimuli or reinforcers to do well. In the case of those learners who have always wanted to nurse or who now cannot contemplate any other career, perhaps the external stimuli are patients rather than nursing examinations, which would explain why their professed interest in nursing is not necessarily reflected in their examination performance.

When discussing entry criteria for 1st level training and the types of people who should be considered for training, the learners put greater stress on non-academic qualities, particularly personal characteristics such as patience and understanding. It was interesting to note that all the learners who were unwilling to accept untidy, slipshod people into nursing belonged to the very low academic

group. Similarly four of the six learners who mentioned the value of certain moral qualities related to putting work before self also belonged to the low academic group. Why learners from the very high academic group should generally fail to mention such characteristics is unclear, but it would appear that in these areas they have different value systems from those learners in the very low academic group. This difference could be a product of their higher education, their social backgrounds, or the effect which mass media has had on minds encouraged to be more receptive to less traditional values.

Alternatively the values being expressed by those who were predominantly in the very low academic group could be said to belong to their parent's generation rather than their own, and due to a lack of exposure to higher education, which encourages divergent thinking, these learners may have retained the parental influence. However this last explanation does not account for the learners from the very low academic group who mentioned the desire to exclude people with racial or religious prejudice from nurse training. One might have expected the learners from the very high academic group to have expressed such an opinion, considering that prejudice is a subject more openly discussed in Higher Education circles than in a more restricted family setting.

Less than half the learners interviewed mentioned physical, moral, or leadership qualities when discussing criteria for training as a nurse. This would suggest that during the early days of training many learners can only relate to qualities that have a direct bearing on patient care, and are not able to see that these other qualities can also have a profound effect on patient care, albeit in an indirect manner. An awareness of these less commonly mentioned qualities was found in both academic groups.

Despite the above discussion on the interviews, which has mainly highlighted differences between the two groups, perhaps the finding most worthy of special note was the homogeneous nature of the twenty learners, particularly in relation to their examination performance. It would appear that one could not safely infer, even given the small sample number interviewed, that candidates with very high academic qualifications are more likely to out-perform candidates with very low academic qualifications in nursing examinations. Similarly one could not suggest, except in the few instances already outlined, that certain desirable values, attitudes, or ideas are to be found exclusively in either group.

Such findings should alert the profession to the possible dangers of advocating the case for a particular academic group being acceptable for training on the main basis of the possession of several Higher grades and a short personal interview in the case of the very high academically qualified group, or on the main basis of assumed specific non-academic qualities and a short personal interview in the case of the very low academically qualified group. Similarly to reject a candidate whose academic qualifications are acceptable to the UKCC mainly on the basis of the absence of a wide range of academic school qualifications primarily at Higher grade may mean that the profession is rejecting some of the very people who hold attitudes and values most coveted by the profession.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study have to be considered in the light of the event that the initial objectives could find no supporting evidence. The initial view was that the problem of predicting performance on nursing examinations was really a problem of explaining achievement, that is, explaining performance which was notably different from past performance in academic examinations. Thus the crucial learners to consider would be high and low achievers, ie learners who performed better than expected given their academic qualifications and learners who performed worse given their academic qualifications. This approach was of course taken on the assumption that prior academic performance would be a strong predictor of 1st level nursing examination results.

However in the context of this study prior academic results bore little relationship to nursing examination results. Consequently the logic for examining high and low achievement groups was somewhat weakened, therefore it was decided to follow the examination of the achievement groups with a straight forward regression analysis of factors predicting 1st level nursing examination performance.

As a result of this decision the role of non-cognitive factors was considered in two ways. First as discriminators of high and low achievement, and second as predictors of examination performance during Stage 1 of training. In theory it would not have been expected that the two analysis would generate very different results, and in practice this was found to be the case although there was a sub-set of variables which proved to be significant in the latter, but not in the

former case. The findings can now be considered in more detail.

5.1 Main Findings

There were four objectives. The first objective of the study was to determine whether any differences existed between low achievers and high achievers in relation to specified non-cognitive factors during Stage 1 of training. The second objective was to determine whether any differences existed between consistent achievers and either high or low achievers. (ie inconsistent achievers)

In relation to the first objective none of the 93 variables representing the six specified non-cognitive areas were able to detect any differences in relation to the quantitative data. However the qualitative data suggested that there could be a link between altruistic reasons for coming into nursing and high achievement in relation to the very low academically qualified learners.

In relation to the second objective, consistent achievers were more likely to have lived with an unemployed person than low achievers, but there appeared to be no difference between consistent achievers and high achievers in relation to this factor. High achievers appeared more likely to offer a self esteem reason as their second reason for coming into nursing compared with consistent achievers who offered a more self centred reason. However there was no difference between consistent achievers and low achievers in relation to this factor. The latter finding must be considered in the light of the previously discussed limitations regarding the instrument used to collect this data.

As so few differences have been found between the various achievement groups it must be concluded that any factors contributing

to the observed phenomenon of low and high achievers probably lie outwith this study. What it has been able to demonstrate is that the differences in levels of achievement do not appear to be due to cognitive ability as measured by the number of 'H' or 'O' grades attained, provided that the learners have a minimum of 5 'O' grades at band C or above.

The third objective of the study was to determine whether high achievers were similar in relation to the specified non-cognitive factors, and the fourth objective of the study was to determine if low achievers shared similar non-cognitive factors.

In relation to the third objective the high achievers had similarities such as being older and/or married, and/or female, and/or convergent thinkers. They were also similar in that they rarely permitted friends to disrupt their study times.

In relation to the fourth objective no similarities were found for low achievers which were not also found as frequently in other types of achiever.

Such findings would suggest that the sample is more homogeneous than heterogeneous in nature, particularly in relation to personality, occupational preferences and unemployment experiences. Thus with the few exceptions outlined above, it was not possible to identify a specific achievement group by characteristics peculiar to them alone.

Some of the characteristics of high achievers, such as age, sex and marital status, have been well documented in adult education literature and are probably fairly sound findings which can be acted upon. The finding on convergent thinking requires to be treated more cautiously until further research on other nurse learners has been carried out.

Although it was not intended to examine examination results in

relation to the various independent variables, this became necessary when it was discovered that the assumption that there was a strong correlation between academic qualifications and nursing examination results was inaccurate. Thus it could no longer be assumed that whatever non-cognitive factors predicted achievement should also predict results.

It would appear that it is possible to state more about the nature of learners in relation to their examination results than in relation to their achievement groupings. Like the high achievers, females and older learners produced better examination results than males and younger learners. Learners who did well in examinations expressed a wish to achieve either an above average mark or the best possible mark in examinations, but appeared to have less acceptable reasons for wishing to enter nursing than those who did less well. They also had a low interest in clerical type work, and were less likely to respect established ideas within nursing.

Such a profile contains both positive and negative elements, but one is drawn to the finding related to reasons for entering nursing. It is doubtful if this finding is cancelled out by the more positive elements of the profile, since the interviews revealed a similar finding. Any profession needs academically able people who would be willing to challenge established ideas when appropriate. However if the reasons given by such people for entering nursing are more self centred than patient centred, or less altruistic than those slightly less well qualified, one must carefully assess the need for learner nurses who have more than 11 points based on their academic qualifications.

Although it has proved much easier to provide a profile of those learners who have 11 points or above on the academic scale in relation

to examination results than to provide a profile of learners who have less than 11 points, one must be cautious if using these findings as an aid to recruitment. As there is a weak correlation between academic qualifications and results, and as less than 50% of the sample performed in examinations as one might expect, one cannot ignore learners with less than 11 points simply because fewer factors 'explain' less of the variance in their sub-sample than the high academic sub-sample. As has been demonstrated both by quantitative and qualitative analysis some of these low academically qualified learners are high achievers and attain much higher examination results than was ever expected of them. One might argue that much of the explanation of the variance of examination results, particularly in relation to learners with less than 11 points, lies outwith the realms of this study.

The study also examined the high relocation rate for learners (16%): the low academically qualified learners were less likely to be relocated than those with average or above average academic qualifications. However when relocation was examined in relation to achievement groups, there was only a 6% loss from the high achievement group compared with a 21% loss from the low achievement group, suggesting a link between poor motivation and relocation rather than low academic qualifications and relocation. Although most learners who were interviewed were aware of stress, particularly on the wards, it would seem that perhaps many of those learners who were relocated were less able to deal with this stress other than by the use of avoidance, hence the high absenteeism and consequent relocation.

Examination of the personality profile of the relocated learners would also suggest that many of these learners (although not all) have a personality which can be identified as different from those learners

who were not relocated. Similarly the results from the Kuder Occupational Preference Record would lead one to conclude that many of the relocated learners had a much lower interest in people and their welfare than those learners who were not relocated.

Although the learner who attains high examination results does not automatically perform adequately in the clinical setting, the acquisition of a high examination mark should ensure that a satisfactory knowledge base exists for transfer into practice if motivated to do so. Conversely learners who have low examination results are less likely to be effective in the clinical setting due to the lack of a sound knowledge base on which to build their clinical skills. The same can be concluded about achievement groupings, although the high achiever is possibly more likely to succeed in the clinical area too, due to a desire to achieve in any situation.

Thus the findings from this study can not infer success in the practical situation. One can only speculate on the possible outcome based on the relationship between the various non-cognitive factors tested, and either achievement groupings or examination results.

5.2 Suggestions for Further Research

Few differences were detected between the three achievement groups, despite the fact that most of the non-cognitive factors suggested by the literature review were included in the study, plus other factors considered as potential discriminators. This finding suggests that perhaps variables which are not directly related to the learners ought to be explored in a subsequent study which would use the same dependent variables, (achievement groups and examination results) along with the same definitions for them and for academic

qualifications. Such a study is suggested because achievement groupings are possibly determined not only by the learner's ability and motivation, but by the learning environment, the quality and style of the teacher and the methods used to teach or facilitate learning. All these areas contain variables which could affect which group a learner belongs to, and consequently contribute to a learner making full use, or otherwise, of his/her potential.

In order to explore further the finding of a weak correlation between academic qualifications and nursing examination results an experimental study could be designed. The control group would consist of learners recruited using criteria similar to those used in this study. The experimental group would consist of recruits who had at least 5 'O' grades at band C or above, or a pass in the DC test, but who had no 'H' grades. They would be selected only on the basis of age, marital status, employment experience, reason for entering nursing and possibly sex. Alternatively, as analysis of interviews tentatively suggested that motivation may be a contributory factor to the level of achievement in this study, it may be worthwhile to consider conducting a study to explore the effect of intrinsic motivation on levels of achievement, while controlling for academic qualifications.

