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Development of a nomination inventory and rating scale in a multiple criteria approach for identifying gifted children in Nigeria

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DEVELOPMENT OF A NOMINATION

INVENTORY AND RATING SCALE

IN A MULTIPLE CRITERIA APPROACH

FOR IDENTIFYING GIFTED

CHILDREN IN NIGERIA

Research report in partial fulfilment of the award of PhD of Bayero University, Kano (Nigeria).

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APPROVAL

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DEDICATION

As a milestone in my educational career and academic pursuit, this research report is dedicated to:

Adamu Yakubu Kolo (my late father)

and

Fatima Wodu Kolo (my aged mother);

Both of who sacrificed their entire means of survival to ensure the pursuit of my education.

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ABSTRACT

Against the backdrop of an established research need for investigating the efficacy of teacher, parent and peer ratings of characteristics of gifted children and youths within the framework of a multiple criteria identification scheme, this study was set out in the main to evaluate ratings of traits of giftedness in nominated outstanding students and to validate an identification procedure that would effectively corroborate such rating indices.

Eight research questions and another set of eight hypotheses posed for the study undergirded the basic assumption that rating exercises by Nigerian teachers, parents and peers of outstanding students will reliably and effectively complement multiple criteria data in identifying gifted children. A survey approach was designed in four phases during which a number of psychological measures were intermitently administered to a sample of 391 outstanding students, 675 teachers, 441 parents and 813 peers in order to collect relevant and extant data for the research. During the five phases of the identification exercise, six psychological instruments were used for screening.

Sets of data collected with each instrument were categorised into five levels as follows: Below average (1); Average (2); Outstanding (3); Very Outstanding (4); and Extremely Outstanding (5). With such a categorisation, individual students' data were then collated into Identification Matrix Cards (IMC) for the purpose of analysis.

Analysis of data revealed in the main the following findings:

(1) Multiple criteria data is capable of significantly isolating Nigerian junior secondary school students eligible as gifted children.

(ii) All instruments and criteria used for matrix data collation had demonstrable levels of effectiveness and efficiency (respectively) for the purpose of identifying gifted Nigerian children.

(iii) Peers and teachers (in that order) and to lesser extents, parents of outstanding junior secondary school students can be found reliable in rating traits of giftedness for identification purposes.

(iv) Nine cognate characteristics of giftedness can be precisely rated by teachers, parents and peers of outstanding students. These are: Learning, motivation, creative leadership, sociability, artistic, musical, dramatic and psychophysical traits.

(v) Nomination inventories and rating scales can also be found effective as complementary devices in multiple criteria fremeworks for identifying gifted Nigerian children in junior secondary schools.

These findings informed conclusions and recommendations made for improving identification procedures and selection criteria for the country's gifted education programme. Most important of all recommendations was with regard to putting into practice the Blue - Print stipulated modified multiple criteria approach including nominations and rating exercises as crucial components for screening exercises.

Giving the Nigerian public dissatisfaction with selection procedures into Suleja Academy, it is concluded that only the adoption of an elaborate multiple criteria approach involving both affective/cognitive and subjective/objective criteria can enhance the defensibility of screening exercises for gifted education programmes in the country.

CHAPTER ONE: INTRODUCTION

Since the monumental study by Terman (1926), a lot has been realized about the Characteristics associated with giftedness. Subsequent research has also shown how diverse the characteristics of gifted children and youths are (Torrance 1962; 1963; Getzels & Jackson 1962; Renzulli & Hartman 1971; and Gardner 1983). As Correll (1978) opined, some cognate characteristics of gifted children which have been established from numerous studies include the uniqueness shown by them to be markedly different from their pears in terms of abilities, interests and psychological maturity, their versatility and motivation towards task accomplishment and their sensitivity to existing environmental variables. It is not possible to lay outright claims that these and many more general characteristics of gifted children are fully recognised and understood in Nigeria; some research endeavours not withstanding. This chapter focuses primarily on establishing the need for a research in this dimension with specific reference to ratings of characteristics of gifted children in Nigeria.

