Personal Characteristics and Occupational Preferences of Secondary School Leavers in Kano

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D E D I C A T I O N

This study is dedicated
Lovingly to the memory of
my late Father
ELDER ISAAC O. AKPAN

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ABSTRACT

This study was aimed at investigating the relationship between personal characteristics (Interest, Sex, Personality and Intelligence) and the occupational preferences of secondary sen leavers in Kano, and knowing how their expressed occup tional interests relate to tested occupational preferences. One hundred and forty Form Five students (eighty boys and sixty girls) drawn randomly from six secondary schools in Kano, formed the total sample for the study.

The Rothwell-Miller Interest Blank (RMBI), the Eysenck Personality Inventory (EPI) and the Raven Standard Progressive Matrices (RPM) were used to me sure trie subjects[1] occupational ests, interest of introversion and extroversion and the 1evels non-verbal intelligence respectively. A short questionnaire was also used to find out the subjects'' expressed occupation irences.

In order to see the relationship between the subjects' expressedandtestedoccupationalpreferences,theRothwell-Miller Interest Blank and the short questionnaire were administered.No signficant relationships were found in their expressed and tested . occupationa1 preferences.

1t wa s f ound that sex differences existed in some of the occupational preferences of the subjects.

Eysenck and Cookson (1969) claimed that Introverts aspire toward scientific occupations and extroverts towards linguistic

achievements. To put the claim to test, the subjects on the basis of their scores on the Esyenck Personality Inventory (RPI) were classified into less extroverts and more extroverts. The more extraverts occupational preferencies as shown by the Rothwell-Miller Interest Blank (RMBI) were compared with those of the less extroverts and no significant differences were found between the two groups.

Also, no significant differences in non-verbal intelligence were found between the subjects who selected scientific and those who selected persuasive occupations.

The study has further revealed the subjects' rather low occupational awareness and e lack of realistic touch with the world of work. The need to re-examine and reshape the existing secondary school curriculum in this respect and also the crucial role school counsellors could play to enhance a meaningful occupationa1 development of secondary school students,have been stressed.

CHAPTER ONE

Introduction

In a foreward to "Careers in Nigeria" by Okam (1966), Professor Kenneth Dike stated that no matter how good a man's education is, the efforts of government and other agencies who contribute to his education are wasted if he is found unsuited to the work for which he has been carefully prepared, or if he is unhappy in his chosen career. According to him, it is not enough to train people for jobs, but that the right people should be trained for the right jobs.

Identifying the right people to train for the right jobs is not easy, the literature on occupational psychology contains abundant evidence of several attempts to identify the right people for the right jobs. How people choose occupations and why they choose them have been analysed by investigators like Super (1953), Roe (1957), Ginzberg (1951), Holland (1959), O'Hara and Tiedeman (1959) The contributions, have been quite useful and additive but certainly not conclusive.

Okam (1966) has stressed the necessity of basing occupational choice on more realistic factors such as personal characteristics including aptitudes, interests, natural bent of the job seeker and the kind of work the individual feels he would like to do.

(2) Aims of this study:

Generally speaking the aims of the present study were to know the occupational preferences of form five pupils of selected schools in Kano and find the relationships between their personal characteristics and occupational preferences. These aims were specifically directed to:-

(a) find out the occupational preferences of form five secondary school pupils by using the Rothwell - Miller Interest Blank and to know their expressed occupational interests.

(b) assess the role of sex in the subjects' occupational preferences.

(c) study the relationship between the occupational preferences and the personality types of the subjects.

(d) study the relationship between the subjects' intelligence and their occupational preferences.

(e) stimulate interest in further research around the Nigerian Secondary school child, with a view to keeping the secondary school system alive with its vital responsibilities of which learning is just a part.

Pertinent to the aims of this study, there are a number of variables that are related to individuals' occupational choices. There is a need for a general analysis of these variables and explanation of certain terms used in this study and other similar investigations.

The remainder of this chapter is therefore devoted to the explanation of relavent variables and terms.

(3) Occupational Choice: What it is.

'Occupational Choice' is a term that is often used ambiguously. Some vocational psychologists agree with the definition of choice as "preference", ie, what the individual "prefers' to do - (Gilger 1942, Trow 1941). The idea behind this definition is that if an individual is given two or more courses of action, he has to make a choice. The choice he makes will depend on how that particular course selected appeals to him. Preference here suggests ranking. If an individual has to choose from a given number of occupations, he ranks them along a continuum of the estimates he makes of his chances in each (Crites: 1969).

Kuvlesky and Bealer (1966) define occupational choice as "the psychological preferences ... that the individual has regarding work statuses". They further equate 'vocational choice' with the term "aspiration". However, they stress that it is but a part of the total process of occupational attainment.

Ginzberg (1951) has however pointed out that 'choice' is not exactly the same thing as preference. For, although all choices indicate preference not all preference imply choice. Crites' idea that when an individual expresses a preference, he tries to indicate what he would like to do, but in making a choice he shows what he probably would do, further shows the distinction between choice and preference.

Super (1953) has gone a little further to suggests that the term "preference" should apply to unimplimented courses of action, while 'choice' means a different thing at a different age level. Here Super tends to be laying emphasis on the content of occupational choice at different age levels, but seems not to have considered also the behaviour involved in making a choice. For as Crites (1969) puts it, whether or not a course of action is implemented, it has little to do with the definition of choice and preference. In relation to preference, one may look at choice as what the individual predicts he will be doing in future, while preference denotes what he would like to be doing. The slight difference in usage pointed out by Ackoff (1953) is that choice is more "reality oriented" than preference. An individual bases his choice on what he perceives as real and his estimate that he can implement it successfully. In the case of preference, he is merely indicating what his possible occupation might be.

In the above consideration, choice is seen as a point - in - time affair; ie an event that takes place at a given time. This has been the way early vocational psychologists like Paterson and Darley (1936), Williamson and Darley (1937) conceptualised choice. To them choice is only a decision an individual has to make at a given time.

However, there is a school of vocational psychologists that take a rather broader view of vocational choice as a continuous process, Ginzberg et al (1951); Super (1953, 1956, 1957); Beilin (1955); Burchinal(1962)and Tiedeman (1961).

Ginzberg, et al (1951) consider choice as a process which takes place over a long period of time. They are of the view that an individual does not reach an ultimate decision at any particular moment in time, but through a series of decisions over a period of many years; that compromise is an essential aspect of every choice.

Super (1953 , 1956) has also expressed the view that choice is a continuous process. According to him there is no sharp distinction between choice and adjustment; that the two, choice and adjustment blend in adolescence.

Beilin (1955) however argues that choice should be seen as both an event and a process. He bases his argument on the fact that if one is collecting data on choice, the two basic ways of doing this would be through "point - in-time" analysis or through "progressive-time-sample" comparison. So it would be appropriate to think of the former approach as an event and the later as a process.

Burchinal (1962) views choice as the total developmental process in occupational attainment. He argues that the work one requires is conditioned both by preferences, the desires of the person for particular occupational status

and also by many factors over which the individual may have little or no control.

Tiedeman and his associates '(Tiedeman, O'Hara 1962) idea of vocational choice is in some way similar to that of Super (1953). They view vocational development as self development in relation with choice, entry and progress in educational and occupational pursuit. Tiedeman, on the other hand, has stressed that vocational development in men and women is so sufficiently different that a theory is needed for each.

For the purpose of this study, the definition of occupational choice as "the psychological preferences or desires that the individual has regarding work status" (Durojaiye 1970) was applicable.

(4) Personal Characteristics and Occupational Preferences

Coleman (1969) has listed personal characteristics as a set of factors that influence occupational choice and preferences. Such characteristics which some trait - and - factor theorists sometime refer to as "personality characteristics" include attitudes, self - perception', , abilities, interests, skills, intelligence desires, ambition etc, which make up the individual (Heim: 1970).

It has been said that clients in career exploration groups, consistently indicate that they consider clarifying the way they feel about themselves of primary importance to them before they can make occupational decisions (Garfield & Nelson: 1974).

Coleman has proposed three questions the correct answers to which he assumes can help to spotlight relevant personal characteristics. These, it is felt, can enhance a meaningful vocational planning. They are:-

(i) what does the individual want to do?

(ii) what can he do (or learn to do)?

(iii) How do his abilities and resources limit his choices?

If given in the context of occupational preferences of the individual, answers to these questions among other things, will respectively touch on interest, intelligence, abilities, personality and sex.

However, in this study attention was focused on four of such personal characteristics - interests, personality, intelligence and sex and their relationship with occupational preferences of adolescent secondary five students in Kano.

(a) Interests

As defined by Froehlich and Hoyt (1959), interests are "a tendency to select one activity in preference to something else". Strong's (1943) concept of interests is much more embracing and to some extent applicable in this study. Interest to him can be manifested in different ways :- Interest can be shown as a single expression indicating what the individual plans to do; Interests can be depicted as a group of items which the individual prefers.

Besides having meaningful relationships to other characteristics of the developing personality, interests are accepted as a crucial factor to be considered in vocational counselling and planning (Shertzer & Stone: 1971):

> "..... It has been found that men in particular occupations have characteristic sets of likes and dislikes which differentiate them from men in other occupations ....." (p. 344).

For example, in a study of teen-age school boys, Levine and Wallen (1954) found that interests were significantly related to subsequent vocational choices. Some of the relevant studies that have been conducted to show the place of interests in occupational choices are treated in more detail in a subsequent section of this study.

(b) Personality

A broad definition of personality refers to it as the total of all the characteristics which give a human being his individuality and distinguishes him as a person (Heim: 1970). Shaffer and Shoben (1956) consider the personality of an individual as his persistent tendencies to make certain kinds and qualities of adjustments. Eysenck (1947) had developed a theory of personality based on the assumption that there are two primary personality dimensions:-

(i) Introversion/Extraversion dimension.

(ii) Stable / unstable dimension.

The introversion/extraversion dimension of personality have been found to have some relationships with occupational choice process. Roe (1952, 1953); Terman (1954), Super and Crites (1962) have found such relationships between personality and vocational development. For the purpose of this study, the extraversion dimension of personality was used. How this was actually done would be shown in a subsequent section of this study.

(c) Intelligence

In this study, the meaning given to intelligence is based on the two definitions attributed to James Drever (1952) as:-

(a) The capacity to meet novel situations or to learn to do so by new adaptive responses.

(b) The ability to perform tests or tasks involving the grasping of relationships; the degree of intelligence being proportional to the complexity or abstractness or both of the relationships.

Intelligence is considered to be an influential factor in vocational development in many ways, and affects entry into many occupations. It relates in some special way even to the level of occupation at which an individual will have the best chance to compete (Jersild: 1963). It is known even from common sense argument that everybody cannot just fit into any occupation. Special talents, and abilities play a great role in getting people adjusted in certain vocational fields. For example, Jersild(1963) considers special abilities like "speed and accuracy of perception" as helpful in clerical work; while ability to comprehend mechanical relationships as important in skilled mechanical work.

In this study the Raven's Standard Progressive Matrices (RPM) was used to assess the non-verbal intelligence of the subjects. How this was done would be explained in a subsequent chapter.

(d) Sex:

Sex differences are present in almost every aspect of physical characteristics, like body - build and physiological functioning (Anastasi, 1958). Occupations tend to provide avenues for sex differentiation. Studies by Bailyn (1959), Empey (1958) Meyer (1969) and Nelson (1963) have shown that men and women appear to develop differently in terms of the patterns of their occupational interests.

In some part of Nigeria, especially the rural areas, for instance, some people still tend to hold the view that certain occupations are suitable for men, while some others should be regarded as mainly women's fields. Most women even seem to develop a rather pervasive self concept that tally with cultural and occupational role expectation. According to Peters and Hansen, (1977), Nelson (1963) and Shuval (1963) such tendency influences the sort of occupations they select or even determines whether they select a career at all.

For example, Horner's (1968) study of female career motivation showed that young women in the study could not agree that a competent, feminine person could have both a successful career and marriage. This seems to imply the notion that a woman can only pursue one, career or marriage, successfully at any given period of time. Whether or not sex plays any role in occupational selection of school leavers in Kano would be looked at closely at a different section of this study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

(A) Theoretical Approaches to explain the process of Occupational Choice:

In recent decades, a number of vocational psychologists have advanced theories of vocational choice or career development (Ginzberg 1951; Roe 1956; Holland 1959, Tiedeman and O'Hara 1963, Tyler 1962 and Super 1953). There hasn't yet been one theory that can be considered acceptable in every respect. In this section, three main approaches to the theory of vocational choice will be examined.

These include:-

(a) The Trait Approach.

(b) Personality Theory

(c) Developmental Approach.