The present study has suggested that relocated and non-relocated learners may be different in relation to certain of the characteristics explored in this study. As relocated learners often do not complete training, or take longer than expected to complete it, they are not cost effective. They also can cause considerable disruption to the planning of clinical allocation and consequently to staff/patient and learner/trained staff ratios. For these reasons it may be worthwhile conducting a study to explore the possibility of

using the findings in this study to predict those learners likely to be relocated during training, or to build on the findings in this study to construct a more detailed profile of the relocated learner.

5.3 Implications of Findings

The present entry requirements of 5'O' grades at band C or above, (or a pass in the DC test) ensure that prospective 1st level learners have the necessary academic ability to enable them to attain passes in modular examinations during Stage 1 of training and in the Stage 1 examination. One difficulty in the present thinking behind recruitment and selection is the assumption that Higher and Ordinary passes measure academic ability. If this assumption was correct then a stronger correlation would have been found between academic qualifications and nursing examination results, and a much lower percentage of learners would have been classified as high achievers. Similarly if the level and number of grades was effective in predicting examination results during Stage 1 of training then one would expect at least 65% of learners to be categorised as consistent achievers instead of the 39% who actually were placed in this category. The findings simply support the assertion that 'H' and 'O' grades are measuring academic achievement rather than academic ability. One might argue that most young people get the opportunity to sit a range of 'O' grades and/or Highers, and that failure to achieve a range of passes does reflect poor ability. However such an argument fails to take into account the effect of maturation on the perceived relevancy of learning. Nor does it take into account the effect that a school teacher's or a parent's attitude can have on self esteem, and consequently on self evaluation of one's own learning

abilities. Literature, particularly from adult education, supports the idea that many people who have academic ability have not necessarily attained many formal academic qualifications while at school. Excluding the Open University, there are some universities who organise mature student courses for people who do not have the necessary qualifications to attain a university place. Evaluation of those students who are accepted for a university course suggests that a higher percentage of them leave university as Honours graduates than the percentage of students who gain entry via the traditional route. (Walker 1975, Woodley 1984) This phenomenon is not only found within general adult education. It is probable that within nursing the majority of senior nurses over the age of thirty five who have Higher grades attained them after they commenced nurse training. Similarly many nurses who have a Higher degree or a post graduate Diploma probably have attained it, not on the basis of a first degree, but on the basis of their progress within nursing. Despite their lack of formal academic qualifications these nurses usually perform as well, if not better than their non-nursing peers.

A major implication of such findings is that it would seem unwise to reject potential recruits for nursing primarily because they fail to meet a standard of academic achievement which cannot be justified by current research knowledge, but which is 'felt' to be a necessary and major pre-requisite for training. Similarly it would seem unwise to reject potential recruits, particularly older, married recruits, primarily on the basis that they only have the minimum entry requirement, when there is so little research evidence to support the need for higher entry qualifications, and when the ability of mature learners to succeed is well documented by both psychologists and adult educators.

Another implication of this study is the need to place less emphasis during recruitment on traditional criteria such as social background, parental attitude to choice of career, and the availability of an appropriate environment for studying. The emphasis placed on the importance of nursing having been a lifelong ambition is of doubtful value, and even if nursing was not the first career choice this is unlikely to adversely affect later achievement levels.

Only a few non-cognitive factors such as attitude towards clerical work, or reason for studying at school, or perception of the value of conservatism/radicalism, or number of secondary schools attended, have been identified which may be able to contribute towards predicting a degree of success in examinations during Stage 1 of training. However it might be useful to explore these when taking up references and/or during interview. (For a complete list of such factors one must consult the appropriate headings in Chapter 3) As long as fewer than half the sample can be classified as consistent achievers there is a need to consider all factors which may influence learning outcome, and not simply those factors related to the learners, or under their control. It is important to recognise the role which the learning environment and the teachers' contribution has on the learning outcome, and for nurse teachers and clinical teachers to be willing to evaluate these variables objectively, particularly in relation to low and high achievers. It is also important to consider the effect of stress in the clinical situation, particularly in the area of interpersonal relationships, and the effect that this can have on motivation and learning.

Several non-cognitive factors in the study have highlighted differences between a percentage of relocated learners and the non-relocated learners, and it would seem reasonable for interviewers

to keep these factors in mind when recruiting learners. As indicated earlier it would also be useful to follow up this finding with further research. If these findings are accurate for even half of all relocated learners, the savings in cost, training time, programming time, and counselling time could be substantial, not to mention being able to prevent patients being nursed by some learners who have apparently little interest in people or their needs.

All nurses, no matter what their job entails or what level in the hierarchy they are placed, are committed to ensuring, either directly or indirectly, that patients are cared for by people who have a sound knowledge base and a genuine desire to use their full potential for the patients' benefit.

Although it is difficult to identify exact criteria for entry to nursing it is important that studies in this area continue to be undertaken. It is recognised that the learner who succeeds academically may not be satisfactory in the clinical area. Examinations have always been acknowledged as a poor tool for measuring nursing, however until continuous ward assessment is able to discriminate more effectively in relation to the quality of a learner's nursing practice, examination results will continue to be the main tool used. Consequently it can only be hoped that the findings from this study will stimulate the profession to seek to justify objectively some of the present methods of selection, and be willing to review some of the criteria used at present in the light of further enquiry. Only by a willingness to evaluate constantly and, where appropriate, change selection criteria, can the profession hope to fulfil its commitment to patients through thoughtful, objective selection of learner nurses.

It must be noted that the definitions of the terms and concepts given below are those used in this study. In other situations some may be defined differently.

ACADEMIC QUALIFICATIONS The UKCC stipulate that the minimum requirement for entry to 1st level training in Scotland is Ordinary grade passes at band 'C' or above in five subjects, or by passing an approved test (eg DC1 Test) if over twenty three years of age. 2 Higher grades plus 2 Ordinary grades can also be accepted with subjects at 'H' grade in the same subjects as those at 'O' grade. For the purpose of this study a system of points will be allocated for the 'H' grades, 'O' grades, or approved test score. An 'H' grade will be allocated three points, and an 'O' grade will be allocated one point provided it has not been converted to an 'H'grade. Scores on the DC1 Test of between a pass and 60 will be allocated five points, between 61 and 70 eight points, and 71 or over eleven points. The following terms in relation to academic qualifications will be used.

LOW ACADEMIC QUALIFICATIONS The attainment of eight points or less in relation to the pointage system outlined above.

HIGH ACADEMIC QUALIFICATIONS The attainment of thirteen points or more in relation to the pointage system outlined above.

AVERAGE ACADEMIC QUALIFICATIONS The attainment of any number of points that cannot be categorised under either of the above two headings.

ATTITUDE A more or less stable set or disposition of belief, interest or purpose, involving expectancy of a certain kind of experience and readiness with an appropriate response.

COGNITIVE ABILITY The ability of an individual to use mental processes hypothesised to occur during perception, learning, and thinking.

COLLEGE OF NURSING In 1974 some of the smaller Schools of Nursing in Scotland were closed and others were merged to create Colleges of Nursing and Midwifery. (Schools of Nursing still exist in England and Wales.) Usually each establishment is linked to several hospitals and the learners gain their practical experience in more than one hospital. A College often has 400-800 learners.

DC1 TEST This is a test which was devised by the University of Leeds School of Education for the UKCC as an alternative method of entry to nurse training for candidates over the age of 23 years who do not have the minimum statutory academic qualifications for entry to nursing. Not all Colleges use the test. Some will only accept mature learners who have academic qualifications similar to those candidates under 23 years of age.

EXAMINATION RESULTS

LOW EXAMINATION RESULT The attainment of a standard deviation score which is half a standard deviation or more below the sample mean.

HIGH EXAMINATION RESULT The attainment of a standard deviation score which is half a standard deviation or more above the sample mean.

AVERAGE EXAMINATION RESULT The attainment of any standard deviation score which cannot be categorised under either of the above two headings.

FAMILY BACKGROUND This term covers information regarding the learner's -

- social class
- size of family
- home study conditions
- marital status
- employment history

FIRST LEVEL TRAINING A three year training leading to registration with the UKCC as a Registered Nurse.

LEARNER/ LEARNER NURSE/STUDENT NURSE A person undergoing three years training in a College of Nursing, leading to the qualification of RGN in general nursing, RMN in psychiatric nursing, or RNMH in mental handicap nursing.

MODULE A statutory learning unit which consists of a minimum of 2 weeks theory followed by a minimum of 13 weeks related clinical practice.

MOTIVE That which induces a person to act in a certain way.

NATIONAL BOARD The National Boards are statutory bodies set up in Scotland, England and Wales, and Northern Ireland. Each National Board is an independent body which works closely with the UKCC. The National Board is responsible for ensuring that the policies of the UKCC in respect of education and training are carried out. They also investgate cases of alleged professional misconduct.

NON-COGNITIVE FACTOR For the purposes of this study, the following will be regarded as non-cognitive factors:

- personality characteristics
- social class
- size of family
- home study conditions
- attitudes to study
- marital status
- employment history
- scholastic background
- vocational preferences
- motives for choosing nursing

PERSONALITY CHARACTERISTICS The individual characteristics and ways of behaving that, in their organisation or patterning, account for an individual's adjustments to his total environment.

PRELIMINARY STATE EXAMINATION This was a statutory examination which was conducted at the end of the first year of training. It consisted of a written examination, and a practical examination in the clinical area.

SCHOLASTIC BACKGROUND This term covers information regarding

type of school attended

age on leaving school

number of different secondary schools attended

SCHOOL OF NURSING A training establishment linked to one hospital and usually situated in that hospital's grounds. The learners received the theory of nursing in the School and then practised the theory in the hospital. The number of learners in each establishment was variable, but could be less than 100.

STAGE 1 The first 18 months of training in Scotland during which 1st level learners complete modules on Care of the Elderly Patient, Care of the Mentally Ill or Mentally Handicapped, Care of the Surgical Patient and Care of the Medical Patient. They also sit the Stage 1 examination.

STAGE 1 STATE EXAMINATION This is a statutory national examination (Scottish National Board) taken at any time after the 75th week of training. Candidates are examined under four headings: Anatomy and Physiology; Care of the Physically Ill Patient; Care of the Mentally Ill or Mentally Handicapped Patient; and Care of the Elderly Patient. Success in this examination enables the learner to commence Stage 2 of training.

STANDARD DEVIATION SCORE This score is calculated using the formula -

$$SDS = \frac{X-Y}{Z}$$

where SDS = Standard deviation score.

X = Learner's average examination mark calculated from the first three modular examinations during Stage One of training.

Y = Mean score for each College calculated from learners' average examination marks.

Z = Standard deviation for each College calculated from learners' average examination marks.

UNITED KINGDOM CENTRAL COUNCIL (UKCC) The UKCC is a statutory body. It is responsible for the policy and drafting of the rules to govern training and education, registration, and professional conduct of all nurses in the UK.