GIFTEDNESS

Renzulli (1978) put forward that giftedness implies interaction of traits of being above average in abilities, high commitment to set tasks, and a high level of creativity. Kitano & Kirby (1986) believe that education for the gifted encompasses more than emphasis on nurturing academic potential, and based on this, they provided a working definition describing gifted persons as individuals who possess superior ability in an area valued by society, irrespective of their age. Hence according to Obani (1987a), giftedness in its broadest sense can be taken to imply.

> ... possession of very superior intelligence, very high task accomplishment in some particular areas of human activity valued by society and achievement in other areas of activity at levels that far outstrip the performance of others in similar circumstance in the same population. p.1.

And embedded in every broad definition of giftedness is usually the concept of talent. Kirk & Gallagher (1989) used the term "talent" on a general note referring to specific dimensions of superior skill that may even outstrip a person's more general abilities. Many experts, however, do not agree on the usefulness of distinguishing between giftedness and talent because the characteristics of the two attributes overlap when generally considered (Bartz 1982, Pendarvis 1981, and Cohn, Cohn & Kanevsky 1988). For the purpose of this study, the gifted person can, therefore, be seen as one of any age who is blessed with outstanding potential or abilities in one or more of the areas of general intelligence, specific academic skills, psychosocial talents and other varieties of creative abilities.

RATING CHARACTERISTICS OF GIFTEDNESS

Central to this study is the investigation into how characteristics of gifted Nigerian children are rated by parents, teachers and peers of such students. The investigation was carried out also as part of the process of evolving a more standard and comprehensive procedure for screening and identifying gifted Nigerian students of junior secondary school age. In doing this, the study also focussed on developing and validating a common rating scale for screening gifted children and youths. And, of course, developing and validating scales for rating characteristics of giftedness entails employing procedures of establishing the efficacy of instruments and procedures utilised (Pegnato & Birch, 1959).

The efficacy indexes of rating scales are usually considered in two dimensions - the effectiveness and efficiency of ratios determined for the rating scales and the criteria involved respectively. According to Kitano & Kirby (1986:84) effectiveness of rating scales imply "... the percentage of confirmed gifted who are nominated by teachers as gifted", while efficiency refers to "... students nominated who actually achieve creteria for giftedness". Put more precisely, effectiveness of psychological instruments is signified by the ratio per centage of the number of students referred by certain instruments as eligible in terms of set criteria of giftedness, given the target population screened from the onset. Efficiency of criteria on the other hand implies the calculated ratio per centage level of the actual number of

gifted children given a specific domain used for screening. When collated together, the effectiveness and efficiency indices of screnning instruments and criteria provide what is termed accuracy or efficacy indexes (Pegnato & Birch 1959; and Borland 1975).

Obviously, establishing the efficacy of developed rating scales is a corollary for utilizing parents, teachers and peers for a more valid and reliable rating of the genuine characteristics of gifted children in Nigeria's junior secondary schools. And only then shall we be surer of specific factors and rating abilities of whoever is involved in gifted screening exercises.

BACKGROUND AND THEORETICAL FRAMEWORK

According to Kitano & Kirby (1986) societal recognition accorded special characteristics evidenced in the nature of gifted individuals is rooted in history. Early Chinese philosophers, for instance, were said to have documented their society's recognition of the multifaceted nature of giftedness (Tsuin-chen, 1961). And Kitano & Kirby (1986) from extensive review of the literature portended that different generations of ancient Greece and Rome (700-476 BC), European middle ages (500-1500 A.D.), to the age of renaissance (1300-1886) and the American civilization (from 1620) all valued and cherished varied characteristics of giftedness and talent with particular reference to how they could be nurtured towards societal development.

Newland (1976) noted that major scientific advances during the World War II and the subsequent launching of sputnik by Soviet Russia in 1957 necessitated the need in America to make the search for children with gifted characteristics a national educational concern. Thus, in the U.S. today, an elaborate gifted education policy has emerged involving screening programmes in which a variety of interests and talents are scrutinised for several characteristics of gifted children and youths (Ware 1991, and Feldman 1991).