They are discussed in the paragraphs below.

(a) The Trait Approach:

Hewer (1963) has pointed out that trait theories share the view that a person can be understood in terms of his traits and job requirements. If traits and job requirements can be isolated and measured, these theorists maintain, it could be possible to match people with jobs.

They stress that individuals have certain characteristics which can be identified by psychological assessments.

Such traits are considered more recognisable in one job description than in another (Stewart: 1968)

Traits, according to Hewer (1963) are behaviour manifestations by which an individual can be understood. A person can therefore be described as cold, warm, loving, hostile, Introverted extroverted and so on. When an individual possesses a trait that is condidered to be compatible with the demands of one occupation, he is then encouraged to enter that area.

The trait approach has been severely criticised in recent years. Some people have doubted whether this theory has defined personality in all its dimensions (Jenkin & Hykken, 1957; Brayfield, 1961). Also this approach has gradually been somewhat discredited as a means of understanding one's vocational choices.

However, some vocational counsellors still use it as a procedural method in conducting researches in the area of vocational choices. They try to find the individuals' isolated characteristics (or traits) by testing and then discussing jobs or fields of work which the test manuals suggest are related to the discovered traits (Stewart: 1968) The present researcher has to some degree used the procedural method of this theory.

(b) Personality Theory:

Vocational theorists like Roe (1956), Holland (1959), Forer (1953) and Bordin et al (1963), have advanced theories of vocational choice that tend to fall within the framework of the personality approach.

(i) Roe, for example, bases her theory of vocational choice on Maslow's structure of personality. According to Roe (1956, & 1966) on vocational choice lies the individual's "hierarchy of needs" system. It is a process of "self categorisation". Like Maslow, Roe looks at the individual as "an integrated organised whole" and that his classification should be based on goals or needs, whether conscious or unconcious (Carkuff et al: 1967). She sees an occupation as a means of satisfying such needs. Her needs theory is fairly comprehensive and it covers personality, choice and vocation. This theory has not, however, given any realistic direction to vocational counselling. It has not completely analysed the basic personal dimensions relevant to occupations (Nachmann & Segal: 1963). It appears that Roe hasn't tried to qualify existing theories in terms of her own. However Roe's level - and-group classification of occupations has remained a great contribution to the area of vocational psychology.

(ii) Holland (1959), 1963) has expressed the idea that occupational choice should be viewed within the context of the individual's general personality development, as the individual eventually sees himself and the world around him. When he is about to choose his occupation the individual is influenced by both his heredity and environment. Holland describes six personality types and associates each with an environmental model which bears the same name. The six major classes of vocational environments and the corresponding personality types are the Realistic, the Intellectual, the Social, the Conventional the Enterprising and the Artistic. According to him each personality types seeks out and is attracted by environments that gives satisfaction to needs associated with that particular personality type.

Isaacson (1967) has however criticised this theory on the grounds that it oversimplifies the process of vocational development. Carkuff, Alexit and Anderson (1967) express the idea that Holland's framework does not meet the criteria of a true "theory". It may be said that the idea of matching personality types with work environment may not be quite practicable in a developing country like Nigeria. Also, the theory seems rather silent about other factors that can affect vocational choice.

The theory appears rather mechanical and the personality types are more dynamic than the theory would make one believe. However his notion that "persons with particular personality patterns achieve in some environments than in others" can prove quite a useful guide to counsellors.

(iii) Forer's (1953) theory of occupational choice is that it is the expression of the personality and the emotional needs of the individual which often operates unconsciously. The specific occupation chosen or the inability of an individual to make preferences, is an expression of his basic personality organisation. Like the expression of other types of interests, occupational selection is a personal process. It represents the sum total of the individual's unique psychological development. However, as Hoppock (1967) explains it, one should remember that it may not be always easy "for many persons to estimate their own aptitude for activities in which they have had little opportunity to experiment". For instance, if an individual is ignorant about a given occupation, he will not have any good base to weigh his suitability for that occupation. It looks as if Forer did not consider the availability of relevant occupational information crucial to the individual's occupation selection, personal characteristics notwithstanding.

(C) The Developmental Approach:

The Developmental Theory of occupational choice is based on the major arguments of genetic psychologists (Stewart 1968). Investigators like Ginzberg (1951), Super (1953) and Tiedeman (1963) have stressed the developmental pattern rather than the isolated vocational choices. They tried to identify and name the stages in the vocational development of the individual.

(i) Ginzberg, for instance, divides the process of vocational choice into three stages:- Fantasy, Tentative and Realistic choice stages. During the first stage which ends at the age of 10 years, the individual expresses his choice in an arbitrary way. During the tentative stage the individual weighs his capacity, interests, values; he is in a stage of transition, and approaches nearer to the reality stage. The third stage is marked by career exploration, crystallisation and specification.

(ii) In his theoretical work, Super (1953) refers to five phases: growth, exploration, establishment, maintenance and decline. Super divides the individuals pattern of existence from childhood to death. Virtually, Super equates the process of self concept development with that of vocational development:-

> ".... The Choice of an occupation is one of the points in life at which a young person is called upon to state rather explicitly his concept of himself, to say definitely I am this or that type of person" (Super, 1953, p. 85)

Dillon's (1949) study gives some support to Super's concept. Dillon found that the psychological protocols of 25 persons who had selected teaching as a vocation, showed a definite relationship between the subject's motivational pressure and his concept of himself as a teacher (Englander: 1960)

The present researcher is quite interested in Supers formulations. In the case of this study, however, attention is mainly focused at some personal characteristics which the researcher feels have some relationship with occupational preferences of adolescent school pupils. An underlying idea one tends to get from Super's self-concept theory seems to be that self-concept formation does remain static after the individual has selected his vocation. I tend to agree with Wrenn (1958) that there isn't one self concept, but many. Clients should therefore be seen as changing organisms who engage in career related developmental tasks, that can enable them to adapt to changing situations and not as individuals looking for a suitable place in a stable environment (Ivey and Morrill: 1968).

In a developing country like Nigeria one may be forced by circumstances to accept any job that is readily available and not just wait to select one through which his self-concept development will be much more enhanced.

The conclusions one can draw from the foregoing discussion are that vocational choice should be considered on a multidimensional basis. That as most of these theorists agree, choice tends to be tentative and sometimes non-specific in nature. Also that the reasons for choice are many and varied. However, as Steward (1968) puts it, vocational choice theories should in addition to the foregoing, embody some considerations related to personality, interest, aptitude, motivation, experience, training and preference.

(B) EMPIRICAL WORK

A number of investigations have been conducted in the area of occupational and educational development of people in and outside this country. Some factors that possibly influence occupational choice have been identified in these studies. A review of some of the major studies and the factors investigated will be presented in this section. It occurred to the present researcher that studies that try to relate personal characteristics with occupational choice were rather scanty.

It is hoped that more concern would be shown in this area of study because as Dewey (1918) points out, "the greatest social waste which exists at present is our failure to detect tastes, capacity and ability and find them channels in which they can operate with advantage to their possessors and the usefulness to others" (p. 17).

(a) Personality Type & Occupational Preferences:

Some studies have been designed to determine the accuracy of Holland's (1966) theory. According to Holland each of his six personality types (Realistic, Intellectual, Conventional, Social, Enterprising and Artistic) usually looks for occupational environment which is consistent with the needs associated with that type. Folsom's (1969) study represents one of such attempts. Folsom's sample consisted 1003 students of Maine University (554 males and 449 females). He used the college student questionnaires (CSQ) part I (Paterson, 1965). These Instruments provided a pool of information about the characteristics embodied in Holland's personality types as measured in the CSQ scales. It was considered that a study using CSQ data would be appropriate for investigating Holland ideas.

The results of that study supported Holland's personality formulations of the Intellectual, Conventional, Social, and Realistic. Quite less support was given to the Enterprising and Artistic personality types. However, Folsom (1969) concludes:-

> ".... the results of the present study indicate that Holland's description of six personality types are generally in agreement with the way students within the types describe themselves on the seven scales of the CSQ" (p.265).

The main aim of this investigation was to test the validity of Holland's personality types. The subjects were University students, more advanced in age and vocational experience than the subjects of the present study. These aspects notwithstanding, the necessity of using the individual differences found in personality characteristics to aid occupational planning tends to be embeded in Folsm's study, and also of interest to the present researcher.

(b) Personality and Vocational Interests:

One investigation into the relationship between personality and vocational interests is recorded in a book on Strong Vocational Interest Blank (SVIB) (Kunce & Callis: p. 34 & 35).

The sample were 630 male college students who had earlier taken the strong vocational Interest Blank and Minnesota Multiphasic Personality Inventory (MMPI). It was discovered that although individuals may have similar personality structures, they could have quite different vocational interests. In the light of these findings it was concluded that it did not appear feasible to infer occupational choice from personality.

However, it is the belief of the present researcher that the personality of an individual cannot be completely divorced from the sort of occupation he chooses. It is also felt that any sensible occupational planning, should, among other things, take the personality types of the individual concerned into account.

(c) Self-Concept and Occupational Preferences:

Super (1963) considers the desire to find expression for self concepts as a motivating factor in occupational choice. Extensive research conducted mainly outside and some within this country has demonstrated that people prefer occupations they regard as congruent with their self concepts.

(i) Englander (1950) Blocher and Schutz (1961) and Morrison (1962) have concluded from their studies in which Q-sorts and adjective checklists were used to measure self and occupational concepts, that students rated themselves more similar to occupations they prefer than to those occupations they did not like.

(ii) In another study, Oppenheimer (1966) examined the relationship between self - concepts and occupational preferences of 81 male Liberal Art students of Rutgers University. His results supported the theory that people who are dissatisfied with themselves will also be dissatisfied with occupationa that represent a translation of their self-concepts. There was also ample evidence from his findings to suggest that people with personal dissatisfaction are motivated to find expression for their ideal self - concepts rather than their actual self - concepts in making occupational choices.

(d) Ego strength and vocational choice:

Small (1953) studied the effects of the differences in ego strength on realism of vocational choice. He was stimulated to undertake the study by Roe's theory discussed earlier in this chapter. Small defined realism as having vocational goals which were compatible with personal qualifications. His subjects were adolescent boys aged between 15 and 19. These included a group of psychologically disturbed boys and another group of better adjusted boys.

Small found that the group of better adjusted boys made more realistic vocational choices than the disturbed boys did, even though both groups had sometime come for vocational counselling.

His study illustrated the effect of psychological adjustment on vocational choice. Small, however, centred his study around ego strength and the realism of vocational choice.

Some of the studies discussed above attempt to survey the concept of the "self" and the corresponding occupational preferences. They try to examine how the 'self' as an individual understands it, finds expression in or influences his occupational preferences. These studies further stress the need to understand some essential aspects of the individual's psychological make-up in order to appreciate his occupational preferences.

(e) Some Motivational Factors and Occupational Preferences

Variables like family, School, & Socio-economic factors and sex have been recognised to exert some influence on occupational choice (Crites, 1969; Friend and Haggard, 1948; Ginzberg et al, 1951; Super, 1953 & Roe, 1957) Hollingshead (1949) for example studied 528,000 eighteen year old adolescents in Elmtown to identify factors which influenced their career choices. He concluded that the adolescents ideas of desirable jobs or careers were mainly a reflection of their class, family and community experiences.

(i) Family Influences:

In Nigeria, Osawe (1975) surveyed the occupational interests of form five female students in Kano State. Her findings showed that many secondary school girls in Kano choose careers out of pressure from parents. That 25% of such choices in her study even involved occupations which are traditionally regarded as masculine.

Olayinka (1973) had earlier reached a similar conclusion. In a study of job aspirations and educational provisions in Lagos, he found that about 76.2% of his subjects relied on the advice of parents and other family relations for choice of future occupation.

(ii) School Education & Vocational Choice

A study in which the relationship between school Education and occupational choice were surveyed, was undertaken by Durojaiye in 1970. His subjects comprised 196 students, drawn from Form I to upper VI. in International High School, Ibadan. He found among other things, that 47.4% of his subjects chose occupations for academic reasons. Reasons like "it demands intellect", "Love of knowledge", "allows for continuous education", were given by the subjects for choosing occupations.

His samples were 50% Nigerian and 50% non-Nigerian. Their high level of occupational aspirations could also be attributed to the particularly rich environment surrounding the International High School, Ibadan.

(iii) Sex and Occupational preference

In a nationwide study of students career development, a sample of 32,000 8th, 9th and 11th grade students in 200 schools scattered in 33 states in America, were used. Prediger, Roth and Noeth (1973) found that sex-role stereotypes might have a significant influence on both exploratory occupational experiences and occupational preferences. For instance, 50% of the 11th grade girls as compared with only 7% of boys, chose occupations falling into clerical and secretarial educational and social services and Nursing and Human care occupational categories.