Module	Stage in Module	Students Involved	Reasons for Contact	Maximum Duration of Contact
Introductory	1st, 2nd or 3rd Day	Total Intake	1. Introduction of self and explanation of work. Establish rapport and cover ethical points on confidentiality. Give students opportunity to decline to become involved in the study. Answer any questions. 2. Administer Singh's test of motives for entering nursing (20 items). This must be administered early to prevent the student's response being influenced by nursing personnel	½ hour
1	Any time during theoretical input	Total Intake	Administer Cattell's 16 Personality Factor Test, Form A (189 items). This must be administered prior to any module one examination.	1½ hours approx (not yet piloted)
2	Any time during theoretical input	Total Intake	1. Administer Kuder Vocational Preference Record (186 items). Students by now have had some clinical experience.	1 hour approx (not yet piloted)
2	Any time before the 5th week. Preferably during theoretical input	Total Intake	2. Short questionnaire (46 items) to give details about family and scholastic background, work experience and study habits. Would prefer to administer it myself and collect the responses but would be willing to receive them later by post.	

Intake: MAY/JUNE 1986 CLASS

PROPOSED STUDENT CONTACT DURING STUDY

APPENDIX I

Module	Stage in Module	Students Involved	Reasons for Contact	Maximum Duration of Contact
3 and 4	Any time during theoretical input	a. Randomly selected sample of students with highest academic qualifications	Interview to explore family and school background, career choice and nurse training in greater depth. Two samples in order to identify any similarities and/or differences between the two groups.	1 hour per student
		b. Randomly selected sample from those with lowest qualifications	Due to the method of sample selection it is not possible to say at this point in time how many interviews will be carried out in any one college. The number is unlikely to exceed 8, and it is possible though unlikely, that a college may not be involved in this part of the study. Definite numbers will be known by the end of July, 1986	
Any module	-	Students who are discontinued by the college or who terminate training.	Exploratory interview to ascertain experiences during training and feelings about leaving. If students leave before Module 2, the interview will also cover family and school background. Permission to approach students who leave will be obtained by the researcher when she introduces the study during the Introductory Module. These interviews will be conducted outwith the college, unless both the DNE and the student involved are willing to have the interview conducted on college premises	45 minutes per student

APPENDIX I continued

APPENDIX II

REASONS FOR ENTERING NURSE TRAINING

Below is a list of known reasons for people deciding to train as a nurse.

On the last page are various needs that we all have and next to each stated need are words/phrases which illustrate that need. By using the group coding provided, please indicate which group you think each statement is best suited to.

There is no right or wrong answer, it is your opinion that is sought. When doing this exercise, please do not discuss it with anyone else.

	REASON	Group Selected	Official Use Only
1.	Opportunity to gain people's confidence.		
2.	To nurse people no matter what age they are or what their illness is.		
3.	Patients trust and rely on nurses to help them		
4.	The opportunity to set up equipment for a variety of procedures.		
5.	To nurse the underprivileged.		
6.	The opportunity to care for people with long term illness.		
7.	The opportunity to give advice to others.		
8.	The opportunity to care for children.		
9.	To help people who are ill.		
10.	The opportunity to let patients rely on me to help them.		
11.	The opportunity to care for the dying.		
12.	Rewarding to know I have helped someone to get better.		
13.	I am a good listener.		
14.	Nurses are trusted and regarded highly by patients.		
15.	The opportunity to care for the elderly.		
16.	The opportunity to be involved in curing people.		

	REASON	Group Selected	Official Use Only
17.	The opportunity to meet people.		
18.	The opportunity of employment while possibly looking round for another job.		
19.	Curious about what the work of a nurse actually involves.		
20.	The chance to gain a position of responsibility in a short time.		
21.	To work in a job where I would feel good.		
22.	I did not want to go to University or College.		
23.	The starting salary.		
24.	I thought it would be rewarding and satisfying work.		
25.	No prospects of an alternative career.		
26.	The opportunity to learn what causes illnesses.		
27.	Wanted a career.		
28.	Wanted a job where I felt needed.		
29.	The long term salary prospects.		
30.	The chance of travelling after training.		
31.	A religious reason.		
32.	Opportunities for promotion throughout one's career.		
33.	To overcome fear of illness or hospitals.		
34.	Security of employment.		
35.	To gain job satisfaction.		
36.	The esteem with which people regard a nurse.		
37.	Wanted a job that was enjoyable.		
38.	To learn about psychology, sociology, pathology, biology etc.		
39.	To have a challenging job.		

PRIMARY NEED	EXAMPLES OF ASSOCIATED WORDS/PHRASES	CODING
Physiological (Bodily) Needs	eg food, water, shelter.	Group A
Safety Needs	eg need to feel secure & safe: protection against deprivation: out of danger.	Group B
Social Needs	eg giving and receiving friendship and love: to affiliate with others: belonging: love need: association with others.	Group C
Esteem Needs	eg to gain approval and recognition: social respect: status: reputation: self confidence: self esteem.	Group D
Cognitive Needs	eg to know, to understand: to explore: knowledge.	Group E
Aesthetic Needs	eg symmetry, order and beauty: vivid appreciativeness: taste: sensitivity	Group F
Self-actualisation	eg being creative: realising one's potential: to find self-fulfilment: self-development: mastery.	Group G

APPENDIX III

REASONS FOR ENTERING NURSE TRAINING

Below is a list of known reasons for people entering nurse training.

We all come into nursing for reasons related to what we can do for patients AND for reasons related to what nursing can do for us. Therefore the list is divided into two sections. Section A outlines reasons related to patient care. Section B outlines reasons related to our own needs. Both sections are equally important in nursing because our needs must be met before we can fully meet the needs of patients.

Please follow the instructions on the separate answer sheet to indicate which of these stated reasons influenced YOU to become a nurse. Do not talk over the statements with anyone.

PLEASE NOTE THAT THERE ARE NO RIGHT OR WRONG RESPONSES TO THIS EXERCISE

Section A

I came into nursing:

1. to nurse the underprivileged.
2. because you get the opportunity to care for the dying.
3. because you get the opportunity to set up equipment for a variety of procedures.
4. because you get the opportunity to care for people with long term illness.
5. to nurse people no matter what age they are or what their illness is.
6. because you get the opportunity to care for the elderly.
7. to help people who are ill.
8. because nurses are trusted and regarded highly by patients.
9. because it is rewarding to know I have helped someone to get better.
10. because you get the opportunity to care for children.
11. because patients trust and rely on nurses to help them.

Section B /

Section B

I came into nursing:

1. because you get the opportunity to meet people.

2. because of the starting salary.

3. to have a challenging job.

4. because I am curious about what the work of a nurse actually involves.

5. to learn about psychology, sociology, pathology, biology etc.

6. because of the long term salary prospects.

7. because of the esteem with which people regard a nurse.

8. because I had no prospects of an alternative career.

9. because you get security of employment.

10. to gain job satisfaction.

11. because it is an opportunity of employment while possibly looking round for another job.

12. because you get the opportunity to learn about what causes illnesses.

/over

REASONS FOR ENTERING NURSING: ANSWER SHEET

STUDENT'S REFERENCE NUMBER _____

Official Use Only

1. From the list of reasons given in SECTION A, please indicate in the box below which of these reasons influenced YOU to become a nurse.

   Enter a minimum of 2 and a maximum of 5 reasons IN PRIORITY ORDER.

Section A

CHOICE	REASON NUMBER	
1st		1. |_|
2nd		2. |_|
3rd		3. |_|
4th		4. |_|
5th		5. |_|

2. If you feel that there are really no reasons in Section A which influenced you in your decision to come into nurse training, please outline your main reason(s) in the space provided below. Remember because this is part of Section A only mention the reason(s) related to what you felt you could do for patients.

   I came into nursing:-

   \|_\|

   \|_\|

   \|_\|

3./

Official
Use Only

3. From the list of reasons given in Section B please indicate in the box below which of these reasons influenced YOU to become a nurse.

Section B

CHOICE	REASON NUMBER	
1st		1. |_|
2nd		2. |_|
3rd		3. |_|
4th		4. |_|
5th		5. |_|

4. If you feel that there are really no reasons related to what you felt nursing could do for you outlined in Section B, please state your main reason(s) in the space provided below. Remember the reasons have to be related to your needs rather than the patient's.

I came into nursing:-

\|_\|

\|_\|

\|_\|

THANK YOU FOR YOUR ASSISTANCE

APPENDIX IV

EVALUATION SHEET FOR STUDENT QUESTIONNAIRE

Please put a tick in the most appropriate box.

Official Use Only

1. Did the researcher's introduction to the project help to make you feel relaxed?
   Yes |_|
   No |_|

2. Were the researcher's verbal instructions about the questionnaire
   Clear |_|
   Unclear |_|

3. If you answered "unclear" to question 2, please outline why.

4. Were the researcher's written instructions about the questionnaire
   Clear |_|
   Unclear |_|

5. If you answered "unclear" to question 4, please underline the word or words which were unclear.

6. Did you find the questionnaire difficult to fill in?
   Yes |_|
   No |_|

7. Did the researcher have to help you when you were filling in the questionnaire?
   Yes |_|
   No |_|

8. Were the majority of the questions:
   difficult to answer |_|
   easy to answer |_|

9. Did you find any of the questions embarrassing to answer?
   Yes |_|
   No |_|

10. If you answered "yes" to question 9, please state the number(s) of the question(s) which embarrassed you.

    question numbers _____

Official Use Only

11. Did you deliberately not answer any question? Yes |_| No |_|

12. If you answered "yes" to question 11, please state the number(s) of the question(s).
question numbers: _____

13. Questions 1 - 14 inclusive dealt with your family background.

Did you find the interpretation of the questions
easy |_|
difficult |_|
some easy/some difficult |_|

14. If you answered "difficult" or "some easy/ some difficult" to question 13, please list the number(s) of the question(s) which you found difficult to interpret, and if possible beside the number(s) a short note stating why.

15. Would you like to seen any question(s) omitted from this section of the questionnaire Yes |_| No |_|

16. If you answered "yes" to question 15, please list the number(s) of the question(s) and, if possible state the reason why.

| Official Use Only

17. Questions 15 - 28 inclusive dealt mainly with school and employment.

    Did you find the interpretation of these questions

    easy |_|
    difficult |_|
    some easy/some difficult |_|

18. If you answered "difficult" or "some easy/some difficult" to questions 17, please list the number(s) of the question(s) which you found difficult to interpret and if possible, beside the number(s) a short note stating why.

19. Would you like to see any question(s) omitted from this section of the questionnaire?

    Yes |_|
    No |_|

20. If you answered "yes" to question 19, please list the number(s) of the question(s) and, if possible, state the reason why.