Nigeria is a plural society with numerous traditional and ethnic communities. These communities must have also recognised outstanding performance and achievements valued in different ways. Kolo (1993) pointed out, however, that traits of giftedness and talent in traditional Nigerian societies may probably have existed unidentified

because of society's complacency towards outstanding achievement and performance. And although, high excellence schools (e.g. Kings College Lagos established in the 1920s and Federal Government Colleges established from the late 1960's) exist, no endeavour so close to special programmes for the gifted in the school system was ever mooted before 1977 (Kolo, 1992).

Following the work of an implementation committee set up by the Federal Government in 1978 to map out strategies for implementing the various aspects of the 1977 National Policy on Education (NPE) and its subsequent revision in 1981, some characteristics of children who could be outstanding were for the first time officially recognised as giftedness in the school system (Ipaye 1987). According to the NPE, characteristics of such gifted children in the school system include precocity, high intelligence, apathy to school routine, and feelings of not being challenged by teachers and the school curriculum (FRN, 1981). The Policy thus spelt out that special educational provisions be made available for such "specially gifted" and "intellectually precocious" school children and youths.

Oladele (1987) vividly documented all developments about gifted education in Nigeria since its 1977 official recognition. First in 1981, the Federal Government set up a committee of experts from various establishments having to do with the planned gifted education programme for children and youths. The Committee, under the chairmanship of the then Minister for Education, Dr. Sylvester Ugoh, was charged to work out modalities and make recommendations on indentification and special education programmes for gifted children. The Committee came up with what it tagged "Special Education Programme for the Gifted Nigerian Child"(SEPGINIC). The recommendations for SEPGINIC eventually led to the launching of "Operation Catch the Genius" (OCG) by the Federal Government in 1982.

Laudable as this development seemed, it has been observed that the Committee, after the launching, made very little effort to pursue SEPGINIC even within the context of Operation Catch the Genius (Milaham & Obi, 1991). Oladele (1987), however, opined that attention on the launching of OCG continued at the national level only in 1986 when President Ibrahim Babangida pronounced in his fiscal budget that provisions were being made for education of gifted children and youths. In order to realize this budgetary

provision, the National Concord of 6th February 1986 reported the then Minister for Education Professor Jubril Aminu, as saying that the sum of half a million naira (about US $24,000.00) was made available for the National Planning Committee on Education of Gifted and Talented Children (NPCEGTC) to work out modalities for screening, identification and developing programmes either on a vertical or horizontal basis for educating gifted children within the 6-3-3-4 system of education.

From April 1986, therefore, when the NPCEGTC was set up, its efforts were focussed on awareness and technical workshops meant to foster an understanding of gifted and talented persons in terms of their characteristics, as well as recommending suitable educational programmes for the country. Under the auspices of the Committee, for instance, a workshop was mounted at the Federal College of Education (Special) Oyo, for teachers and parents of gifted children. The objective of the awareness workshop was to help participants cope more effectively with the emotional, psychological and educational needs of gifted and talented children. Also, in a series of workshops at Lagos and Kaduna between 28th November to 5th December, 1986, the Committee came up with a Blue Print on Education for the Gifted and Talented Persons (NPCEGTC, 1986). The final report and recommendations of the NPCEGTC is indeed what is contained in the Blue Print. The recommendations in the Blue Print, in fact, have far-reaching implications regarding the screening and identification of gifted children in Nigerian schools.

The Blue Print recommends an identification plan based on ascertaining a target population of the top 5 per cent of primary school leavers to be considered eligible or gifted from local, state and national levels. Screening, according to the Blue Print, should also be based on a multiple criteria approach involving the use of teachers, parents and peer nominations/ratings, anecdotal records, completed products and performances, and classroom achievements (verbal, behavioural and written).

Following the official release of the Blue Print, and follow-up work by the Planning Committee in conjunction with the Special Education Unit of the Federal Ministry of Education, pilot schemes involving special service deliveries to nurture potentially gifted students in Federal Government Colleges were introduced (Kolo, 1992).

As designated centres of excellence, the selected Federal Government Colleges were specially aided to provide all the necessary psychological and academic stimulation to enable gifted students to get challenged towards meeting their potentialities.