More boys than girls obtained higher scores for the technology and trade clusters.

Also in Nigeria, Olayinka (1973) studied the job aspirations of the youth and the educational provisions in Lagos state. His sample included 96 boys and 77 girls. His findings indicated, among other things, that the sex of the youth influences his/her preference for jobs. 23.3% of his female subjects and none of his male subjects chose medicene. On the other hand, only 3.8% female and 27.0% male subjects selected engineering.

These two studies really illustrate the role sex plays in occupational preferences. In the present study, both the expressed and measured occupational interests of subjects would be taken into consideration. The trends of the subjects preferences are discussed later in this study.

CHAPTER THREE

Social Background, Educational Provision and occupational Preparation in Secondary Schools, in Kano.

Kano has for a long time been a great commercial, industrial, religious and educational centre in Nigeria. It provides quite a rich and varied social and occupational background for youths studying in schools here. Most of the subjects of this study are of Kano State origin. A few of them, especially the female, who are not from Kano State, have spent at least five years in Kano to be able to understand the social and occupational features which characterise this environment. The main purpose of including this section is to highlight some of these basic social and occupational outlook and the current educational provisions available here.

(a) Social Background:

Kano exhibits three essential social patterns. These include the predominantly Moslem Hausa Population living in the city and also to a less extent, Tudun Wada, Gwagwarwa and Fagge quarters; the community of stranger elements comprising immigrants from the southern States of Nigeria. This set occupies Sabon Gari and Gwagwarwa areas mainly. The third group comprises expatriate communities, including Lebanese Traders and European workers.

In this third group can also be found a good number of Nigerian Senior Civil Servants. These people are mainly found in the township areas like Nassarawa, Syrian Quarters, Bompai and Fagge Quarters. What one can easily observe from the above patterns is that it is mainly in the City that racial and ethnic integration is not quite possible. Such that it is within the city that distinctive social orders and pattern of life, typifying the Hausa culture can still be found.

The Family:

In most of the predominantly Hausa occupied areas of Kano, the basic family Unit is the extended type. Within one family unit, the father, mothers, sons and wives live together in a large compound often divided into sections. Day to day activities tend to centre around the home. There is a rather rigid division of labour based on sex. The male members of the family engage in different sorts of work to maintain the family. Except in very rare cases, every family considers marriage, homekeeping and mothercraft as befitting occupations for the girl members of the family, Right from childhood they are taught the expected female roles. They learn to cook, care for the younger children and care for the house.

Families tend to specialise in some particular trades which they would want their male children to take over eventually and manage.

-These children spend quite some time with their fathers and elderly relatives engaged in these trades. They observe, imitate and later on participate in the trades.

These family units group to form the "Unguwa" (Halmet). The "Unguwa" is both a social and administrative division, with a population ranging between 1,000 and 10,000 people. It has a small Mosque and a small market along the main street.

Education:

Islamic Religion was introduced in Kano about 13th Century A.D. 99% of the two main ethnic groups (Hausa and Fulani) have Islamic affiliation (Paden, 1973). The Koranic school system which followed the introduction of Islam, has been in operation for centuries. The main feature of the Koranic School system is the study of the Holy Koran. There are very many of such schools in Kano. Children attend these schools from very early ages. The older children, especially those who stay with the Mallams away from their homes, do engage in minor jobs like cleaning, porterage and even street begging in order to collect some money to augment what they can get from home. Through this system of education, they learn to read and write in Hausa and Arabic.

Western education was introduced in Kano in about 1909, when the then Colonial Administration opened its first school in Kano for the whole of Northern Nigeria. It was only in 1931 that girls were introduced to western education.

Parents were greatly opposed to the western system of education which they consider rather worldly and materialistic in orientation. They equated western education with immoral living and a type of system that might turn the heart of the child from the Islamic doctrine. However, after the Nigerian Independence, western education started to receive a more encouraging attention in Kano.

The Primary School:

Children start the primary school at about the age of six. The primary school course lasts for seven years, at the end of which, the primary graduates obtain Primary Seven Certificate. During the first term of the 7th year also, the pupils take the Common Entrance Examination. Those who are successful are placed in Secondary Schools and Teacher Training Colleges in the State. Those who cannot pass the Common Entrance Examination or do not want to continue schooling after the primary school may look for jobs or join in the family business.

Primary School attendance in Metropolitan Kano is rather low when compared with what obtains in other major towns in Nigeria. Within Kano itself, variations in manner of attendance have been observed. The percentage of children attending primary school in the City is put at less that 10%, while over 90% is recorded for Sabon Gari.

The low percentage in the city is explained by the large number of children of primary school age still attending the Koranic Schools.

Comparatively very low percentage of primary school-age girls attend primary schools in the city than in Sabon - Gari area. Most of the young girls attend Koranic schools, some engage in petty trading. All the time most of them are groomed for marriage, a goal towards which every sensible girl is encouraged to aspire.

The Secondary School system:

Like the primary school, Secondary education has made a rather slow progress in Kano. This slow progress is mainly attributed to the reluctance of the predominantly Moslem Hausa parents in Kano to accept Western education fully. Some of the reasons for this apparent apathy to western education had earlier been given in this section but the whole picture can be well appreciated if one could imagine what the situation will look like if Islamic education were to be introduced in a community with a deeply commited christian affiliation. So, in spite of campaigns to enlighten parents to see the necessity of sending their children to school, most of them are still sceptical about the formal system of education.

There are about eleven secondary schools in Kano Metropolitan area.

These include, two girls' Secondary School, a Federal Government Secondary School , a Commercial College, School of Arabic Studies and six Secondary Grammar Schools. If compared with what the situation was ten years ago when states started functioning, one may say that much has been done in expanding secondary education in Kano state. In April, 1968, there were only nine secondary Grammar Schools and a Commercial School in the whole of Kano State. For the purpose of this investigation only the Secondary Grammar and the two girls Secondary schools were closely studied.

The orientation of the secondary school system in Kano, like elsewhere in Nigeria is mainly academic. Pupils start the Secondary School Course after the primary education and after passing the State Common Entrance Examination. The Secondary School curriculum includes subjects like English Language, English Literature, History, Geography, Islamic Religious Knowledge, Arabic, Hausa, Mathematics, Physics, Chemistry, and Biology. Some of the schools like, Kano Government College, also include Commercial subjects in its curriculum .

Hitherto, promotion to the next class has been automatic. During the second term of the fifth year, students take "MOCK" West African School Certificate Examination.

Uka's (1974) comment that Nigerian Schools are still being modelled after the British tradition, is equally true of the general secondary school pattern in Kano. As he observed, the major emphasis is on knowledge, western cultural values, and less stress on technical and practical skills. The main goal of both the school authorities and the students tend to be the West African School Certificate.

In a recently published report by the Kano State Educational Review Committee, it is stated that even from the last two years of primary education;

> "..... teaching is geared towards ..... external examination. The content of teaching is restricted to material likely to be questioned in the examination papers. ..... students at post primary institutions are usually busy working towards particular examination based on set syllabuses, a process which greatly restricts the method of teaching as well as the content" (1978, page 18)

In effect, it seems as if this trend may continue for sometime to come, not only in Kano State, but also in many parts of Nigeria.

One reads of attempts on paper and policy statements to make secondary education meet the needs and realities of a developing society. Yet, the continuing design and organisation of teacher education still follow the old 'academic' pattern, which is bound to perpetuate the state of affairs one observes in our secondary schools.

Occupational Preparation of the Secondary School Students in Kano:

The foregoing discussion could enable one to have a glimpse of the position of students in the secondary school vis-a-vis occupational preparation. Not much is done in the secondary schools to ensure subsequent occupational competence of the students. In almost all the secondary schools, Guidance Services have not yet been formally introduced. Only one of the secondary school visted in the course of this study had a recognised Carcer Master. Principals of some secondary schools try to arrange a rather skeletal vocational counselling of some form mainly for the final year students. Career conferences and symposia are organised during which students can ask for information concerning some occupations. Occasionally quest speakers are invited to discuss with students, job opportunities available in certain sectors of the economy.

In addition, personnel from certain professions institutions and establishments, like the police, the army, companies, industries and so on, do visit the secondary schools to enlighten students about career prospects in their respective places of work.

Apart from these types of arrangements, a systematically well planed programme, specifically geared to cater for and enhance the vocational development and aspirations of the secondary school students, hasn't yet been evolved either in Kano state or throughout the country. As noted earlier, the main goal of the secondary school students is the West African School Certificate of the General Certificate of Education(O/L). If he can get a good one, then he hopes to get a job or get into institution of higher learning after leaving the school.

It follows, therefore that although the students may indicate their occupational preferences while at school, it is only after he has left the secondary school that he actually thinks seriously about work.

Another side of it is that due to lack of and/or poor vocational guidance services in these schools, students sometimes choose subjects and aspire towards occupations not in keeping with their actual interests. Moreover, some of the students here aspire towards their family businesses into which they get absorbed on completion of the secondary school course.

The Process of Occupational Choice in Kano.

After the secondary school course a graduate who cannot continue further with higher education and who does not opt for a family business set-up, tries to get employed at the first opportunity. The job he takes on may not be among the occupations towards which he indicated some preference while still at school. If he becomes dissatisfied he may think of this first job as a stepping stone to something else more satisfying which he hopes to get someday. Some of the school leavers interviewed by the researcher indicated that they would first have a period of trying-out with their first occupations, if they weren't satisfied, they could look for something else. matter the position, they would at least want to have something to start with after leaving school. Some of them, on the other hand, felt that they would want to continue schooling, but would like to work for a year or two before that.

A secondary school leaver may obtain his first job by sheer chance or accident. Nigerian Newspapers often carry advertisements of vacancies existing in certain setups. Such advertisements usually indicate the post to be applied for, academic qualifications required, experience, sometime age limit desired and the closing date to send in application.

After going through such advertisements, the school leaver sends in his applications to one or two (and sometimes more) prospective employers, as directed by the advertisements. He then waits for something to turn up. Depending on where his applications go to, the period of waiting may not be as long as what obtains especially in some of the states in the southern part of Nigeria. Companies and industries which exist in abundance in Kano, tend to be faster in such cases.

He is later called to attend a pre-employment interview. In most cases he gets employed by any establishment that is the first to offer him appointment. What he finally gets may not be a job he really likes, but he may have to accept by force of circumstance.

Also, a school leaver here tries to get a job through the Labour Office. In Kano, like in most other urban centres in Nigeria, the Labour Office operates as a public occupational placement agency. At the Labour Office, the applicant gets registered by completing a form in which he states his first and second choice of occupation, age, educational qualifications, previous experiences, state of origin and so forth. He is later given a date on which to report back at the Office to renew his registration, if by that date, he hasn't got any offer of employment.

In Kano, the Labour Office tends to serve secondary school drop-outs and primary school leavers much more than the secondary school leaver, who can get much more readily employed without reaching the Labour Office. What one may conclude from the discussion above is that the secondary school leaver in Kano, and infact many job seekers of that level in Nigeria, have negligible chances of making realistic choices of occupation. One may however wish to state here that a more meaningful approach to the whole process of occupational preparation and choice, at the secondary school level, must have to be sought for. The approach envisaged should make the secondary school students much more aware of what obtains in the world of work. Their final occupational placement should at least take into account, their interests and vocational inclinations.

CHAPTER FOUR

RESEARCH PROCEDURE

The desire to study the relationship between some personal characteristics of the secondary school students who were about to complete secondary education, and their occupational preferences formed the background of this investigation. For the past twenty - five years, many studies as to occupational and educational aspirations have been undertaken, both in and outside Nigeria, (Slocum, 1966; Roe, 1956; Durojaiye, 1970; Okeke, 1973, Olayinka, 1973). Several theories have also been formulated relating certain characteristics of the individual to his eventual occupational choice.

It has been discussed in the preceding chapters that even if restrictions on freedom to choose occupations exist, the personal characteristics of the individual influence his occupational choice in one or the other way. If his broad personal characteristics are studied, it may be possible, at least, to identify occupational areas, into which the individuals' occupational aspirations may be much more usefully channelled.

In view of the employment outlook in many parts of the country, it is obvious that many secondary school leavers may not find it easy to pursue careers in the occupations of their first preference. It would therefore be valuable to point out comparably similar occupational groups to them vis-a-vis their personal characteristics. As the problem appears rather complex, certain assumptions and limitations are necessary in the design of this study.

Bordin (1943) proposed that the way an individual responds to an interest inventory indicates, to a large extent, how he considers himself in terms of occupational stereotypes. The preliminary phase of a study undertaken by Blocher and Scutz (1961) lends support to Bordin's position. Douglas Whitney (1969) has, on the other hand, expressed the view that the individual's expressed vocational choice predicts his future employment as interest inventories do.