21. Question 29 - 46 inclusive dealt mainly with studying.

    Did you find the interpretation of these questions

    easy |_|
    difficult |_|
    some easy/some difficult |_|

Official Use Only

22. If you answered "difficult" or "some easy/ some difficult" to question 21, please list the number(s) of the question(s) which you found difficult to interpret and, if possible, beside the number(s) a short note stating why.

23. Would you like to see any question(s) omitted from this section of the questionnaire.

Yes |_|
No |_|

24. If you answered "yes" to question 23, please list the number(s) of the question(s) and, if possible, state the reason why.

25. Did you find the filling in of the questionnaire

enjoyable |_|
boring |_|
neither |_|

26. Can you suggest ways of improving the questionnaire? If so, please outline below

APPENDIX V

REASONS FOR ENTERING NURSE TRAINING

Below is a list of known reasons for people deciding to train as nurses. The reasons have been categorised into 6 groups.

Using the box provided, please rank each group in order of its importance in influencing you in your decision to accept an applicant for 1st level training. Rank the most important group first and the least important group sixth.

There is no right or wrong answer, it is your opinion that is sought. When doing this exercise, please do not discuss it with anyone else.

Thank you for your assistance.

GROUP A

I came into nursing:

1. because of the starting salary.
2. because of the long term salary prospects.
3. because I had no prospects of an alternative career.
4. because it is an opportunity of employment while looking around for another job.

GROUP C

I came into nursing:

1. because you get the opportunity to meet people.
2. because you get the opportunity to care for people with long term illness.
3. to nurse people no matter what age they are, or what their illness is.
4. because you get the opportunity to care for the elderly.
5. because you get the opportunity to care for children.

GROUP D

I came into nursing:

1. because nurses are trusted and regarded highly by patients.
2. because patients trust and rely on nurses to help them.
3. because of the esteem with which people regard a nurse.

GROUP E

I came into nursing;

1. to have a challenging job.
2. because I am curious about what the work of a nurse actually involves.
3. to learn about psychology, sociology, pathology, biology etc.
4. because you get an opportunity to learn about what causes illness.
5. because you get the opportunity to set up equipment for a variety of procedures.

/over

GROUP G

I came into nursing:

1. to gain job satisfaction.

GROUP I

I came into nursing:

1. to nurse the underprivileged
2. because you get the opportunity to care for the dying
3. to help people who are ill
4. because it is rewarding to know I have helped someone to get better.

CHOICE	GROUP
1st	
2nd	
3rd	
4th	
5th	
6th	

JUDGES RANKING

1st - Group C 86% agreement
2nd - Group I 69% agreement
3rd - Group D 68% agreement
4th - Group G 78% agreement
5th - Group E 92% agreement
6th - Group A 98% agreement

APPENDIX VI

STUDENT NURSE QUESTIONNAIRE

Below are a series of 46 questions/statements. Almost all require you to put a tick in the most appropriate box. They are presented in four sections, which have the headings Personal, Schooling, Employment and Studying. Where a written answer is required PLEASE PRINT your answer. The questionnaire should take about 12 minutes to complete.

STUDENT REFERENCE NUMBER .....

			OFFICIAL USE ONLY
SECTION 1 - PERSONAL Q1 - 14			
1. Please state whether	Male	|_|	0
	Female	|_|	1
2. Please state what age you were when you entered nursing	17½ yrs	|_|	1
	18 - 20 yrs	|_|	2
	21 - 25 yrs	|_|	3
	26 - 30 yrs	|_|	4
	31 - 35 yrs	|_|	5
	36 - 40 yrs	|_|	6
	over 40 yrs	|_|	7
3. Please state the occupation of parents. If unemployed or retired, please state previous occupation.			
A) Father _____			1 2 3 4 5 6 7
B) Mother _____			1 2 3 4 5 6 7
4. Please state whether	Single	|_|	0
	Married	|_|	1
	Co-habiting	|_|	2
	Widowed	|_|	3
	Divorced	|_|	4
	Separated	|_|	5

/over

5.	Please state occupation of spouse/live-in partner. If unemployed, please state previous employment. If question not appropriate, enter N/A.		1 2 3 4 5 6 7
			8
6.	Please state the number of children you have.	0 |_|	0
		1 |_|	1
		2 |_|	2
		3 - 5 |_|	3
		over 5 |_|	4
7.	Do you live in the nurses home?		
		yes, most of the time |_|	1
		yes, some of the time |_|	2
		no |_|	3

IF YOU ANSWERED "YES, MOST OF THE TIME/SOME OF THE TIME" TO QUESTION 7, OMIT THE NEXT 6 QUESTIONS AND GO TO QUESTION 14.

8.	How many people do you live with?	0 |_|	0
		1 |_|	1
		2 |_|	2
		3 |_|	3
		4 - 6 |_|	4
		over 6 |_|	5
9.	Do you live with anyone under the age of ten years?	Yes |_|	1
		No |_|	0
10.	Do you live with anyone under the age of five years?	Yes |_|	1
		No |_|	0
11.	Do you live with anyone who is either mentally or physically infirm?	Yes |_|	1
		No |_|	0
12.	If you answered "Yes" to Question 11, do they require any assistance from you?	Yes |_|	1
		No |_|	0
13.	Is there a room in the house where you can be alone to study?	Yes |_|	1
		No |_|	0

/over

			Official Use Only
14.	Can you study if there is noise going on round you?	Yes |_|	1
		No |_|	0

SECTION 2 - SCHOOLING Q15 - 17

15.	Please state what type of school you attended.	Fee Paying |_|	1
		Comprehensive |_|	2
		Senior Secondary |_|	3
		Junior Secondary |_|	4
		Other |_|	5
	If "other" please state type _____		1 2 3 4
16.	What age were you when you left school?	14 years |_|	1
		15 " |_|	2
		16 " |_|	3
		17 " |_|	4
		18 " |_|	5
		19 " |_|	6
17.	How many schools did you attend <u>after leaving</u> primary school?	1 |_|	1
		2 |_|	2
		3 |_|	3
		4 |_|	4
		more than 4 |_|	5

SECTION 3 - EMPLOYMENT Q18 - 28

18.	Have you ever been unemployed?	Yes |_|	1
		No |_|	0
19.	Have you ever <u>lived</u> with someone who was unemployed?	Yes |_|	1
		No |_|	0
20.	If you answered "yes" to question 19 please state whether the unemployed person was	father |_|	1
		mother |_|	2
		brother/sister |_|	3
		spouse/live-in partner |_|	4
		grandparent |_|	5
		friend |_|	6
		other |_|	7

/over

			Official Use Only
21.	Please state whether security of employment influenced your decision to enter nursing		
	Very strongly	|_|	1
	strongly	|_|	2
	a little	|_|	3
	not at all	|_|	4
22.	Please state whether security of a career after qualifying influenced your decision to enter nursing		
	Very strongly	|_|	1
	strongly	|_|	2
	a little	|_|	3
	not at all	|_|	4
23.	Please state whether your father's attitude towards the idea of you taking up nursing was		
	entirely favourable	|_|	1
	favourable with some reservations	|_|	2
	indifferent	|_|	3
	rather opposed on the whole	|_|	4
	do not know	|_|	5
	does not apply	|_|	6
24.	Please state whether your mother's attitude towards the idea of you taking up nursing was		
	entirely favourable	|_|	1
	favourable with some reservations	|_|	2
	indifferent	|_|	3
	rather opposed on the whole	|_|	4
	do not know	|_|	5
	does not apply	|_|	6
25.	Please state whether your spouse/ partner's attitude towards the idea of you taking up nursing was		
	entirely favourable	|_|	1
	favourable with some reservations	|_|	2
	indifferent	|_|	3
	rather opposed on the whole	|_|	4
	do not know	|_|	5
	does not apply	|_|	6
26.	Did anyone else's attitude towards the idea of you taking up nursing influence you?		
	Yes	|_|	1
	No	|_|	2
If you answered "yes" please state whom _____			1 2 3 4 5

/over

			Official Use Only
27.	Please state whether an interest in nursing influenced your decision to enter nursing		
	very strongly	|_|	1
	strongly	|_|	2
	a little	|_|	3
	not at all	|_|	4
28.	Please state whether the opportunity to help other people influenced your decision to enter nursing		
	very strongly	|_|	1
	strongly	|_|	2
	a little	|_|	3
	not at all	|_|	4

SECTION 4 - STUDYING Q29 - 46

29.	When re-reading your notes after a teaching session, do you find them easy to understand?		
	Yes	|_|	0
	No	|_|	1
30.	Do you USUALLY stop studying		
	when you are tired	|_|	1
	when you are bored	|_|	2
	when the time you allocated yourself is ended	|_|	3
	when you feel that you understand the material	|_|	4
31.	When given a piece of work to complete in your own time, do you USUALLY		
	complete it promptly	|_|	1
	do it as soon as possible	|_|	2
	put off doing it for as long as possible	|_|	3
32.	When studying, do you USUALLY		
	pre-select the topics that you wish to revise, then study them	|_|	1
	initially pre-select, then change your mind once you start studying	|_|	2
	decide what you will revise as you go along	|_|	3

/over

			Official Use Only
33.	When studying, do you USUALLY		
	plan beforehand how long you will spend on each topic	|_|	1
	work on each topic without limit of time	|_|	2
34.	When studying, do you USUALLY		
	re-read notes and/or books	|_|	1
	read and make notes	|_|	2
	read, write out relevant questions and then try to answer them	|_|	3
35.	Which of the following methods of study do you USUALLY use?		
	set aside definite times for study	|_|	1
	study when you feel like it	|_|	2
	only study immediately before an examination	|_|	3
36.	Are you easily distracted from studying?		
	Yes	|_|	1
	No	|_|	0
37.	Are people who study regularly 'bores'/'squares'		
	Yes	|_|	1
	No	|_|	0
38.	When you have to study, do you feel the odd one out in your circle of friends?		
	Yes	|_|	0
	Sometimes	|_|	2
	No	|_|	1
39.	Do friends try to persuade you to join them rather than study?		
	Often	|_|	1
	Sometimes	|_|	2
	Rarely	|_|	0

/over

			Official Use Only
40.	Do you study:-		
	A) Just enough to get through	|_|	0
	B) Just enough to get an average mark	|_|	2
	C) Hard, with the intention of getting the best possible mark	|_|	1
	B) More than B, but less than C	|_|	3
41.	Do you ever put off studying because you are too tired?		
		Yes |_|	1
		No |_|	0
42.	Do you ever put off studying because you cannot get peace?		
		Yes |_|	1
		No |_|	0
43.	Do you sometimes put off studying because of social commitments?		
		Yes |_|	1
		No |_|	0
44.	Do you sometimes put off studying because you dislike it?		
		Yes |_|	1
		No |_|	0
45	Do your friends feel that you study too much?		
		Yes |_|	1
		No |_|	0
		Don't know |_|	2
46.	If you answered "yes" to question 45, does it bother you that friends feel that you study too much?		
		Yes |_|	1
		No |_|	0

Have you remembered to enter your
REFERENCE NUMBER at the top of Page 1?