Arising from experience with the pilot schemes between 1987 to 1989, and the subsequent efforts at developing tests of achievement and intelligence by the Federal Ministry of Education, the Suleja Academy, otherwise SULACAD, (a special school for nurturing gifted children of secondary school age) was founded. Since the establishment of SULACAD, two of the most nagging problems have been that of identification and screening for truly gifted children and youths (Udoh 1991, and Kolo 1992). In order to contribute further to the resolution of these problems, and particularly since giftedness manifests in a number of traits along with exceptional academic ability, some interest is, therefore, generated in carrying out this study.

THE NEED FOR THE STUDY

In 1986 when Nigeria started formal special education programmes for gifted children of secondary school age, it was generally agreed that one of the major problems to be surmounted would for sometime be that of screening and identification (Maduwesi 1987, Obani 1987b, Kolo 1989, Udoh 1991, Miliaham & Obi 1991). The general contention was that for the gifted education programme to achieve its objectives, efforts must be directed at developing reliable psychological instruments for use in assessing and identifying characteristics of gifted children and youths in our varied cultural settings. This would imply the immediate need for developing and validating standardized psychological instruments to serve the purpose of screening for gifted Nigerian children and youths.

As the Blue Print on Education for the Gifted and Talented Persons pointed out, one of the tasks of the NPCEGTC was to work on "developing, procuring, adapting, standardizing, re-norming or revalidating instruments for the purpose of screening for gifted children and youths!" (NPCEGTC, 1986:11). This task was necessitated by two things:

i) avoiding over reliance on foreign screening devices and instruments which may not be suitable to a Nigerian gifted education programme; and

ii) standardizing whatever instruments are developed or adapted to reflect the varied cultural settings in Nigeria.

For these two reasons, the need arises for research aimed at developing and validating psychological tests and rating scales for screening for gifted Nigerian children.

Following the selection of the first and second batches of students for SULACAD, there were outcries from the general public about the manner in which the screenings were conducted (Udoh, 1991). Accusations ranged from alleged biased selections in favour of parts of the country to corruption and outright favouritism in the selection of students. This, itself has since not made selection exercises look valid in the eyes of the ever skeptical Nigerian public. In spite of the high academic showing of students of SULACAD in the Junior Secondary Examinations, some experts are still not convinced that such a showing warrants special schools for any crop of children and youths. And, indeed, from a technical point of view, high academic excellence is actually not all that it implies to be gifted. The skepticism of the public can, therefore, be understood best in the context of a lack of adequate knowledge and understanding of characteristics of gifted children and youths. A study of this dimension is, therefore, needed to provide a clearer understanding of characteristics of gifted Nigerian children and youths.

Some six years after the publication of the Blue Print, The Guardian (May 24th 1992, p.1) reported that the Federal Ministry of Education was still thinking of "a new fool-proof process of selecting qualified children into the national gifted education programme". The same report also stated that the National Board for Educational Measurement (NBEM) had been mandated to develop tests and better screening devices for identifying truly gifted children and youths. This kind of report amounted to an indictment of the National Planning Committee which was yet to achieve one of its earlier stated tasks of developing, revalidating, adapting, adopting and renorming instruments for identifying gifted

children. And since ratings of characteristics of gifted children have to be preceded by the task of developing and validating appropriately normed instruments, this study will obviously go a long way towards fulfilling this task that has practically arisen in the country's gifted education programme. In other words, identified traits and characteristics of gifted children which can be precisely rated will form a springboard for further development of other instruments necessary for identifying the gifted.

As Kirk & Gallagher (1989) pointed out, one of the most crucial unresolved issues in gifted education programmes is that of undiscovered and underutilized talent due to many reasons which include different cultural values and the overlooking of gifted, and potentially gifted students in public schools. With the secondary level curriculum of Nigeria's 6-3-3-4 system of education placing emphasis on exploring the diversity of talents of all children and youths, it becomes pertinent that undiscovered and underutilized talents will need to be identified through concerted efforts for nurturing them in the emerging gifted education programme. The closest people to discovering such undiscovered and underutilized talents in schools are parents, teachers, and peers of gifted children. Hence, the need for better approaches to discover hidden talents in the 6-3-3-4 system of education arises. And perhaps parents, teachers and peers of gifted children remain potentially useful for rating outstanding characteristics as an approach at identifying undiscovered and underutilized talent.