The first hypothesis was therefore formulated to test the compatibility of expressed and measured occupational preferences.

Hypothesis I

There is a significant relationship between the expressed occupational interests of the subjects and their occupational preferences as measured by the Rothwell - Miller Interest Blank.

Nelson (1963) and Meyer (1960) emphasised the point that the patterns of occupational interests differently develop in men and women. In empirical studies, (Traxler and McGall 1941, Triggs, 1943), it was found that women show greater interest in literary, Musical, artistic categories. One can therefore expect similar sex differences in the occupational preferences of Nigerian boys and girls studying in secondary schools.

Hypothesis II:

There are sex differences in occupational preferences of Nigerian secondary school leavers.

Some studies have attempted to establish a relationship between occupational interests and personality characteristics, (Callis and West, 1964). Kunce and Callis (1969) concluded after an extensive study that it is possible to make tentative inferences about global personality characteristics from vocational interest scores. Also, Eysenck and Cookson (1969) found that introverts tend to aspire towards Scientific achievements, extraverts towards linguistic attainment.

If the findings of Eysenck and Cookson (1969) have a validity in the Nigerian context, it can be expected that Nigerian introvert school leavers would indicate different occupational preferences from those of extraverts. The following hypothesis was therefore formulated.

Hypothesis III:

Less extravert subjects prefer Scientific occupations while more extravert subjects prefer Persuasive occupations.

Hopson and Hayes (1968) have proposed that intelligence differentiates groups of jobs and that a certain minimum for the job may be a factor of success, especially in intellectual work, and those that require intensive training. It follows therefore that some occupational areas make more intellectual demands on the individual than others. Furthermore, the lay man at times associate scientific occupations with high intelligence and persuasive occupations with low intelligence. The fourth hypothesis attempted to find out the validity or otherwise of such assumptions.

Hypothesis IV:

Subjects who select scientific occupations are more intelligent than subjects who select persuasive occupations.

Population and Subjects.

The population for this study was made up of boys and girls who were studying in Form Five of secondary schools in Kano. From a total of ten schools, six were randomly chosen for this investigation.

From the population of pupils in Form Five, 140 pupils (80 boys and 60 girls) were randomly selected as shown in Table I. Their ages ranged between fifteen and twenty-two years, with a mean age of 18.5 years.

TABLE I

Schools and Subjects Covered

Name of School	Desig-nation	Type	No of Subjects
Gov't College, Kano	GCK	Boys	30
Gov't Sec. Sch., Gwale	GSSG	Boys	20
Bagauda Gov't S. S. Kano	BGSS	Boys	15
Ahmadiya Sc. Sch., Kano	ASSK	Boys	15
Gov't Girls Coll., Dalla	GGCD	Girls	30
St. Louis Sec. Sch., Kano	SLSS	Girls	30

Instruments:

The following instruments were used for this enquiry: the Rothwell - Miller Interest Blank (1968 edition) RMIB; the Eysenck Personality Inventory, (EPI); the Raven's Standard Progressive Matrices (RPM). The above instruments were used to take the measures of interest, extraversion dimension of personality and non-verbal intelligence of the subjects.

(c) The Rothwell - Miller Interest Blank (1968)

The Rothwell - Miller Interest Blanks (1968) for male and female occuaptional categories were used. This instrument consists of twelve stereotyped categories of occupations designated Outdoor, Mechanical, Computational, Musical, Social service, Clerical, Practical and Medical. These twelve categories are considered reasonable enough to cater for a wide area of occuaptional interests. The occupational resprcsentativ of each group has been assembled in nine blocks. Each block contains twelve different occuaptions, with one occupation representing each of the twelve occupational categories. In each block, the twelve occupational categories are represented by twelve occupational titles. The arrangement is such that each job in the block advances one positon in the next block. For instance, the occupation in the first block (A) falls under the category of outdoor; in the next block the occupation under outdoor is placed in the second position. According to Rothwell and Miller (1968) such an arrangement "makes it unlikel that the interest score will reflect a tendency to favour any particular position in each block" (P.4).

Most of the occupational categories given in Rothwell - Miller Interest Blank correspond with occupational categories available in Nigeria. (For further details of the blanks, see Appendix Ia & Ib.).

(ii) The Eysenck Personality Inventory (EPI)

The Eysenck Personality Inventory is said to have been constructed on the basis of Eysenck's theory of personality (Fantino & Reynolds, 1975). EPI form A was used for this study. This contains 57 questions which are in yes/No form. Most of the questions are of highly intimate nature that touch on the subject's activities, views about himslef, his relations with other individuals and groups.

Though EPI was designed according to Eysenck's personality theory, it has been validated experimentally. Many investigators have used this inventory to measure the extraversion/introversion personality dimension (Lovegrove, 1975; Kline 1966)

(iii) The Raven's Progressive Matrices (RPM)

In the Raven's Progressive Matrices, problems are presented in a carefully devised way, and the subject's competence is compared with the competence displayed by others in the same task, presented in the same way (Rodger, 1939). The test contains sixty problems divided into five sets of twelve.

The first problem in each set is fairly straight forward. Problems which follow are progressively more difficult. Every subject taking this test is cofronted with the same series of problems and in the same order. He is encouraged to work on his own without interruption from the beginning to the end of the scale. The total score obtained by the subject is taken as an index of his intellectural capacity.

According to Raven (1938), "the standard Progressive Matrices is a test of a person's capacity at the time of the test to apprehend meaningless figures presented for his observation, see the relations between them, conceive the nature of the figures and by so doing, develop a systematic method of reasoning" (P.1).

The RPM has been used in Nigeria for the purpose of measuring non - verbal intelligence of subjects, with satisfactory results (McCarthy, 1974).

(iv) The Questionnaire

A questionnaire was also constructed so that some other relevant expressed information could be obtained. Through this means, it was possible to elicit the subjects' expressed occupational preferences which were used for comparison with their measured preferences.

Whitney, (1969) has expressed the view that an individual's expressed occupational choice indicates both his interest and results from a complex interaction of background and personal characteristics. He has even gone further to suggest that an individual's expressed occupational choice, that is,

> "..... What he says he plans or would like to do - can be used for the same purpose as an alternative to inventories" (P.283).

Besides, it was possible to determine the extent to which expressed occupational preferences were realistic in terms of major subjects offered and the level of achievements,in those subjects. (For further details about the questionnaire refer to Appendix IV.)

(v) Administration of Instruments:

A letter of introduction from the Dean, Faculty of Education, Bayero University Kano, was first given to each of the principals of the secondary schools covered in this study. Dates, on which the researcher was to visit each school were arranged with each principal. Two days were fixed for each school, but not consecutively.

On the first day in each school, the main purpose of the investigation was briefly explained to the sbujects. After that they were given the questionnaire and later, the Raven's Progressive Matrices to complete. A brief explanation on how the questionnaire was to be completed was given.

The subjects were seated in one of the classrooms and were asked to complete the questionnaire truthfully. They were to refer any aspect of the questionnaire they did not understand for further explanation where necessary. The questionnaire were collected after the subjects had completed them.

After this, on the same day, the RPM were distributed to each of them. They were shown how they were to record their answers on the answer sheets which were also given to them. They were asked to work fast through the exercises. The subjects finished the task between twenty-five and forty-five minutes, with an average time of 37 minutes.

On the second day in each school, the same subjects were asked to complete the Rothwell - Miller Interest Blank. Male subjects completed the Blanks containing male occupations, while female subjects completed the blanks with female occupations.

The instructions on the Blanks were read and explained. They were advised to refer to the glossary for the explanation of the less familiar jobs. Still, any job not considered familiar in the Nigerian context and which are not listed in the glossary, was further explained to enssure a meaningful exercise. They were asked to complete the blank independently. After they had finished with the interest blanks, a copy of the Eysenck's Personality Inventory (EPI) was given to each subject to complete. The instructions on the EPI were read and explained to them by the reseacher. They were asked to work quickly through the inventory as a record of their first impressions was important for the study. Any subject who experienced any difficulty in the course of completing the inventory was to raise his/her hand for further help if necessary. Completed copies of the inventory were handed in at the end of the exercise, after the subjects had checked for mistakes and omissions.

(vi) Scoring Procedures:

(a) The Rothwell - Miller Interest Blank (1968). The Rothwell - Miller Method of scoring was used. The ranks from the blocks were transfered to the tabulated section at the end of the blank.

The rows were then totalled. The lowest total indicates an occupational category in which the individual concerned shows a high preference. The totals were further ranked 1st, 2nd, 3rd and so on, 1st corresponding with the lowest total and twelfth corresponding with the highest total, recorded for the the same individual. (See Appendix 1A & 1B; for further details).

(b) The Eysenck Personality Inventory.

The scoring key of Eysenck and Eysenck (1964) was used. The number of items each subject answered in the direction of extraversion were recorded. Extraversion scores ranged between 0 and 24. (see Appendix ii for other details).

(c) The Raven's Progressive Matrices.

The subjects responses to the RPM were scored according to the scoring procedure given in the mannual of the RPM (Raven, 1956). A correct answer scores one numerical unit and scores on the RPM range between 0 and 60. (See Appendix iii for the scoring key).

CHAPTER FIVE

RESULTS AND DISCUSSION OF RESULTS

Hypothesis I

In order to determine the relationship between the subjects' first expressed Occupational interests and first measured occupational preferences, frequencies under "Correspondence" and "no correspondence" were compared for the total sample as well as for groups of males and females (N = 140; Male = 80, Female = 60), by applying the Sign Test separately. Some details are given in Table 2, but full details are shown in Appendix v.

Table 2.

Frequencies of expressed and measured occupational preferences of 140 subjects with the values of z.

Group	N	Correspondence (+)	No Correspondence (-)	Z	Sig.
Total Sample	140	51	89	3.296	NS
Male	80	32	48	1.90	NS
Female	60	19	41	2.97	NS

Table 2 clearly shows that there is no significant relationship between the expressed and measured occupational preferences.

Hypothesis II

In order to ascertain sex differences, the frequencies under each occupational category for boys were compared with those of the girls, by computing the value of Z.

Table 3

Frequencies and percentages of male and female occupational choice.

Category of occupation	Boys (N=80)		Girls (N=60)		Z
	f	%	f	%	
Outdoor	2	2.50	0	0	1.232
Mechanical	2	2.50	0	0	1.232
Computational	11	13.75	1	1.67	2.53*
Scientific	19	23.75	9	15.0	1.28
Persuasive	14	17.50	12	20.0	0.576
Aesthetic	2	2.50	3	5.0	0.789
Literary	11	13.75	6	10.0	0.672
Musical	3	3.75	2	3.33	0.132
Social service	3	3.75	8	13.33	2.083*
Clerical	5	6.25	1	1.67	1.323
Practical	0	0	0	0	-
Medical	8	10.0	18	30.0	3.01**

*P $<$ .05

**P $<$ .01

The values of Z, as shown in Table 3, showed that sex differences exist in Computational, Social Service and Medical occupations. Boys tended to be more interested in Computational catetory, whereas girls tended to be more concerned with Social Service and medical categories of occupations.

Hypothesis III

On the basis of their scores on the Eysenck Personality Inventory (EPI), the subjects were classified under two groups, less extravert(N = 81; their scores ranged from 1 to 12, with $\bar{X}$ = 9.16); and more extravert (N = 53; their scores ranged from 13 to 24, with $\bar{X}$ = 14.18). The frequencies of their choices of Scientific and Persuasive occupations are given in Table 4 below:

Table 4

Scientific and Persuasive Occupational Preferences of more and less extravert subjects.

Group	Total	Scientific	Persuasive	X^2: df=1
Less extravert	81	43	38	
More extravert	53	25	28	0.243
Total	134	68	66	

In order to know if a significant difference exist between the less and more extravert subjects in their choices of Scientific and Persuasive occupations, the frequencies under

less extravert and more extravert groups were analysed by applying the Chi-square Test. The results obtained are summarised in Table 4. From the results, it can be concluded that no significant difference exists in the choice of Scientific and Persuasive occupations by the less extravert and more extravert subjects.

The hypothesis that there is a significant difference between less and more extravert subjects as to their scientific and persuasive occupational choices was therefore rejected.

Hypothesis IV

To see if any significant difference exists between the intelligence level of the subjects who select Scientific and those who select Persuasive occupations as first preference, their scores on the Raven's Progressive Matrices (RPM) were computed for boys and girls together (N = 54) and then separately for the boys (N = 33) and girls (N = 21). A t - test was used to compare the mean RPM scores. The results are shown in Table 5.