Thank you for your assistance.

APPENDIX VII

STUDENT NURSE QUESTIONNAIRE CODING FRAME

Most of the questions are coded as per the responses on the questionnaire. Below are the codes for the exceptions.

SECTION 1 - PERSONAL

Question 3 Hall-Jones Scale of social class: 1 - 7

1. Professional and high administrative (ie, accountant doctor, bank manager etc).
2. Managerial and executive (ie, trained nurse, secretary, senior bank clerk etc).
3. Inspectional, supervisory and other non manual (higher grade) (ie, tax officer, branch manager etc).
4. Inspection, supervisory and other non manual (lower grade)(ie, accounting clerk, sergeant, librarian etc).
5. Skilled manual (ie, baker, butcher, bus driver).
6. Semi-skilled (ie, milkman, shophand).
7. Unskilled (ie, labourer, factory worker).

Where question not appropriate coded 8; eg unemployed.

Questions 8 - 13 Coded 9 if learner lives in the nurse's home.

Question 12 Coded 3 if not applicable.

SECTION 2 - SCHOOLING

Question 15 Other response (Code 5) subcoded 1 - 5.

1. Residential
2. Non British
3. Church of England
4. Special
5. Other

/over

SECTION 3 - EMPLOYMENT

Question 20A; Coded 8 - not applicable
Question 20B; Coded 8 - not applicable
Question 20C; Coded 8 - not applicable
Question 26B; Code 1 response sub-coded 1 - 6

1. Friend
2. Sibling
3. Grandparent
4. Aunt/Uncle
5. Cousin
6. Other
8. Not applicable

SECTION 4 - STUDYING

Question 46; Coded 3 if not applicable.

APPENDIX VIII

INTERVIEW SCHEDULE

Student Reference No: _____

Average academic qualifications for class

Thank you for agreeing to talk to me. As explained before, anything you say will be completely confidential and, if you agree to the use of the tape recorder, its contents will also be completely confidential and, once used, the tape will be destroyed. How do you feel about the tape recorder being used?

Now the talk will cover four main areas:

- your family background
- school and your choice of career
- nurse training

and - people as nurses. OK?

Answer the questions as honestly and fully as you can. If you are giving me too much or too little information, I will let you know.

Some of the questions are factual, but most ask you about your ideas and attitudes, therefore there are no right or wrong answers. So lets start off by you telling me a little about yourself.

1. Are you single, married or .....?
   Do you live with your parents?
   Go to next Q if want parent's response.
   Go to Q4 if want partner's response.

2. How did your parent's feel about you coming into nursing?

   Father:

   Mother:

3. What effect did that have on your decision?

Go to Q6

/over

4. Partner's response. What did your husband/partner feel about you coming into nursing?"

5. What effect did that have on your decision?

6. Did anyone else influence you in your choice of career? Yes/No
Prompt - eg Teachers?
If "no" go to Q8

7. In what way?

8. What did you do before you came into nursing?

9. If you did not have this job (ie were unemployed) what effect would it have on you financially?

10. What effect would it have on other people eg family?

11. Would it affect you in any other way? Yes / no

12. If "yes" - probe How?

I would like to talk a little about your secondary schooling and career choice now. None of the questions refer to primary.

13. Did you go to school in Scotland, England or .....?

14. What type of school was it?

15. Did you bother about examination results when you were there?
Yes / No

/over

16. Why was that?

17. How much importance did teachers place on school examinations, both class exams and 'O' and "H" exams?

18. Why do you think they though that way?

19. How did your parents react to your school exam results?

Father:

Mother:

20. Why was that?

21. At a certain stage in secondary school you have to "drop" certain subjects in order to be able to take other subjects, isn't that right? Did you have a nursing career in mind when you chose which subjects to drop and which to take?

Yes - go to next question (Q 22)

No - go to Q 23

22. What did your teachers think of nursing as a career?

Go to Q 24

23. What careers did you have in mind when you were at school?

Go to Q 25

24. What other career did you have in mind when you were at school?

25. If jobs were not difficult to come by and you had the ability to do any job you chose, which job would you choose and why?

26. Have you ever been unemployed?

Yes - go to next question (Q 27)

No - go to Q 28

/over

27. What effect did it have on you?

28. Have you ever lived with someone who was unemployed?

Yes - go to next question (Q 29)

No - go to Q 30

29. What effect if any did it have on you?

30. What age were you when you decided that you wanted to be a nurse?

31. Why did you decide to enter nursing?

If stock answer, probe. eg "I like working with people" Why sick people?

This seems a good point to move on to questions about nursing and your training.

32. Are you enjoying training?

No - go to next question (Q33)

Yes - go to Q 35

33. Why is that?

34. Were you happier at an earlier stage in your training.

No - go to Q 37

Yes - probe response

Go to Q 37

35. What is the most enjoyable part of it?

36. Have you always enjoyed it?

Yes - go to next question (Q 37)

No - probe response

/over

37. Is the fact that you can gain promotion within nursing once you are qualified important to you?

Yes - go to next question (Q 38)

No - go to Q 39

Unsure - go to Q 40

38. Why is it important?

Go to Q 40

39. Why is it not important?

40. What position would you like to achieve eventually?

41. Have you ever referred to your notes/books to assist you to understand a patient or their illness?

No - go to next question (Q 42)

Yes - go to Q 43

42. Why not?

Notes

Books

Go to Q 44

43. Did they help you? Yes / No

44. How relevant are your lectures and teaching sessions to nursing on the wards?

/over

45. Do you think you can be a good bedside nurse without knowing a lot about nursing theory?

Yes / No / Depends (Birch)

46. What do you think of people who come into nursing for no reason other than to get off the dole queue?

47. Most students have to study at some time, do you?

Yes / No

48. Why?

49. What is the purpose of lecture notes and handouts to you?

50. Do you take notes during lectures?

Yes / No

51. In terms of being difficult or easy, how have you found your training so far?

52. Why do you think it has been like that?

53. Are you regarded as a plodding, half successful person? (Cattell 143)

Yes: go to next question (Q54)
No: go to Q56

/over

54. Who thinks you are like that?

55. Are they correct?

Yes : No

56. Do your tutors put a lot of store by academic qualifications?

Yes: go to next question (Q57)
No: go to Q58

57. How do you feel about that?

58. How would you rate your academic qualifications in relation to your classmates?

59. How does that make you feel?

60. What qualifications do you consider are necessary for someone who wishes to train as a registered nurse?

61. What qualifications have you .....
These are higher/lower than most students. Are you made to feel different from the rest of the class because of this?

Yes: go to next question (Q62)
No: go to Q63

62. In what way and by whom?

63. Why do you think the people in you class have chosen to come into nursing?

If stock answer probe. eg "To help people" ..."All of them?"

/over

Finally I should like to ask 9 or 10 more questions about people as nurses.

64. Are there any types of people that you feel should not be be recruited to train for the register? Feel free with your answer.
(Probe response if necessary)

65. Do any of these people exist in your class?

Yes No

66. Should people who present themselves in a sloppy, untidy way be accepted for student nurse training? (Probe response)

Yes .....

No .....

67. Should people who are not satisfied with a task unless even the minor details are given close attention be accepted for student nurse training? (Probe response)

Yes .....

No .....

68. Should polite, quiet people be accepted for student nurse training?

Yes No

69. Should forceful people be accepted for student nurse training?

Yes No

If "Yes" to Q 68 and "No" to Q69, go to Q71

70. Why both?

Go to Q72

/over

71. Why one and not the other?

72. If you could find another job would you ever consider leaving nursing?

Yes No

73. Why?

74. Do you feel that all your other classmates are suited to nursing?

Yes: interview finished
No: go to final question

75. Why is that?

Thank student, offer chance to

A) add any comments of own.

B) ask any questions.

APPENDIX IX

CODE BOOK FOR STUDENT INTERVIEWS

(1)	Single	0	Widowed	3	
	Married	1	Divorced	4	
	Co-habiting	2	Separated	5	

(2)	Both supportive	0	Father supportive mother not	5
	Neutral	1	Mother supportive father not	6
	Non supportive	2	Don't know	7
	Father supportive mother neutral	3	Does not apply	8
	Mother supportive father neutral	4	One parent family	9

(3)	No effect	0	Uncertain about choice	2
	More determined	1	Reinforced choice	3
			Anxious	4

(4)	Not applicable	10	Non supportive	13
	Supportive	11	Don't know	14
	Neutral	12		

(5)	No effect	5	Uncertain about choice	7
	More determined	6	Reinforced choice	8
			Anxious	9

(6)	No one	0	Grandparent	3	Teacher	6
	Friend	1	Aunt/Uncle	4	Career Officer	7
	Sibling	2	Cousin	5		

(7)	Positive attitude to choice	0
	Negative attitude to choice	1
	Increase insight into choice	2

(8)	School	0	Unskilled work	4
	Unemployed	1	Semi-skilled work	5
	University or Higher education	2	Other profession	6
	Raising a family	3	Voluntary work	7

/over

(9)

None	0
Reduced standard, social and basic need unaffected	1
Social need affected, basic needs unaffected	2
Social and basic needs affected	3
Poverty line	4

(10)

None	5
Reduced standard, social and basic needs unaffected	6
Social needs affected, basic needs unaffected	7
Social and basic needs affected	8
Poverty line	9
Non financial affects	10
Negative emotional effect	11
Exert pressure to find work	12

(11)

Yes	0
No	1

(12)

Does not apply	0	Boredom	3
Self esteem	1	Frustration	4
Depression	2	Isolation	5
		Aggressive	6

---

(13)

Scotland	0	Europe	3
England, N Ireland, Wales	1	Other	4

(14)

Residential	0	Senior Secondary	3
Fee-paying	1	Junior Secondary	4
Comprehensive	2	Other	5

(15)

Yes	0
No	1

(16)

Disliked school	0	Parental attitude positive	5
Parental attitude negative	1	Teacher attitude positive	6
Teacher attitude negative	2	Positive career attitude	7
Negative career attitude	3	Liked to do well	8
Neutral career attitude	4	Other	9