Table 5

Comparision of mean RPM scores of subjects who choose Scientific occupations with those who choose Persuasive occupations as First Preference.

GROUP		n	$\bar{X}$	SD	t
Boys & Girls	Scientific	28	42.14	10.15	1.126
	Persuasive	26	39.46	7.22	
Boys	Scientific	19	40.84	11.56	0.051
	Persuasive	14	41	5.95	
Girls	Scientific	9	45.33	5.35	2.349*
	Persuasive	12	37.67	8.09	

*significant at .05 level

A close examination of the data in Table 5 revealed no significant differences between the mean RPM scores of boys who showed interest in scientific occupations and that of those who were found to be interested in Persuasive occupations. A significant difference however existed between the mean RPM scores of girls under the two occupational categories.

DISCUSSION OF THE RESULTS.

Expressed and measured occupational preferences.

The findings of this study revealed a lack of significant correspondence between the subjects expressed occupational interests and their occupational preferences as assessed by the interest blank. These findings were not in line with Whitney's (1969) results which indicated that in general, a person's expressed vocational choice predicts his future employment about as well as inventoried interests. In the light of the present findin s it would be equally unsafe to accept Whitney's conclusion that the individual's expressed choice could be used as an alternative to inventoried interests, here in Nigeria.

This lack of correspondence between the expressed and measured occupational preferences may largely be attributed to the subject's poor knowledge of the world of work and the inadequate provision for occupational preparation in most secondary schools used in this study. Noeth, Roth and Prediger (1975) had earlier reached a similar conclusion. It seems that many secondary school pupils choose careers with a limited knowled e of the world of work. There are a number of other variables which in one or the other way influence the expressed occupational choices of young Nigerian secondary school leavers. These include wishes of parents and other relations, salary and prestige attached to the occupations.

Sex Differences and Occupational Preference.

The findings of this investgation as to sex differences in occupational preferences showed some patterns of occupational preferences; girls indicated disliking for outdoor, practical and mechanical occupational categories. None of the female subjects chose these occupational categories; the occupations they mostly prefered fell under "Medical", "Persuasive", "Social Service" and "Scientific" categories. It was quite interesting to note that only a very small percentage of the female subjects selected clerical occupations as first choice. This is an occupational area that is traditionally considered suitable for girls who enter the world of work after secondary education. A greater number of the male subjects selected clerical work as their first choice.

The definite reason for this kind of unexpected opposite trend is not yet known. One can attribute it to cultural expectations prevailing in the Northern States of Nigeria. Muslem girls are not generally expected to work in offices; their respectable place is in the home where they are expected to manage household affairs. If a similar study is carried out in the Southern part of Nigeria, results may be of different character.

Among the male subjects, the occupational categories mostly prefered were "Scientific", "Persuasive", "Computational" and "Literary". Only 10% of the males selected "Medical" as first

preference. Also, they did not show much liking for "Practical" occupations either. None of the male subjects selected it as his first preference.

Also, contrary to one's expectations, a very small percentage of the males selected "Mechanical" and "outdoor" occupations as their first preference. This apparent lack of interest in "Mechanical" occupations may, in part, be attributed to most male subjects' apathy to mathematics which most of the schools covered tended to be performing rather poorly in both "Mock" and the West African School Certificate Examinations.

The findings are in line with those of a recent study (Maqsud, 1978) carried out in Kano. Maqsud's small scale study also revealed disliking of secondary school leavers in Kano for occupations coming under mechanical and outdoor categories. Maqsud emphasised that these findings are very alarming because Nigeria already lacks technical manpower and largely depends on expatriates' service. He suggested curriculum reforms in order to develop the interests of secondary school pupils in mechanical and farming - type activities.

Personality and Occupational Preference.

It would be recalled that only the dimension of extraversion was considered in this study. The assumption was that less extravert subjects prefer scientific occupations than more extravert subjects do and that more extravert subjects prefer persuasive occupations than the less extravert subjects.

Eysenck and Cookson (1969) had found that introverts aspire towards scientific occupations and extraverts towards linguistic achievements. The results of this enquiry did not substantiate the findings pr sented by Eysenck and Cookson. The frequencies of choices of the Scientitic and Persuasive occupations made by less and more extravert subjects did not differ significantly.

The responses of the subjects of this study to the Rothwell & Miller Interest Blank greatly depended on the conceptual framework they have formed about various occupations in the Nigerian world of work. Nigerian youngsters in this study are not yet fully aware of the nature of occupations under the scientific category because Nigeria is not an industrial country and not many people really follow scientific occupations. Eysenck's hypothesis that introverts tend to prefer scientific occupations more than extraverts can really be tested by administering the EPI to people who are already in the occupations coming under scientific and Persuasive categories and comparing their scores on the E - scale.

Intelligence and Occupational Preference.

It was predicted that the mean RPM scores of the subjects who chose scientific occupations would significantly differ from that of those who selected persuasive ones. The variable of intelligence was not found to be related to scientific and

persuasive occupational choices of boys whereas the mean RPM score of girls who chose scientific occupations was found significantly higher than that of those girls who selected persuasive occupations.

It should be pointed out, however, that far fewer number of girls than boys selected scientific occupations as first preference, while almost the same number of boys and girls (14 and 12 respectively) selected Persuasive occupations as first preference.

In this connection, it may be said that in addition to the consideration of sex in selecting occupations that belong to the scientific category, it seems to the researcher that girls tended to have exercised a lot more caution than boys in ther selections. For instance, they tended to avoid such jobs in this category that would require too much physical exertion or make much intellectual demands.

CHAPTER SIX

SUMMARY AND CONCLUSIONS

Several occupational psychologists within and outside this country have drawn the attention of researchers to the impact of personal characteristics, such as interest, personality types, intelligence and sex, on occupational pursuits. Some conflicting findings have resulted from most of these studies. This researcher was therefore inspired to collect empirical data and specifically examine the relationship between interest, personality type (Introversion/extraversion) intelligence, sex and occupational preferences of secondary school leavers in Kano City.

The measuring Instruments used in the study were the Rothwell - Miller Interest Blank; the Eysenck Personality Inventory (Form A) and the Raven's Standard Progressive Matrices. These were used to measure the variables of occupational interests, personality type (introversion/extraversion) and the intelligence levels of the subjects respectively. A questionnaire was also used to find, among other things, the expressed occupational interests of the subjects.

From the findings of this study, the disparity between the expressed and measured occupational interests of the subjects was seen.

The results obtained in this respect failed to substantiate Whitney's idea that expressed occupational interests could be used in place of inventoried interest to predict a person's future occupation.

It was found that the subjects of this study virtually ignored the practical category of occupations in their selections. This tendency appears to have stemmed from the over emphasis on academic activities in Nigerian Secondary schools. These tendencies are really alarming. It is suggested that the secondary school curriculum and the examining bodies should stress both the academic subjects and training in practical skills like carpentry, bricklaying, painting, cookery, leatherworks etc. Adequate provisions should be made to facilitate the teaching of these practical skills in the secondary schools. This should be done in such a way that each student learns at least one practical subject in addition to the academic subjects he intends to offer in the West African School Certificate Examinations.

The choices by the less and more extravert subjects of Scientific and Persuasive categories of occupation did not differ significantly. The results obtained in this respect made the researcher accept the conclusions reached by Kunce and Callis that it does not appear feasible to base occupational choice on personality type, per se.

Guidance practitioners should therefore take other relevant variables into consideration before indicating which occupational areas could be suitable for their clients.

Contrary to our belief that more intelligent people tend to engage themselves in Scientific occupations, the data of this study indicated no significant relationship between the level of intelligence and occupational choice. These result led us to believe that secondary school leavers do not take occupational choices in view of their intellectual capacities, but that they tend to choose occupations on their prestige values and their own knowledge of stereotypes.

As to sex differences in occupational choices, the female subjects of this study tended to choose more frequently occupations falling under the Medical, Persuasive, Scientific and Social Service categories. Whereas their male counter parts tended to choose more frequently the occupations associated with the following categories Scientific, Persuasive Computational and Literary. These sex differences were greatly attributed to cultural expectations prevailing in Northern Nigeria.

Occupational choice is a complicated process. Guidance practitioners should try to get as much information as they can when they are counselling clients on occupational areas they can choose from. They should bear in mind that cultural expectations play a vital role in their occupational persuits. Finally it is stressed that the secondary school curriculum should be broad enough to cater for both theoretical and practical activities.

BIBLIOGRAPHY

1. Ackoff, R. L. (1953) The design of social Research. Chicago: University of Chicago Press.
2. Anastasi, A. (1958) Differential Psychology: Individual and Group Differences in Behaviour (3rd Ed); The Macmillan Company U.S.A.
3. Becher, H.S. and Carper, J. W. (1956) The Development of Identification with an occupation. American Journal of Sociology. 61, 289 - 298.
4. Beilin, H (1955) The Application of General Developmental Principles to the vocational area. Journal of Counselling Psychology, 2, 53 - 57
5. Blocher, D.H. and Schutz, R. A. (1961) Relationships among self - descriptions, occupational stereotypes and vocational preferences. Journal of Counselling Psychology. 8, 314 - 317
6. Bordin, E. S. (1943) A Theory of vocational Interests as Dynamic Phenomena. Education and Psychological Measurement, 3, 49 - 65.
7. Bordin, E. S., Nachmann, B and Segal, S. J. (1963) An Articulated Framework of vocational Development. Journal of Counselling Psychology, 10, 107 - 116.
8. Brayfield, A. H. (1961) Vocational Counselling today. In E.G. Williamson (Ed) Vocational Counselling: A Reappraisal in Honour of Donald G. Paterson. Minneapolis: University of Minnesota Press 22 - 59
9. Brophy, A. L. (1959) Self, Role and satisfaction Genetic Psychology Monographs. 59, 263 - 308
10. Burchinal, L. G. (1962) Career Choices of Rural youth in a changing society. Minneapolis: Minnesota.

11. Callis, R., West, D. & Ricksecker, E. (1964) The counsellor's Handbook: Profile Interpretation of the story of the Strong Vocational Interest Blanks, Urbana: R. W. Parkinson & Associates.
12. Carkuff, R. R., Alexik, M., & Anderson, S.(1967) Do we have a theory of vocational choice? Personnel and Guidance Journal, 46, 335 - 345.
13. Coleman, J. C. (1969) Psychology and Effective Behaviour.
14. Crites, J. O. (1969) vocational Psychology: The study of vocational behaviour and development. McGraw-Hill Book Company.
15. Darley, J. G., & Hagenah, T.(1955) Vocational Interest Measurement. Minneapolis: University of Minnesota press.
16. Dewey, J(1918) In vocational Education for Rural America, year Book, Dept of Rural Education Association of the U.S. Washington, 6 D.C. 1959.
17. Dillon, F. H.(1949) The Relationship between basic Motivation and choice of teaching as a profession. Unpublished Doctoral dissertation, University of Chicago.
18. Drever, J. (1952) A Dictionary of Psychology. Penguire Books.
19. Durojaiye, M.O.A (1970) School Education and occupational choice. West African Journal of Education, XIV, 1, 60 - 64.
20. Empey, L. T.(1958) Role expectations of young women regarding marriage and a career. Marriage and Family living, 20, 152 - 155.
21. Englander, M.(1960) A psychological Analysis of vocational choice: Teaching. Journal of Counselling Psychology. 7, 257 - 264

22. Eysenck, H. J & Cookson, D(1969) Personality in Primary School children: Ability and Achievement. The British Journal of Educational psychology, 39, 109 - 122.

23. Eysenck, H. J & Eysenck, S. B. G(1963) Eysenck Personality Inventory (Form A). San Diego, Calif: Education and Industrial Testing Service.

24. Fantino, E. & Reynold, G. S.(1975) Introduction to Contemporary Psychology, W. H. Freeman & Co. San Francisco.

25. Folsom, C. H. Jr(1969) An Investigation of Holland's theory of vocational choice. Journal of Counselling Psychology, 16, 260 - 266.

26. Friend, J. G. & Haggard, E. A(1948) Work adjustment in Relation to Family Background. Applied Psychology Monographs, No. 16.

27. Froelich, C. P & Hoyt, K. B.(1959) Guidance testing and other student appraisal procedures for teachers and counsellors.

28. Gilger, G. A. Jr (1942) Declarations of vocational Interests Occupations, 20, 276 - 279.

29. Ginzberg, E., Ginsburg, S. W., Axelrad, S & Herma, J. L(1951 Occupational Choice. New York: Columbia University press.

30. Hamrin, S. A & Paulson, B. B (1969) Counselling adolescents.

31. Heim, A (1970) Intelligence and Personality: Their Assessment and relationship.

32. Hewer, V. H (1963) What do theories of vocational choice mean to a counsellor? Journal of Counselling Psychology, 10, 118 - 125.

33. Holland, J. L. (1959) A theory of vocational choice Journal of Counselling Psychology, 6, 35 - 44.
34. Hollingshead, A. B. (1949) Elmtown's youth. The impact of social class on adolescents. N.Y. Willey
35. Hoppock, R. (1967) Occupational Information, 3rd ed. New York: Harper & Row.
36. Hopson, B. & Hayes, J (1968) The theory and Practice of occupational Guidance - A Selection of Readings.
37. Isaacson, L. E. (1967) The Psychology of vocational choice. Personnel and Guidance Journal, 46, 303 - 304.
38. Ivey, A. E & Morrill, W. H (1968) Career process: A new concept for vocational behaviour. Personnel and Guidance Journal, 46, 644 - 649
39. Jersild, A. T. (1963) The Psychology of Adolescence: New York Macmillan.
40. Kano State Educational Review Committee: Report (1978)
41. Kunce, J. T. & Callis, R(1969) Vocational Interest and Personality. Vocational Guidance Quarterly, 18, 35 - 41.
42. Kuvlesky, W. P & Bealer, R. C. (1966) A clarification of the concept, "Occupational Choice". Rural sociology, 31, 265 - 276.
43. Levine, P. R & Wallen, R.(1954) Adolescent vocational Interests and later occupation. Journal of Applied Psychology, 38, 428 - 431.
44. Lovegrove, M. N. (1975) Extraversion, Neurotism and ability amongst Ibo students. West African Journal of Education and vocational measurement. 2, 1, 29 - 34.
45. McCarthy, M. (1974) The Standard Progressive Matrices: A Pilot study in a Nigerian Technical College. West African Journal of Education, 18, 1, 67 - 75

46. Maqsud, M. (1978) Educational and occupational Interests of male secondary school leavers in Kano State of Nigeria. Educational Forum, 4 (in Press).

47. Meyer, M.M. (1969) Patterns of perceptions and Attitudes toward traditionally masculine and Feminine occupations through childhood and adolescence. Ed.D Thesis, Michigan State University.

48. Morea, P. C. (1972) Guidance, Selection and Training: Ideas and application. Routledge & Kegan Paul.

49. Morrison, R. L. (1962) Self - Concept Implimentation in occupational choice. Journal of Counselling Psychology, 9, 255 - 260.

50. Nelson, R. C. (1963) Knowledge and Interests concerning sixteen occupations among Elementary and Secondary school students. Educational and Psychological Measurement 23, 741 - 751

51. Noeth, R. J. (1975) Student Career Development: Where do we stand? Vocational Guidance Quarterly, 23, 210 - 218.

52. O'Hara R. P & Tiedeman D. V (1959) Vocational self-concepts in adolescence. Journal of Counselling Psychology, 6, 292 - 301.

53. Okam, E. C. N (1966) Careers in Nigeria. Evans

54. Olayinka, M. S. (1973) Job aspirations of youth and the Educational provisions in Lagos. West African Journal of Education, 17, 1, 41 - 49.

55. Oppenheimer, E. A. (1966) The relationship between certain self constructs and occupational preferences. Journal of Counselling Psychology, 13, 191 - 197

56. Osawe, R. K.(1975) A survey of occupational Interests of Form Five Female students in Kano State. Unpublished B.A(Ed) Thesis, A.B.U. Zaria.

57. Paden, J. N. (1973) Religion and political culture in Kano. University of California press, Berkeley.

58. Paterson, D. G & Darley, J. G.(1936) Men, women and Jobs. Minneapolis: University of Minnesota press.

59. Peters, H. J & Hansen, J. C.(1977) Vocational Guidance and Career Development: select readings (3rd ed).

60. Raven, J. C. (1966) Standard progressive matrices, sets A, B, C, D, & E.

61. Raven, J. C. (1960) Guide to the Standard Progressive Matrices sets A, B, C, D & E. (William, Grieve & Sons)

62. Roe, A (1956) The psychology of occupations. New York: Wiley.

63. Roe, A (1957) Early Determinants of vocational choice Journal of Counselling Psychology, 4, 212 - 217.

64. Shaffer, L. F., & Shoben, E. J. (1956) The Psychology of adjustment, Boston: Houghton, Miffhis.

65. Shertzer, B & Stone, S. C.(1971) Fundamentals of Guidance. Houghton Miffin Co. Boston.

66. Shuval, J. T.(1963) Occupational Interest and Sex-role congruence. Human relations, 16, 171 - 182

67. Siegel, C. L. F (1973) Sex differences in occupational choices of second Graders. Journal of vocational behaviour, 3, 15 - 19

68. Slocum, W. L. & Bowles, R. T.(1968) Attractiveness of occupations to High School Students. Personnel and Guidance Journal, 46, 754 - 761

69. Small, L (1953) Personality determinants of vocational choice. Psychological Monographs, 67(1, whole No. 351)

70. Super, D. E. (1953) A Theory of vocational Development. American Psychologist, 8, 185 - 190

71. Super, D. E. (1956) Vocational Development: The process of compromise or synthesis. Journal of Counselling Psychology, 3, 249 - 153.

72. Super, D. E. (1957) The Psychology of Careers. New York: Harper of Row.

73. Super, D. E. & Crites, J. O. (1962) Appraising vocational Fitness (Rev. ed) New York: Harper & Row.

74. Super, D. E. (1963) The definition and measurement of early career behaviour: A first formulation. Personnel and Guidance Journal, 41, 775 - 780

75. Stewart, J. A. (1968) Vocational choice theories - Helps and Hazards for practitioners. The School Counsellor, 16, 103 - 107

76. Terman, L. M. (1954) Scientists and Nonscientists in a group of 800 gifted men, Psychological monographs, 68, (whole No. 378)

77. Thoresen, C. E., & Mehrens, W. A. (1967) Decision theory and vocational counselling: Important concepts and questions. Personnel and Guidance Journal, 46, 165 - 172

78. Tiedeman, D. V. (1961) Decision and vocational development: Paradigm and its Implications. Personnel and Guidance Journal, 40, 15 - 21.

79. Tiedeman, D. V. & O'Hara, R. P.(1963) Career Development: Choice and adjustment. Princeton, N. J. College entrance examination board.

80. Triggs, F. O (1943) A study of the relation of Kuder preference record scores to various other measures. Educational and Psychological measurement, 3, 341 - 354

81. Wahab, L. A. (1976) The occupational Interests of post primary school students in Kontagora Division of Niger State. Unpublished B.A (Ed) thesis, A.B.U., Zaria.

82. Whitney, D. R. (1969) Predicting from expressed vocational choice: A Review. Personnel and Guidance Journal 48, 279 - 286.

83. Williamson, E. G., & Darley, J. G. (1937) student Personnel work. N.Y: McGraw-Hill.

84. Wrenn, C. G., (1958) The self-concept in Counselling. Journal of counselling Psychology, 5, 104 - 109.

85. Zytowski, D. G. (1968) vocational behaviour - readings in theory and Research. Holt, Rinehart & winston, Inc.

APPENDIX IA

ROTHWELL-MILLER INTEREST BLANK

(1968 EDITION)

Surname ..... First Names .....
(Block letters)

Age ..... Date of birth .....

School/College or Occupation .....

Form/Course .....

Today's Date .....

GLOSSARY OF MALE OCCUPATIONS:

Below are descriptions of some of the occupations you may not know.

AUDITOR: Checks and inspects the financial statements and records of firms.

BIOLOGIST: Makes a scientific study of animals and plants.

COST ACCOUNTANT: Works out the profit and loss on each department of a business and the cost of each operation.

EDUCATIONAL PSYCHOLOGIST: Is concerned with how and why people in various ways and assisting them with problems, particularly educational ones.

GEOLOGIST: Carries out scientific study of rocks, soils, minerals in remote places.

METEOROLOGIST: Scientifically studies weather and climatic conditions, make weather forecasts.

SOCIAL WORKER: Helps people who have a variety of problems by giving advice and information on how to obtain assistance.

STATISTICIAN: Analyses and interprets facts and information given in terms of figures - is essentially a mathematician.

X-RAY THERAPIST (RADIOGRAPHER): Treats ill health by means of X-Rays.

prepared by J. W. Rothwell, B.A. Revised by K.M. Miller, Ph.D. Reproduced by permission of the Australian Council for Educational Research.

INSTRUCTIONS: You will find below nine lists of different kinds of occupations in groups of twelve. It is possible that you will like only some of them, but we want you to number the jobs in each group from 1 to 12 in your order of preference. Disregard questions of salary or whether you think you could succeed in these occupations, but rank them only according to how you would like that kind of work. Place the figure 1 next to your first preference and so on down to 12, for the occupation you would least like in that group. Work quickly as your first impressions are desired.

NUMBER ALL ITEMS.

	A		B		C
Farmer		Toolmaker		Auditor	
Civil Engineer		Statistician		Meterorologist	
Cost Accountant		Ind. Chemist		Salesman	
Scientist		Radio Announcer		Architect	
Sales Manager		Commercial Artist		Playwright	
Artist		Novelist		Composer	
Journalist		Orechest. Conductor		Headmaster	
Concert Pianist		Educ. Psychologist		Town Clerk	
Teacher(Primary)		Company Secretary		Cabinet Maker	
Bank Manager		Builder		Veterinary Surgeon	
Carpenter		Surgeon		Surveyor	
Doctor		Forester		Filter and Turner	
	D		E		F
Biologist		Interviewer		Photographer	
Advertising Agent		Jewellery Designer		Magazine Writer	
Interior Decorator		Librarian		Organist	
Historian		Music Teacher		Scout Organiser	
Music Critic		Minister of Rel.		Shipping Clerk	
Social Worker		Clerical Officer		Wood Machinist	
Insurance Clerk		Bricklayer		Optician	
House Painter		Dentist		Gamekeeper	
Pharm.(Chemist)		Prospector		G.P.O. Technician	
Explorer		Motor Mechanic		Bank Cashier	
Electrician		Mathematics Tech.		Botanist	
Income Tax Asse.		Agricultural Scien.		Commercial Traveller	
	G		H		I
Book Reviewer		Dance Band Leader		Social Wel. Worker	
Record Lib.(Music)		Youth Empl. Officer		Despatch Clerk	
Youth Club Worker		Postal Clerk		Shoe Repairer	
Office Worker		Plumber		Male Nurse	
Plasterer		Physiotherapist		Market Gardener	
X-Ray Therapist		Transport Driver		Welder	
Fisherman		Radio Mechanic		Income Tax Clerk	
Watchmaker		Accounts Clerk		Laboratory Assist.	
Cashier		Geologist		Insurance Saleman	
Astronomer		Publicity Officer		Textiles Designer	
Auctioneer		Window Dresser		Poet	
Stage Designer		Radio Scp. Writer		Music Shop. Salesman	

Now write the three occupations you would like best of all (the occupations you choose need not appear above)

1 ..... 2 ..... 3 .....

Appendix II

ROTHWELL - MILLER [illegible]

(1968 EDITION)

Surname ..... First Names .....
(block letters)

Age ..... Date of Birth .....

School/College or Occupation .....

Form/Course .....

Today's Date .....

GLOSSARY OF FEMALE OCCUPATIONS

Below are descriptions of some of the occupations you may not know.

ASSEMBLY HAND: Puts parts together to make equipment such as electrical and mechanical appliances.

ASTRONOMER: Scientifically studies the stars and outer space.

BIOLOGIST: Makes a scientific study of animals and plants.

COST ACCOUNTANT: Works out the profit and loss on each department of a business and the cost of each operation.

EDUCATIONAL PSYCHOLOGIST: Is concerned with how and why people act in various ways and assisting them with problems, particularly educational ones.

GEOLOGIST: Carries out scientific study of rocks, soils, minerals and earth formations.

HORTCULTURIST: Specialises in the growth of plants and flowers, surpervises botanical gardens, public parks and flower gardens.

LENS GRINDER: Works on buffing and grinding machines preparing glass for use in spectacales, telescopes, optical instruments, etc.

METEOROLOGIST: Scientifically studies weather and climatic conditions, makes weather forecasts.

OCCUPATIONSL THERAPIST: Helps convalescent patients to exercise nerves and muscles by means of handicrafts and hobbies.

PHYSIOTHERAPIST: Treats muscle and joint complaints by means of massage, heat, ray and other treatments such as exercise.

SEWING HAND: Works on a machine, sewing dresses, suits, etc. out by other people.

SOCIAL WELFARE WORKER: Vists families and arranges help for people who are in need.