/over

(17)	Very important	0	Some importance	2
	Important	1	Little importance	3
(18)	University entrance	0	Vague awareness wanted	
	College entrance	1	Pupils to 'do well'	3
	Employment opportunities	2	Don't know	4
(19)	Both interested/proud	0	Mother interested/proud father not	3
	Both interested	1	Don't know	4
	Father interested/proud mother not	2	Does not apply	5
			One parent family	6
(20)	Own dislike of school	6	Previous unemployment	9
	Own liking for school	7	Pleased for child	10
	University/Higher Ed/ entrance	8	Don't know	11
(21)	Yes	0		
	No	1		
(22)	Positive attitude	0	Negative attitude	2
	Neutral	1	Don't know	3
(23/ 24)	No others	0	Health related, 'thing' orientated	4
	Medicine	1	Non health, 'thing' orientated	5
	Other health related, 'people' orientated	2	No fixed idea	6
	Non health, 'people' orientated	3	Other	7

(25) Coded as (23/24)

Reason for choice:

Better salary	8	Fulfil a dream	12
More autonomy	9	Job satisfaction	13
Better conditions	10	Irregular hours	14
More interesting	11	Enjoy helping people	15
		Other	16

/over

(26) Yes 0
No 1

(27) None 0
Self esteem 1
Depression 2
Boredom 3
Frustration 4
Isolation 5
Financial 6
Other 7

(28) Yes 0
No 1

(29) None 0
Awareness of problems 1
Increased awareness of problems 2
Fear of unemployment 3
Interpersonal relationship problems 4

(30) Unable to recall 0
Pre-secondary school 1
12 - 14 years 2
15 - 17 years 3
18 - 20 years 4
21 - 25 years 5
Over 26 years 6

(31) Always wanted to nurse 0
Altruistic reason 1
Dependency need 2
Job security 3
Family tradition 4
Always interested in nursing 5
Don't know 6

---

(32) Yes 0
No 1

(33) Too autocratic 0
Theory difficult 1
Inconsistency between theory and practice 2
Experienced poor ward management 3
Shifts 4
Unrealistic expectations 5
Experienced staff shortage 6

/over

(34) Yes 0 No 1

Positive response coded.

Less pressure	0	Positive classroom experience	4
Had achieved ambition	1	Don't know	5
In employment	2	Other	6
Positive clinical experience	3		

(35)

All parts	0	Care of elderly theory	5
Surgery theory	1	" " practice	6
" practice	2	Psychiatry theory	7
Medical theory	3	" practice	8
"	4	All practice	9
		Learning new skills	10

(36) Yes 0 No 1

'No' response - code as (33)

(37)

Yes	0
No	1
Unsure	2

(38)

Need challenge	0	Enjoy responsibility	2
Financial rewards	1	Ambitious	3
		Other	4

(39)

Dislike responsibility	0
Wish to remain at clinical level	1
Other	2

(40)

Staff nurse	0	Clinical teacher	4
Charge nurse	1	Nurse teacher	5
NO	2	DNS, DNE	6
SNO	3	Other	7

(41)

Yes	0
No	1

/over

(42) Notes

Illegible	0 (3)	Unrealistic content	3 (6)
Incomplete	1 (4)	Lost	4 (7)
Poor lecture	2 (5)	Lack of time	5 (8)
		Other	6 (9)

Books

No book on subject	7	Unrealistic	10
Content too advanced	8	Lack of time	11
Dislike reading	9	Books outdated	12
		Other	13

(43)

Yes	0	Subcode as below	
No	1	Subcode as per brackets in (42)	
Sometimes	2	Subcode using either 'Yes' or 'No' options	

Yes subcode

Notes

General principles covered	10	Quick reference	13
Simple classification	11	Specific areas covered	14
Other	12	Other	15

(44)

Relevant - no difficulties	0	Physiology relevant	8
No relevance	1	Physiology mixed	9
Nursing lectures relevant	2	Physiology not relevant	10
" " mixed	3	Overall mixed	11
" " not relevant	4	Other	12
Practical sessions relevant	5		
" " Mixed	6		
" " not relevant	7		

(45)

Yes	0	Depends on task	3
No	1	Other factors	4
Depends on patient's illness	2		

(46)

Positive response	0
Neutral response	1
Negative response	2

/over

(47)
Yes	0
No	1
Yes,but not as much as should	2
Yes, often	3
No, I don't need to	4

(48)
Pass exams	0	Interested in particular topic/subject	3
Self esteem in ward	1	Fear of failure	4
Related to particular patient/problem	2	Improve employment chances	5

(49)
None	0	Useful quick reference	3
Learning aid	1	Up-to-date information	4
Help pass exams	2	Other	5

(50)
Yes	0
No	1

(51)
Theory difficult,practice easy	0	Relationships initially difficult	5
Theory easy, practice difficult	1	Relationships difficult	6
Theory and practice both difficult	2	Relationships easy	7
Theory and practice both easy	3	Stress	8
Mixed experience	4	Other	9

(52)
Don't know	0
Lack of clinical support	1
Lack of tutorial support	2
Clinical work more difficult than anticipated	3
Theoretical work more difficult than anticipated	4
Have not studied enough	5
Clinical area - strange environment	6
Topics lack depth	7
Not taxed in clinical area	8
Good clinical support	9
Good tutorial support	10
Regular studying	11
Other	12

(53)
Yes	0
No	1

/over

(54)	Myself	0	School teachers	3
	Peers	1	Nurse teachers	4
	Family	2	Ward staff	5

(55)	Yes	0
	No	1

(56)	Yes	0
	No	1

(57)	Did not bother me	0
	Had some effect - worked harder	1
	Had some effect - worked less at certain topics	2
	Felt very pressurised	3

(58)	Better	0	About average	2
	As good as	1	Not as good as	3
			Don't know	4

(59)	Not important	0	Inferior	4
	Superior	1	Embarrassed	5
	Confident/good	2	Inadequate	6
	Should have done medicine/ university	3	Anxious	7

(60) <u>Academic Qualifications</u>

'0' grades only	0
'0' + 'H' grades	1
Specific science subjects	2
Specific arts subjects	3

<u>Non-academic Qualifications</u>

Leadership qualities (organisation, confidence)	4
Characteristics of 'robustness' (stamina, healthy)	5
Self presentation (neat, tidy)	6
Moral/religious qualities (honest, dependable)	7
Personal characteristics (cheerful, caring, patient)	8

/over

(61) Yes 0
No 1

(62) In what way

Inferior	0	Superior	3
Less capable	1	Capable	4
Expect less of one	2	Expect more of one	5

By whom

Peers	6	Clinical teacher	8
Ward staff	7	Nurse teacher	9

(63)

Employment need	0	Family tradition	3
Dependency need	1	Career ambition	4
Altruistic	2	Don't know	5

---

(64)

No	0	Addiction	4
Criminal record	1	Physical deformity	5
Previous physical illness	2	Very introverted	6
Previous mental illness	3	Very extroverted	7
		Quick tempered	8
		Other	9

(65) Yes 0
No 1

(66)

Yes	0	No	1
Capable of change	2	Poor image	3
Need range	4	Reflects attitudes	4
In uniform	6	Other	7
Other	8		

/over

(67)	Yes	0	No	1
	Positive attitude	2	Negative attitude	3
	Capable of change	4	Slow up routine	5
	Other	6	Sign of illness	7
			Other	8

(68)	Yes	0	No	1
	Reflects professionalism	2	Need to challenge	3
	Need range	4	Need to communicate	5
	Other	6	Other	7

(69)	Yes	0	No	1
	Reflects professionalism	2	Need to challenge	3
	Leadership qualities	4	Lack gentleness	5
	Need people to challenge	6	Other	7
	Other	8		

(70)	Different patients different needs	0
	Future career development	1
	Other	2

(71)

(72)	Yes	0
	No	1

(73)	Financial reasons	0	Too difficult	6
	Disillusioned	1	Sound reasons	7
	Bored	2	Enjoyable	8
	Frustrated	3	Achieving ambition	9
	Physically tiring	4	Altruistic reason	10
	Could do better	5	Other	11

/over

(74)	Yes	0		
	No	1		
(75)	Financial interest only	0	Lack caring	4
	Too introverted	1	Lack discipline	5
	Too extroverted	2	Selfish	6
	Aggressive	3	Other	7

APPENDIX X

INTERVIEW SCHEDULE FOR LEAVERS

Ref No: Average Academic Qualification for Class:

Stage in training when left/discontinued:

Documented reason for discontinuation:

If student questionnaire previously completed omit questions marked *.

Thank you for agreeing to talk to me. As explained before, anything you say will be completely confidential.

Now the talk will mainly cover your experiences during training and your feelings about leaving. OK? Answer the questions as honestly and fully as you can. If you are giving me too much or too little information, I will let you know. Now can you tell me .....

Official Use Only

* 1. How did your parents/partner feel about you coming into nursing?

* 2. What did you do before you went into nursing?

* 3. What careers did you have in mind when you were at school?

4. Why did you decide to enter nursing?

5. Did you enjoy any part of your training? Yes No

If 'No' go to Q6
If 'Yes' go to Q7

/over

Official Use Only

6. Why was that?

Go to Q 9

7. What parts did you enjoy?

8. What parts did you not enjoy, if any?

9. How relevant were you lectures and teaching sessions to nursing on the wards?

If 'not relevant' go to Q 10
If 'relevant' go to Q 11

10. What effect did that have on you?

11. Do you think that students can be good bedside nurses without knowing a lot about nursing theory?

/over

				Official Use Only
12.	Most students have to study at some time, did you?	Yes	No	
13.	Why?			
14.	How did you find studying?			
15.	In terms of being difficult or easy, how did you find your training?			
16.	Why do think it was like that?			
17.	Did these thoughts (related to Q15 & Q6) contribute to your decision to leave?	Yes	No	
18.	Were you regarded as a plodding, half successful person?	Yes	No	
	If 'Yes' go to Q19 If 'No' go to Q21			
19.	Who thought you were like that?			
20.	Were they correct?	Yes	No	
21.	Did your tutors put a lot of store by academic qualifications?	Yes	No	
	If 'Yes' go to Q22 If 'No' go to Q23			

22. What did you feel about that?

Official Use Only

23. How did you rate you academic qualifications in relation to your ex-classmates?

24. How did that make you feel?

25. What qualifications do you consider are necessary for someone who wishes to train as a registered nurse?

26. Did you have these qualities? Yes No

Probe answer ie Which did you have/lack

27. What academic qualifications have you?

These are higher/lower than most student nurses. Where you made to feel different from the rest of the class because of this? Yes No

If 'Yes' go to Q 28

If 'No' go to Q 29

28. In what way and by whom?

/over

29. Do you feel that all the other people in your class who are still training are suited to nursing? Yes No

If 'No' go to Q 30
If 'Yes' go to Q 31

30. Why is that?

31. Do you have a feeling of failure? Yes No

32. Did you leave or was your training discontinued by the College? Left Discontinued

If 'Left' go to Q 33
If 'Discontinued' go to Q 34

33. Did any one person play a large part in your reason for leaving? Yes No

If 'Yes', probe. Who and in what way?