SOCIAL WORKER: Helps people who have a variety of problems, by giving advice and information on how to obtain assistance.

STATISTICIAN: Analyses and interprets facts and information given in terms of figures - is essentially a mathematician.

X-RAY THERAPIST (RADIOGRAPHER): Treats ill health by means of X-Rays

Prepared by J. W. Rothwell, B.A. Revided by H. M. Miller, Ph.D, Reproduced by permission of the Australian Council for Educational Research.

INSTRUCTIONS

You will find below nine lists of differents kinds of occupations in groups of twelve. It is possible that you will like only some of them, but we want you to number the jobs in each groups from 1 to 12 in your order of preference. Disregard questions of salary or whether you think you could succeed in these occupation, but rank them only according to how you would like that kind of work. Place the figure 1 next to your first preference and so on down to 12, for the occupation you would least like in that group. Work quickly as your first impressions are desired.

NUMBER ALL ITEMS

	A		B		C
Agric. Worker		Assembly Hand		Auditor	
Army Driver		Satistician		Meteorologist	
Cost Accountant		Ind. Chemist		Sales Assistant	
Scientist		Radio Announcer		Art Teacher	
Fashion S. Manager		Comm. Artist		Playwright	
Artist		Novelist		Composer	
Journalist		Orch. Muscian		Headmistress	
Concert Pianist		Edu. Psych.		Office Recept.	
Teacher(Primary)		Typist		Hairdresser	
Private Sec.		Pottery Maker		Vet. Surgeon	
Dressmaker		Surgeon		Ship Stewardess	
Doctor		Phy. Ed. Teacher		Knit. Mach. Operator	
	D		E		F
Biologist		Interviewer		Photographer	
Advert. Agent		Dress Designer		Magazine Designer	
Int. Decorator		Librarian		Organist	
Historian		Music Teacher		Red Cross Worker	
Music Critic		Missionary		Bank Employee	
Social Worker		Records Clerk		Housekeeper	
S/Hand Writer		Chocolate Packer		Nurse	
Book Binder		Occpt. Therapist		Animal Breeder	
Pharmacist(Cmst)		County S. Coach		Lens Grinder	
Horticulturist		Watch Repairer		Cashier	
Petrol P. Attndt.		Maths Teacher		Botanist	
Acct. Mach. Opt.		Agric. Scientist		Rravel. Salesman	
	G		H		I
Book Reviewer		Dance H. Musician		Soc. W. Worker	
Record Lib.(Music)		Youth Emp. Officer		Filing Clerk	
Youth Club Worker		Bostal Clerk		Cook	
Office Worker		Sewing Hand		School Nurse	
Laundress		Physiotherapist		Gardener	
X-Ray Therapist		Poultry Farmer		Stocking Mach. Opt.	
Flower Farmer		Jewel. Repairer		Inc. Tax Clerk	
Weaving Machinist		Accounts Clerk		Lab. Assistant	
Book Keeper		Geologist		Sales Demonstrator	
Astronomer		Publicity Officer		Textiles Designer	
Costmetics Demontr.		Window Dresser		Poet	
Stage Designer		Radio Script Wtr.		Music Shop Asst.	

Now Write the three occupations you would like best of all (the occupations you choose need not appear above)

1 ..... 2 ..... 3 .....

Do not write on the table below.

CATEGORY	A	B	C	D	E	F	G	H	I	TOTAL	RANK	% ILE
1. Out.	*											
2. Me.		*										
3. Comp.			*									
4. Sci.				*								
5. Pers.					*							
6. Aesth.						*						
7. Lit.							*					
8. Mus.								*				
9. S.S.									*			
10. Cler.												
11. Prac.												
12. Med.												

APPENDIX II

EYSENCK PERSONALITY INVENTORY

by H. J. Eysenck & Sybil B. G. Eysenck

PERSONALITY QUESTIONNAIRE

FORM A

NAME: ..... AGE: ....

OCCUPATION: ..... SEX .....

N [ ] E [ ] L [ ]

INSTRUCTIONS

Here are some questions regarding the way you behave feel and act. After each question is a space for answering "YES" or "NO"

Try to decide whether "YES" or "NO" represents your usual way of acting or feeling. Then put a cross in the circle under the column headed "YES" or "NO". Work quickly and don't spend too much time over any question we want your first reaction, not a long-drawn out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions.

Now turn the page over and go ahead. Work quickly and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

Scoring Key: E - Scale

FORM A

		YES	NO	
1.	Do you often long for excitement?	✓		E
2.	Do you often need understanding friends to cheer you up?			
3.	Are you usually carefree?	✓		E
4.	Do you find it very hard to take no for an answer?			
5.	Do you stop and think things over before doing anything?		✓	E
6.	If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so?			
7.	Does your mood often go up and down			
8.	Do you generally do and say things quickly without stopping to think?	✓		E
9.	Do you ever feel "just miserable" for no good reason?			
10.	Would you do almost anything for a dare?	✓		E
11.	Do you suddenly feel shy when you want to talk to an attractive stranger?			
12.	Once in a while do you lose your temper and get angry?			
13.	Do you often do things on the spur of the moment?	✓		E
14.	Do you often worry about things you should not have done or said?			
15.	Generally, do you prefer reading to meeting people?		✓	E
16.	Are your feelings rather easily hurt?			
17.	Do you like going out a lot?	✓		E
18.	Do you occasionally have thoughts and ideas that you would not like other people to know about?			

	YES	NO	
... sometimes bubbling over with energy and sometimes very sluggish?			
20. Do you prefer to have few but special friends?		✓	E
21. Do you daydream a lot?			
22. When people shout at you, do you shout back?	✓		E
23. Are you often troubled about feelings of guilt?			
24. Are all your habits good and desirable ones?			
25. Can you usually let yourself go and enjoy yourself a lot at a gay party?	✓		E
26. Would you call yourself tense or "highlystrung"?			
27. Do other people think of you as being very lively?	✓		E
28. After you have done something important, do you often come away feeling you could have done better?		✓	E
29. Are you mostly quiet when you are with other people			
30. Do you sometimes gossip?			
31. Do ideas run through your head so that you cannot sleep?			
32. If there is something you want to know about, would you rather look it up in a book than talk to some about it?		✓	E
33. Do you get palpitations or thumping in your heart?			
34. Do you like the kind of work that you need to pay close attention to?		✓	E
35. Do you get attacks of shaking or trembling?			
36. Would you always declare everything at the customs, even if you know that you could never be found out?			
37. Do you hate being with a crowd who play jokes on one another?		✓	E

	YES	NO	
~~Are you an Irritable person?~~			
39. Do you like doing things in which you have to act quickly?	✓		E
40. Do you worry about awful things that might happen			
41. Are you slow and unhurried in the way you move?		✓	E
42. Have you ever been late for an appointment or work?			
43. Do you have many nightmares?			
44. Do you like talking to people so much that you never miss a chance of talking to a stranger?	✓		E
45. Are you troubled by aches and pains?			
46. Would you be very unhappy if you could not see lots of people most of the time?	✓		E
47. Would you call yourself a nervous persons?			
48. Of all the people you know, are there some whom you definitely do not like?			
49. Would you say that you were fairly selfconfident?	✓		E
50. Are you easily hurt when people find fault with you or your work?			
51. Do you find it hard to really enjoy yourself at a lively part?		✓	E
52. Are you troubled with feelings ofinferiority?			
53. Can you easily get some life into a rather dull party?	✓		E
54. Do you sometimes talk about things you know nothing about?			
55. Do you worry about your health?			
56. Do you like playing pranks on others?	✓		E
57. Do you suffer from sleeplessness?			

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS

APPENDIX III

RAVEN'S STANDARD
PROGRESSIVE MATRICES
SETS A, B, C, D & E
(SCORING KEY)

Name _____ Ref. No. _____

Place _____ Date _____

Age _____ Birthday _____

Test Begun _____ Test Ended _____

A			B			C			D			E		
1	4		1	2		1	8		1	3		1	7	
2	5		2	6		2	2		2	4		2	6	
3	1		3	1		3	3		3	3		3	8	
4	2		4	2		4	8		4	7		4	2	
5	6		5	1		5	7		5	8		5	1	
6	3		6	3		6	4		6	6		6	5	
7	6		7	5		7	5		7	5		7	1	
8	2		8	6		8	1		8	4		8	6	
9	1		9	4		9	7		9	1		9	3	
10	3		10	3		10	6		10	2		10	2	
11	4		11	4		11	1		11	5		11	4	
12	5		12	5		12	2		12	6		12	5	

Time Total Grade

Notes

Tested by _____

APPENDIX IV

THE QUESTIONNAIRE

INSTRUCTION: Kindly give the information required in this questionnaire as truthfully as you can.

1. NAME _____

2. STATE _____

3. TRIBE _____

4. RELIGION _____

5. AGE _____ SEX _____

6. SCHOOL _____

7. DATE _____

8. FATHER'S EDUCATION _____

   (University, T.T.C., Secondary, Technical, Primary, Koranic, none or any other not mentioned).

9. FATHER'S OCCUPATION _____

10. MOTHER'S EDUCATION _____

11. MOTHER'S OCCUPATION _____

12. Mention one occupation you are quite interested in and would like to do after leaving school?

    _____

13. Mention two other possible occupation you would also prefer in the absence of your first choice.

    (i) _____ (ii) _____

14. Have you obtained enough information about these occupations? (Yes or No) _____

15. If 'Yes' by what means did you obtain the information?

    _____

    _____

16. If 'No' about which particular occupation(s) would you like to be furnished information?

_____

_____

17. Have you ever discussed with your father, mother or Career Master what you will like to do after leaving school? (Yes/No) _____

18. If yes what type of work was suggested? _____

19. What reason was given for choosing this work?

Reason _____

_____

20. If different from your first choice, are you also interested in the occupation suggested?

(Yes or No) _____

21. Put an (x) after each item in the appropriate column to show how important you would consider each given reason before selecting any occupation. If you have other reasons not mentioned, kindly give these in column J, K, L, M, below. The points 1, 2, 3, 4, are to help you to estimate the weight placed on none, little some and so on.

	REASON	0 None	1 Little	2 Some	3 Much	4 Great
a)	Good Salary					
b)	My interest in the work					
c)	Prestige					
d)	the wish of my parents					
e)	will allow me work on my own					
f)	will allow me work with people					
g)	better training opportunities					

	0	1	2	3	4
	None	Little	Some	Much	Great
h) good prospects for promotion					
i) work place near home					
j)					
k)					
l)					
m)					

22. Which 3 of the school subjects you take do you feel will help you in the occupation you prefer?

(i) _____

(ii) _____

(iii) _____

How would you rate yourself in these subjects? Write against each subject mentioned above, what is true in your case, using the description below.

(i) Excellent (i.e. 75 - 100%)

(ii) Very Good (i.e. 70 - 75%)

(iii) Good (i.e. 60 - 70%)

(iv) Fair (i.e. 50 - 60%)

(v) Just Fair (i.e. below 50%)

APPENDIX V

SIGN TEST OF EXPRESSED AND MEASURED OCCUPATION INTERESTS
(MALE SCORES)

S/NO	Expressed Choice	Measured Choice	SIGN	S/NO	Expressed Choice	Measured Choice	SIGN
1	Engineer	Medical	-	30	Accountant	Cler	-
2	Teacher	Scie	-	31	Pharm	Med	+
3	Doctor	Medical	+	32	Engineer	Scie	-
4	Lecturer	Comp	-	33	Salesman	Science.	-
5	Soldier	Pers	-	34	Clerk	Lit	-
6	Pharmacist	Scie	-	35	Lawyer	Med	-
7	Soldier	Scie	-	36	Teaching	Comp	-
8	Accountant	Clerical	-	37	Journalist	Lit	+
9	Agric. Sci	Scie	+	38	Cashier	S.S.	-
10	Teacher	Scie	-	39	Clerk	Mus	-
11	Journalist	Aesth	-	40	Doctor	Comp	-
12	Lawyer	Lit	-	41	Sales Manag	Pers	+
13	Engineer	Comp	-	42	Politician	Scie	-
14	Doctor	Med	+	43	Admin. Off	Lit	-
15	Accountant	Comp	+	44	Architect	Aesth	+
16	Teaching	S.S.	+	45	Bus. Manager	Scie	-
17	Accountant	Pers	-	46	Sales man	Med	-
18	Bank Manager	Pers	-	47	Bus. Manager	Pers	+
19	Bank Manager	Comp	-	48	Journalist	Lit	+
20	Clerk	Cler	+	49	Pilot	Scie	-
21	Engineer	Me	+	50	Pilot	Scie	-
22	Teacher	Scie	-	51	Clerk	Cler	+
23	Accountant	Pers	-	52	Accountant	Out	-
24	Accountant	Comp	+	53	Lawyer	Lit	-
25	Accountant	Comp	+	54	Doctor	Med	+
26	Architect	Scie	-	55	Agric. Sci	Cler	-
27	Agric. Sci	Scie	+	56	Lawyer	Aesth	-
28	Accountant	Comp	+	57	Clerk	Cler	+
29	Accountant	Comp	+	58	Auditor	Out	-