34. How did you get on with the teaching staff?

If necessary, probe. All of them?

35. How did you get on with the patients?

If necessary, probe. All of them?

Official Use Only

/over

36. How did you get on with the ward staff?

Official Use Only

If necessary, probe. All grades?

If discontinued by College go to Q 37

If left of own accord go to Q 41

37. Do you regret having had your training discontinued? Yes No

If 'Yes' go to Q 38
If 'No' go to Q 39

38. If you could turn the clock back, what would you do to prevent it happening again?

Go to Q 40

39. Why not?

40. Why were you discontinued?

Go to Q 44

41. Why did you leave?

42. Do you regret leaving? Yes No

/over

43. Why?

44. What are you going to do now?

Official Use Only

APPENDIX XI

TEST: SPEARMAN CORRELATION COEFFICIENT

INDEPENDENT VARIABLE	DEPENDENT VARIABLE			
	ACHIEVEMENT		EXAM RESULTS	
	Rho	SIG	Rho	SIG
A. Reasons for Entering Nursing				
(Section A)				
1st choice	0.04	0.68	-0.12	0.19
2nd choice	0.07	0.44	-0.04	0.66
3rd choice	0.16	0.07	-0.23	0.01
5th choice	0.03	0.74	-0.06	0.50
(Section B)				
1st choice	-0.09	0.34	0.0004	0.99
2nd choice	0.13	0.17	0.04	0.63
3rd choice	0.03	0.78	-0.03	0.72
4th choice	0.04	0.64	-0.06	0.51
B. Cattell's 16 PF Questionnaire				
A. Reserved / outgoing	-0.02	0.83	-0.14	0.13
B. Less intelligent / more intelligent	0.19	0.04	0.03	0.72
C. Affected by feelings/emotionally stable	0.06	0.53	-0.06	0.53
E. Humble / assertive	-0.05	0.57	0.08	0.36
F. Sober / happy-go-lucky	0.09	0.32	-0.01	0.91
G. Expedient / conscientious	-0.02	0.79	0.12	0.21
I. Tough minded / tender minded	-0.01	0.89	0.03	0.74
L. Trusting / suspicious	-0.14	0.14	-0.04	0.67
M. Practical(careful) / imaginative	0.09	0.31	0.04	0.68
N. Forthright / shrewd	0.02	0.84	0.01	0.95
O. Self assured / apprehensive	-0.11	0.23	0.08	0.38
Q1 Conservative / experimenting	0.04	0.63	-0.03	0.78
Q2 Group dependent / self sufficient	0.17	0.07	-0.07	0.48
Q3 Undisciplined self conflict/controlled	-0.05	0.62	0.001	0.98
Second order factors				
Qi Introversion / extroversion	-0.04	0.64	0.02	0.79
Qii Low anxiety / high anxiety	-0.14	0.13	0.08	0.37
Qiv Subduedness / independence	0.08	0.37	0.02	0.79

		DEPENDENT VARIABLE			
		ACHIEVEMENT		EXAM RESULT	
		Rho	SIG	Rho	SIG
C.	Student Nurse Questionnaire				
	Section 1: Personal				
Q1	Sex	-0.21	0.02	0.26	0.005
Q2	Age	-0.20	0.03	0.20	0.03
Q3	Father's occupation	-0.08	0.36	0.02	0.83
Q4	Marital status	-0.29	0.001	0.05	0.60
Q6	Number of children	-0.21	0.02	0.08	0.37
Q7	Living in nurse's home	0.11	0.25	-0.13	0.15
Q13	Room free for studying	0.07	0.43	-0.10	0.27
Q14	Able to study in noisy environment	0.14	0.12	-0.02	0.82
	Section 2: Schooling				
Q15	Type of school attended	-0.11	0.23	0.02	0.84
Q17	Number of secondary schools attended	-0.01	0.89	-0.11	0.24
	Section 3: Employment				
Q18	Experienced unemployment	0.007	0.94	-0.001	0.98
Q19	Lived with unemployed person	-0.09	0.36	0.07	0.44
Q21	Influence of security of employment	0.11	0.25	-0.12	0.19
Q22	Influence of security of career	0.06	0.49	-0.02	0.18
Q24	Mother's attitude towards choice	0.005	0.96	-0.04	0.68
Q28	Affect of 'chance to help' on choice	0.13	0.15	0.06	0.50
	Section 4: Studying				
Q29	Lecture notes easy to understand	0.12	0.20	0.08	0.36
Q30	Reason for ending study session	0.03	0.78	-0.05	0.59
Q32	Study method; topics	0.003	0.98	-0.04	0.66
Q33	Study method; planning	0.02	0.85	0.06	0.53
Q34	Study method; procedure	-0.13	0.15	0.04	0.63
Q35	Study frequency; method	0.16	0.09	-0.04	0.63
Q36	Distractibility from study	0.03	0.74	-0.06	0.49
Q37	Attitude to those who study regularly	-0.17	0.06	-0.05	0.62
Q38	Study and friends; accepted by self	0.06	0.53	0.02	0.86
Q39	Study and friends; persuaded to stop	-0.21	0.02	0.19	0.04
Q40	Study frequency; motive	-0.13	0.15	0.24	0.009

		DEPENDENT VARIABLE			
		ACHIEVEMENT		EXAM RESULT	
		Rho	SIG	Rho	SIG
Q41	Study and tiredness	-0.04	0.69	0.003	0.97
Q42	Study and noise	-0.09	0.35	0.008	0.93
Q43	Study and socialising	-0.10	0.27	0.05	0.62
Q44	Dislike of studying	0.06	0.51	0.02	0.87
Q45	Friend's opinion of study habits	-0.08	0.41	-0.003	0.98
Q46	Attitude to friend's opinion	0.01	0.89	-0.03	0.72
D.	Kuder Occupational Preferences				
K1	Mechanical preference	0.14	0.12	-0.07	0.44
K2	Computational preference	-0.007	0.94	-0.07	0.44
K3	Scientific preference	0.01	0.91	0.007	0.94
K4	Persuasive preference	0.04	0.66	-0.08	0.39
K5	Artistic preference	0.004	0.97	0.13	0.18
K6	Literary preference	0.04	0.66	0.15	0.11
K7	Musical preference	0.01	0.92	0.02	0.86
K8	Social service preference	0.08	0.40	-0.01	0.91
K9	Clerical preference	0.04	0.66	-0.20	0.03
E.	Relocated learners	0.32	0.01	-0.21	0.02
F.	Learners Who Left or Were Discontinued	0.09	0.34	-0.08	0.38
G.	Academic Qualifications	---	---	0.18	0.05

APPENDIX XII

TEST: ONEWAY ANALYSIS OF VARIANCE (Dependent Variable Achievement)

INDEPENDENT VARIABLE	F.Ratio	F.Prob
A. Reasons for Entering Nursing		
(Section A)		
1st choice	2.57	0.81.
2nd choice	4.19	0.02
3rd choice	2.66	0.07
5th choice	0.08	0.93
(Section B)		
1st choice	0.68	0.51
2nd choice	2.27	0.11
3rd choice	0.46	0.63
4th choice	0.11	0.89
B. Cattell's 16PF Questionnaire		
A Reserved / outgoing	0.14	0.87
B Less intelligent / more intelligent	2.64	0.08
C Affected by feelings / emotionally stable	0.23	0.79
E Humble / assertive	0.16	0.85
F Sober / happy-go-lucky	2.12	0.12
G Expedient / conscientious	0.15	0.86
I Tough minded / tender minded	0.56	0.95
L Trusting / suspicious	2.33	0.10
M Practical (careful) / imaginative	0.88	0.42
N Forthright / shrewd	1.05	0.36
O Self assured / apprehensive	2.29	0.11
Q1 Conservative / experimenting	0.71	0.49
Q2 Group dependent / self sufficient	2.63	0.08
Q3 Undisciplined self conflict / controlled	0.40	0.67
Second order factors		
Qi Introversion / extroversion	0.03	0.97

		F.Ratio	F Prob
C.	Student Nurse Questionnaire		
	Section 1: Personal		
Q1	Sex	2.93	0.06
Q2	Age	3.73	0.03
Q3	Father's occupation	2.67	0.07
Q4	Marital status	4.97	0.009
Q6	Number of children	2.37	0.10
Q7	Living in nurse's home	3.66	0.03
Q13	Room free for studying	3.76	0.03
Q14	Able to study in noisy environment	1.89	0.16
	Section 2: Schooling		
Q15	Type of school attended	0.26	0.77
Q17	Number of secondary schools attended	0.62	0.54
	Section 3: Employment		
Q18	Experienced unemployment	0.26	0.77
Q19	Lived with unemployed person	4.97	0.009
Q21	Influence of security of employment	1.46	0.24
Q22	Influence of security of career	2.21	0.11
Q24	Mother's attitude towards choice	0.39	0.68
Q28	Affect of 'chance to help' on choice	0.98	0.38
	Section 4: Studying		
Q29	Lecture notes easy to understand?	0.66	0.52
Q30	Reason for ending study session	0.62	0.54
Q32	Study method; topics	0.46	0.63
Q33	Study method; planning	0.18	0.84
Q34	Study method; procedure	1.35	0.26
Q35	Study frequency; method	1.59	0.21
Q36	Distractability from study	0.33	0.72
Q37	Attitude to those who study regularly	2.13	0.12
Q38	Study and friends; accepted by self	0.97	0.38
Q39	Study and friends; persuaded to stop	2.59	0.08
Q40	Study frequency; motive	0.77	0.47

		F.Ratio	F.Prob
Q41	Study and tiredness	0.05	0.95
Q42	Study and noise	0.26	0.77
Q43	Study and socialising	0.42	0.66
Q44	Dislike of studying	0.73	0.49
Q45	Friend opinion of study habits	0.62	0.54
Q46	Attitude to friend's opinion	0.47	0.63
D.	Kuder Occupational Preferences		
K1	Mechanical preference	0.45	0.64
K2	Computational preference	1.72	0.18
K3	Scientific preference	2.51	0.09
K4	Persuasive preference	0.10	0.90
K5	Artistic preference	1.58	0.21
K6	Literary preference	0.04	0.96
K7	Musical preference	0.16	0.85
K8	Social service preference	0.93	0.40
K9	Clerical preference	0.10	0.09
E	Relocated Learners	3.64	0.03
F	Learners Who Left or Were Discontinued	0.48	0.62

APPENDIX XIII

TEST - PARTIAL CORRELATION COEFFICIENTS

Zero order Partials N = 93 (those who completed Stage I on schedule)