S/NO	Expressed Choice	Measured Choice	SIGN	S/NO	Expressed Choice	Measured Choice	SIGN
59	Clerk	Cler	+	70	Teacher	S.S.	+
60	Artist	Mus	-	71	Engineer	S.S.	-
61	Journalist	Lit	+	72	Accountant	Med	-
62	Doctor	Scien	-	73	Accountant	Lit	-
63	Chemist	Scie	+	74	Lawyer	Pers	+
64	Historian	Lit	+	75	Teacher	Lit	-
65	Doctor	Scie	-	76	Teacher	Pers	-
66	Agric. Scie	Pers	-	77	Doctor	Med	+
67	Engineer	Med	-	78	Biologist	Scie	+
68	Journalist	Lit	+	79	Engineer	Me	+
69	Radio Announ	Pers	+	80	Engineer	Comp	-

(FEMALE SCORES)

81	Teaching	Lit	-	101	Nursing	Med	+
82	Pharmacist	Med	+	102	Pub. Admin	Aesth	-
83	Nursing	Med	+	103	Teaching	Med	-
84	Sociologist	Med	-	104	Nurse	Scie	-
85	Lawyer	S.S.	-	105	Edu.Psychol	Aesth	-
86	Doctor	Lit	-	106	Teaching	S.S.	+
87	Geologist	S.S.	-	107	Soci.Worker	S.S.	+
88	Typist	Pers	-	108	Doctor	S.S.	-
89	Doctor	Med	+	109	Nurse	Pers	-
90	Lawyer	Med	-	110	Pharmacist	Med	+
91	Doctor	Scie	-	111	Lawyer	Pers	+
92	Nurse	S.S.	-	112	Accountant	Cler	-
93	Writer	Lit	+	113	Lawyer	S.S.	-
94	Doctor	Med	+	114	Architect	Scie	-
95	Pharmacist	Med	+	115	Lawyer	Med	-
96	Administrator	Pers	+	116	Doctor	Scie	-
97	Nurse	Lit	-	117	Lawyer	Lit	-
98	Teaching	S.S.	+	118	Lawyer	Pers	+
99	Journalist	Pers	-	119	Nurse	Pers	-
100	Teacher	Med	-	120	Teacher	Pers	-

S/NO	Expressed Choice	Measured Choice	SIGN	S/NO	Expressed Choice	Measured Choice	SIGN
121	Engineer	Med	-	131	Lawyer	Pers	+
122	Pharmacist	Scie	-	132	Lawyer	Comp	-
123	Pharmacist	Scie	-	133	Lawyer	Mus	-
124	Soci.Worker	Med	-	134	Teacher	Mus	-
125	Architect	Med	-	135	Agric.Sci	Scie	+
126	Historian	Pers	-	136	Accountant	Med	-
127	Lawyer	Med	-	137	Catering Off	Lit	-
128	B. Writer	Scie	-	138	Architect	Aesth	+
129	Nurse	Med	+	139	Bus.Admin	Pers	+
130	Accountant	Scie	-	140	Teacher	Pers	-

APPENDIX VI

Comparison of Intelligence means of subjects who select Scientific and those who select Persuasive Occupations as first Preference.

SCIENTIFIC				PERSUASIVE			
Nos	X1	d1	$d1^2$	Nos	X2	d2	$d2^2$
1	33	9.14	83.54	1	47	7.54	56.85
2	45	2.86	8.18	2	31	8.46	71.57
3	46	3.86	14.90	3	34	5.46	29.81
4	39	3.14	9.86	4	46	6.54	42.77
5	49	6.86	47.06	5	48	8.54	72.93
6	18	24.14	582.74	6	43	3.54	12.53
7	46	3.86	14.90	7	41	1.54	2.37
8	54	11.86	140.66	8	51	11.54	133.17
9	51	8.86	78.50	9	41	1.54	2.37
10	45	2.86	8.18	10	34	5.46	29.81
11	51	8.86	78.50	11	38	1.46	2.13
12	37	5.14	26.42	12	34	5.46	29.81
13	48	5.86	34.34	13	40	0.54	0.29
14	28	14.14	199.94	14	46	6.54	42.77
15	47	4.86	23.62	15	21	18.46	340.77
16	38	4.14	17.14	16	34	5.46	29.81
17	45	2.86	8.18	17	37	2.46	6.05
18	49	6.86	47.06	18	41	1.54	2.37
19	51	8.86	78.50	19	23	16.46	270.93
20	47	4.86	23.62	20	39	0.46	0.21
21	50	7.86	61.78	21	45	5.54	30.69
22	47	4.86	23.62	22	37	2.46	6.05
23	34	8.14	66.26	23	39	0.46	0.21
24	52	9.86	97.22	24	44	4.46	19.89
25	10	32.14	1032.98	25	50	10.54	111.09
26	41	1.14	1,30	26	42	2.54	6.45
27	45	2.86	8.18	$\Sigma X2$ =	1026		1353.70
28	34	8.14	66.26	$\bar{X}2$ =	39.46		
$\Sigma X1$ =	1180		2883.44				
$\bar{X}1$ =	42.14						

GIRLS

SCIENTIFIC				PERSUASIVE			
Nos	X1	d1	$d2^2$	Nos	X1	d2	$d2^2$
1	47	1.67	2.79	1	21	16.67	277.89
2	38	7.33	53.73	2	34	3.67	13.47
3	45	0.33	0.11	3	37	0.67	0.45
4	49	3.67	13.47	4	44	6.33	40.07
5	51	5.67	32.15	5	41	3.33	11.09
6	47	1.67	2.79	6	23	14.67	215.21
7	50	4.67	21.81	7	39	1.33	1.77
8	47	1.67	2.79	8	45	7.33	53.73
9	34	11.33	128.37	9	37	0.67	0.45
$\Sigma X1$ =	408		258.01	10	50	12.33	152.03
$\bar{X}1$ =	45.33			11	42	4.33	18.75
				12	39	1.33	1.77
				$\Sigma X2$ =	452		786.68
				$\bar{X}2$ =	37.67		

$$t = \frac{\bar{X}1 - \bar{X}2}{\frac{d1^2 + d2^2}{n1 + n2 - 2} - \left(\frac{n1 + n2}{n1 \quad n2}\right)}$$

$t = 2.349$

$df = 19$

APPENDIX VII

RAW SCORES OF SUBJECTS 1 = 1st preference
2 = 2nd preference
3 = 3rd preference

M A L E

NO	AGE	RPM	EPI	ROTHWELL - MILLER INTEREST BLANK											
			E - Score	OU	ME	COM	SCI	PER	AES	LIT	MUS	S.S	CLE	PRA	MED
1	17	49	13			3	2								1
2	21	33	10			3	1								2
3	16	53	8				2					3			1
4	19	39	14			1		2					3		
5	18	45	11				1	2	3						
6	17	46	10		3		1							2	
7	18	49	15	3			1							2	
8	21	40	13			3		2					1		
9	18	39	15				1							3	2
10	20	10	13			3	1			2					
11	18	47	10						1	2	3				
12	16	41	10					2		1					3
13	18	15	14			1	3						2		
14	22	41	15			2		3							1
15	20	12	14			1		2	3						
16	20	27	11	2							3	1			
17	20	47	14			2		1			3				
18	19	31	12			3		1		2					
19	19	36	14	3		1			2						
20	20	12	8			2		3					1		
21	18	42	11								1	3	2		
22	18	18	10				1	2							3
23	19	34	10			2		1				3			
24	19	41	7			1		3							2
25	18	45	8			1		2					3		
26	18	46	15		3		1		2						
27	19	46	9	3				1					2		
28	19	48	7			1		2					3		
29	18	43	6			1		2					3		
30	20	48	16	3				1					2		
31	20	23	7				3		2						2
32	16	54	10		3		1								2
33	20	51	8		3		1								2
34	21	33	5				3			1			2		
35	18	49	9				1		3						2
36	19	37	12			1		3							2
37	20	39	12	3						1				2	
38	19	34	14				1		3			2			
39	18	33	12						3	2	1				
40	23	40	11			1	2	3							

NO	AGE	RPM	EPI	ROTHWELL - MILLER INTEREST BLANK											
			E - Score	OU	ME	COM	SCI	PER	AES	LIT	MUS	S.S	CLE	PRA	MED
41	18	43	7					1		2					3
42	18	41	6	3			1								2
43	19	39	10				3			1		2			
44	18	37	13			3		2	1						
45	17	41	11					1			2		3		
46	20	47	12	2	1										3
47	17	51	11				2	1							3
48	17	36	10					2		1			3		
49	18	52	13		3		1								2
50	18	45	13				1			2					3
51	17	50	12			3			2	1					
52	20	39	10	1						3		2			
53	18	40	14	3				2		1					
54	17	45	14		3		2								1
55	19	26	12				2	3					1		
56	21	41	12					1		3			2		
57	18	37	10	3						2			1		
58	18	49	13	1				2				3			
59	19	39	14				3	2					1		
60	20	46	15					3	2		1				
61	19	42	11					2		1	3				
62	18	51	9				1	3							2
63	19	37	13				1	3					2		
64	19	45	9	2					3	1					
65	16	48	9		3		1								2
66	18	34	14			3		1			2				
67	19	28	12			3	2								1
68	18	43	5			2	3			1					
69	22	38	14			2		1	3						
70	22	42	10	3		2						1			
71	17	46	10									1	2		3
72	18	46	15			3	2								1
73	21	42	8			3		2		1					
74	19	34	6					1		2			3		
75	17	40	12			3		1		2					
76	19	46	7			3		1		2					
77	20	48	14	3			2								1
78	21	28	11		3		1								2
79	19	31	12		1		3								2
80	19	38	8		3	1	2								

FEMALE

NO	AGE	RPM	EPI	ROTHWELL - MILLER INTEREST BLANK											
			E - Score	OU	ME	COM	SCI	PER	AES	LIT	MUS	S.S	CLE	PRA	MED
1	16	32	5					2	3	1					
2	19	49	9				2				3				1
3	17	44	9			2	3								1
4	16	49	13			3						2			1
5	18	39	10				2		3			1			
6	18	33	15					3		1					2
7	16	47	7					3				1			2
8	16	21	14					1		2					3
9	18	45	14				3			2					1
10	17	28	14						3	2					1
11	17	47	8				1				2				3
12	18	14	9			3	2					1			
13	16	34	13				3			1	2				
14	15	52	11			3	2								1
15	19	50	6				2				3				1
16	18	34	7			3	2	1							
17	17	40	10							1		3	2		
18	19	40	14					3		2		1			
19	15	37	8					1			3		2		
20	17	37	5				2					3			1
21	17	46	9		2		3								1
22	11	21	15						1	2	3				
23	17	36	8				2	3							1
24	18	38	13	2		3	1								
25	18	50	16					3	1	2					
26	18	37	13						3	2		1			
27	17	12	10				2					1			3
28	17	50	11			3						1			2
29	18	44	14				2	1				3			
30	19	45	9				2					3			1
31	17	41	13					1				3			2
32	19	10	12			2					3		1		
33	17	39	7					2	3			1			
34	16	45	13				1		3						2
35	16	45	13				3		2						1
36	17	49	11			2	1					3			
37	16	39	18					2		1	2				
38	18	23	14					1		3	2				
39	18	39	12				2	1				3			
40	18	45	9					1	3			2			
41	17	48	15			3	2								1

NO	AGE	RPM	EPI	ROTHWELL - MILLER INTEREST BLANK											
			E - Score	OU	ME	COM	SCI	PER	AES	LIT	MUS	S.S	CLE	PRA	MED
42	16	51	16			3	1								2
43	16	47	13				1	2		3					
44	18	39	10				2					3			1
45	17	44	13			3	2								1
46	18	37	10				2	1							3
47	19	38	8					2				3			1
48	17	50	10	3			1			2					
49	18	46	8				3					2			1
50	17	47	12			2	1						3		
51	15	50	15			3		1			2				
52	19	42	13			1				2	3				
53	16	48	20					3		2	1				
54	17	35	10					2	3		1				
55	17	34	8				1	3				2			
56	15	43	11					2				3			1
57	18	39	13					3		1		2			
58	18	45	15	3			2		1						
59	18	42	13	2				1				3			
60	16	39	16					1		3		2			