	Modular Exam Results	Stage I Exam Results	Academic Qualifications
Modular Exam Results	1.0000 P = /	0.5058 P = 0.000	0.1703 P = 0.051
Stage I Exam Results	0.5058 P = 0.000	1.0000 P = /	0.2888 P = 0.002
Academic Qualifications	0.1703 P = 0.051	0.2888 P = 0.002	1.0000 P = /

CONTROLLING FOR ACADEMIC QUALIFICATIONS

	Stage I Exam Results
Modular Exam Results	0.4800 P = 0.000

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. SDMARK (SD RESULT OVER 3 MODULAR EXAMINATIONS)

Beginning Block Number 1 Method: Forward

ACPOINT	D1	D2	D3	D4	R1	R2	R3	R5	R1B	R2B	R3B	R4B	A
B	C	E	F	G	I	L	M	N	O	QA	QB	QC	EXTRA
IND	ANX	Q1	Q2	Q3	Q4	Q6	Q7	Q13	Q14	Q15	Q17	Q18	Q19
Q40	Q41	Q42	Q43	Q44	Q45	Q46	K1	K2	K3	K4	K5	K6	K7
K8	K9	RELOCAT	LEFT										

Step	MultiR	Rsq	AdjRsq	F(Eqn)	SigF	RsqCh	FCh	SigCh		Variable	BetaIn	Correl	
1	.2637	.0695	.0612	8.371	.005	.0695	8.371	.005	In:	Q40	.2637	.2637	STUDY FREQUENCY - MOTIVE
2.	.3464	.1200	.1041	7.568	.001	.0505	6.364	.013	In:	R3	-.2246	-.2249	THIRD REASON FOR ENTRY, SECTION A
3	.4012	.1610	.1381	7.036	.000	.0410	5.375	.022	In:	Q17	-.2065	-.1341	NUMBER SEC. SCHOOLS ATTENDED
4	.4546	.2066	.1775	7.097	.000	.0456	6.268	.014	In:	Q2	.2312	.2096	AGE
5	.4912	.2413	.2061	6.868	.000	.0346	4.929	.029	In:	R1	-.1886	-.1188	FIRST REASON FOR ENTRY, SECTION A
6	.5380	.2894	.2496	7.264	.000	.0482	7.254	.008	In:	K9	-.2286	-.2322	CLERICAL PREFERENCE
7	.5708	.3258	.2813	7.318	.000	.0364	5.719	.019	In:	Q39	.1949	.1471	STUDY AND FRIENDS - PERSUADED

REGRESSION ANALYSIS - TOTAL SAMPLE OF LEARNERS /continued overleaf

APPENDIX XIV

Step	MultR	Rsq	AdjRsq	F(Eqn)	SigF	RsqCh	FCh	SigCh		Variable	BetaIn	Correl	
8.	.5934	.3521	.3028	7.134	.000	.0264	4.271	.041	In:	Q29	.1681	.0983	LECTURE NOTES EASY TO UNDERSTAND
9	.6118	.3743	.3202	6.913	.000	.0222	3.684	.058	In:	Q1	.1565	.2016	SEX
10	.6293	.3960	.3373	6.752	.000	.0216	3.691	.057	In:	Q13	-.1579	-.2070	ROOM FREE FOR STUDYING?
11	.6440	.4148	.3517	6.573	.000	.0188	3.283	.073	In:	Q30	-.1442	-.0534	REASON FOR ENDING STUDY SESSION
12.	.6595	.4349	.3677	6.477	.000	.0201	3.591	.061	In:	QA	-.1471	-.0410	CONSERVATIVE - EXPERIMENTING
13	.6709	.4501	.3786	6.296	.000	.0152	2.762	.100	In:	Q28	.1344	.1324	AFFECT OF "CHANCE TO HELP" ON CHOICE

Variable(s) Entered On Step Number 13.. Q28 AFFECT OF "CHANCE TO HELP" ON CHOICE

Multiple R	.67088		
R Square	.45008	R Square Change	.01519
Adjusted R Square	.37859	F Change	2.76151
Standard Error	.76371	Signif F Change	.0997

APPENDIX XIV /continued

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable SDMARK (SD RESULT OVER 3 MODULAR EXAMINATIONS)

Beginning Block Number 1 Method Forward

ACPOINT	D1	D2	D3	D4	R1	R2	R3	R5	R1B	R2B	R3B	R4B	A
B	C	E	F	G	I	L	M	N	O	QA	QB	QC	EXTRA
IND	ANX	Q1	Q2	Q3	Q4	Q6	Q7	Q13	Q14	Q15	Q17	Q18	Q19
Q21	Q22	Q24	Q28	Q29	Q30	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39
Q40	Q41	Q42	Q43	Q44	Q45	Q46	K1	K2	K3	K4	K5	K6	K7
K8	K9	RELOCAT	LEFT										

Step	MultR	Rsq	AdjRsq	F(Eqn)	SigF	RsqCh	FCh	SigCh		Variable	BetaIn	Correl	
1	.4527	.2050	.1881	12.118	.001	.2050	12.118	.001	In:	Q40	.4527	.4527	STUDY FREQUENCY-MOTIVE
2	.5518	.3045	.2743	10.070	.000	.0995	6.582	.014	In:	Q7	-.3201	-.3874	LIVING IN NURSES HOME
3.	.6057	.3668	.3246	8.690	.000	.0623	4.430	.041	In:	D1	.2646	.4144	
4	.6679	.4461	.3958	8.859	.000	.0793	6.298	.016	In:	Q6	.2839	.2345	NUMBER OF CHILDREN
5	.7114	.5060	.4486	8.810	.000	.0599	5.218	.027	In:	R3	-.2466	-.1749	THIRD REASON FOR ENTRY, SECTION A
6	.7362	.5420	.4766	8.284	.000	.0359	3.297	.077	In:	Q4	.1955	.2752	MARITAL STATUS
7	.7614	.5797	.5079	8.077	.000	.0377	3.675	.062	In:	K9	-.2069	-.2504	CLERICAL PREFERENCE

REGRESSION ANALYSIS - SUB SAMPLE OF LEARNERS WITH ABOVE AVERAGE ACADEMIC QUALIFICATIONS / continued overleaf

APPENDIX XV

Step	MultR	Rsq	AdjRsq	F(Eqn)	SigF	RsqCh	FCh	SigCh		Variable	BetaIn	Correl	
8	.7853	.6167	.5400	8.045	.000	.0370	3.865	.056	In:	RELOCAT	-.2065	-.1966	LEARNERS WHO WERE RELOCATED
9	.8112	.6580	.5790	8.336	.000	.0413	4.705	.036	In:	C	-.2190	-.0510	AFFECTED BY FEELINGS - EMOTIONALLY LESS STABLE
10	.8296	.6883	.6062	8.390	.000	.0303	3.694	.062	In:	Q17	-.1971	-.2056	NUMBER OF SEC. SCHOOLS ATTENDED
11	.8457	.7152	.6305	8.446	.000	.0269	3.496	.069	In:	R4B	-.1902	-.1344	FOURTH REASON FOR ENTRY, SECTION B
12	.8646	.7475	.6633	8.881	.000	.0323	4.609	.039	In:	ACPOINT	.1994	.0126	POINTS ALLOCATED TO 'H' AND 'O' GROUP
13	.8837	.7809	.6996	9.597	.000	.0334	5.340	.027	In:	Q29	-.2244	.0953	LECTURE NOTES EASY TO UNDERSTAND
14	.8962	.8032	.7221	9.910	.000	.0222	3.843	.058	In:	Q38	.1753	-.1543	STUDY AND FRIENDS - ACCEPTED BY SELF
15	.9051	.8192	.7370	9.966	.000	.0160	2.920	.097	In:	Q18	-.1397	-.0782	EXPERIENCED UNEMPLOYMENT
16	.9153	.8378	.7567	10.329	.000	.0186	3.670	.064	In:	I	.1767	.1960	TOUGH MINDED - TENDER MINDED
17	.9249	.8555	.7763	10.799	.000	.0178	3.810	.060	In:	D3	.1921	.2711	

Variable(s) Entered on Step Number 17.. D3

Multiple R	.92495		
R Square	.85553	R Square Change	.01775
Adjusted R Square	.77631	F Change	3.80978
Standard Error	.48025	Signif F Change	.0600

F = 10.79880 Signif F = .0000

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable... SDMARK (SD RESULT OVER 3 MODULAR EXAMINATIONS)

Beginning Block Number 1 Method Forward

ACPOINT	D1	D2	D3	D4	R1	R2	R3	R5	R1B	R2B	R3B	R4B	A
B	C	E	F	G	I	L	M	N	O	QA	QB	QC	EXTRA
IND	ANX	Q1	Q2	Q3	Q4	Q6	Q7	Q13	Q14	Q15	Q17	Q18	Q19
Q21	Q22	Q24	Q28	Q29	Q30	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39
Q40	Q41	Q42	Q43	Q44	Q45	Q46	K1	K2	K3	K4	K5	K6	K7
K8	K9	RELOCAT	LEFT										

Step	MultR	Rsq	AdjRsq	F(Eqn)	SigF	RsqCh	FCh	SigCh		Variable	BetaIn	Correl	
1	.2820	.0795	.0649	5.445	.023	.0795	5.445	.023	In:	A	-.2820	-.2820	RESERVED-OUTGOING
2	.3990	.1592	.1321	5.869	.005	.0796	5.873	.018	In:	QB	-.2896	-.2119	GROUP DEPENDENT-SELF SUFFICIENT
3	.4586	.2103	.1715	5.415	.002	.0511	3.948	.051	In:	Q30	-.2270	-.2121	REASON FOR ENDING STUDY SESSION
4	.5088	.2589	.2095	5.240	.001	.0486	3.934	.052	In:	Q1	.2271	.2463	SEX
5	.5508	.3033	.2443	5.138	.001	.0444	3.762	.057	In:	Q2	.2129	.2400	AGE
6	.5860	.3434	.2755	5.057	.000	.0401	3.544	.065	In:	Q15	-.2217	-.0751	NUMBER OF SECONDARY SCHOOLS ATTENDED

Variable(s) Entered on Step Number 6.. Q17 NUMBER OF SECONDARY SCHOOLS ATTENDED

REGRESSION ANALYSIS - SUB SAMPLE OF LEARNERS WITH AVERAGE OR BELOW AVERAGE ACADEMIC QUALIFICATIONS / continued overleaf

APPENDIX XVI

Multiple R	.58604		
R Square	.34345	R Square Change	.04011
Adjusted R Square	.27553	F Change	3.54376
Standard Error	.76991	Signif F Change	.0648

F = 5.05673 Signif F = .0003

APPENDIX XVI /continued

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