The Blue Print on Education for the Gifted and Talented Persons remains so far the official policy document for Nigeria's gifted education programme. The Blue Print earmarks a modified multiple criteria approach for screening and identifying gifted children and youths of secondary school age (NPCEGTC, 1986). The Blue Print describes what it calls the multiple criteria approach as the procedure for identifying gifted children through a projected target population who are screened through a combination of various tests and rating devices. The projected target population of presumably gifted children are then [illegible] based on the top five per cent of all primary school leavers from local government areas to state and national levels. But that is as far as the Blue Print recommends on paper. In practice, attempts are still continuing in

the efforts to develop and validate more standardized psychometric screening devices, and the search for an indigenous rating scale is most probably yet to begin (Obani, 1987b).

Considering that it is important in gifted screening programmes to complement results of direct identification devices (i.e. psychometric tests) with indices from other indirect procedures and devices (i.e. nomination and rating scales), the need to develop more comprehensive screening programmes arises in Nigeria's gifted education programme. Research has, for instance, been able to demonstrate that while psychological instruments like cognitive tests of intelligence do provide valid indicators of gifted potential in children and youths, non-cognitive ones do also yield valid ratings of giftedness (Wallach & Kogan 1965, Wallach & Wing 1969, Torrance 1977a, Renzulli & Hartman 1971). When both direct and indirect devices or cognitively based and affectively based instruments are used for screening children to be placed on gifted education programmes, the entire identification procedure becomes more potent.

It is important not only to standardize the cognitively based Gifted Education Programme Screening Examination (GEPSE) series used for identifying gifted children in Nigeria, but research to develop indirect or affective oriented measures to complement research to the GEPSE becomes very pertinent at this point in time in the development of the country's gifted education programme. Developing and validating scales for rating characteristics of gifted children and youths remains one viable approach for making the screening programme which places too much emphasis on cognitive abilities a more potent approach in identifying the truly gifted.

Experts are also strongly of the view that when a screening programme relies only on cognitively based ability tests, the tendency is that many gifted children go unidentified (Getzels & Jackson 1962, Martinson 1974, Renzulli & Hartman 1971, Renzulli & Smith 1977, Kitano & Kirby 1986, Nwazuoke & Abosi 1992). Thus, the need to gear Nigeria's programme towards equally emphasizing complementary ratings becomes very relevant in making the screening programme for selecting students into SULACAD more

potent. The present study comes in handy in meeting this need for complementary devices for the GEPSE.

As Richert (undated) pointed out, the aim of screening and identification procedures for the gifted should not be to exclude, but to include children and youths based on evidence of passession of diverse characteristics. Putting it more succintly, Treffinger (1991) opines that identification should not just aim at "finding the eagles". Continuing, Treffinger put forward that

> It would quite likely be much more useful to think of identifying students' needs, focusing on their strengths, talents and sustained interest than it has been to try to identify and categorize the students themselves (e.g. gifted or non-gifted) p. 6.

To be able to identify and screen for multifaceted aspects of giftedness, of course, requires the use of more than a one-shot approach in which only the "eagles" are identified. And so it becomes necessary to use multiple standardized assessments for the present programme rather than a situation in which only the GEPSE is utilized for identifying gifted Nigerian children and youths. Thus, parents, teachers and peers need to be regarded as valid and probably most reliable for efficiently rating outstanding characteristics, if effective rating scales are developed for identifying gifted children and youths. Such scales developed to complement the GEPSE are what Nigeria's gifted education programme requires to identify more than just the "eagles".

As demonstrated by Cohn, et al (1988), the Generic Identification Strategy (GIS) used for screening for gifted children and youths involves stages in which school children nominated and rated by their teachers, parents and peers, have tests developed by experts adminstered to them. What the Nigerian gifted education programme needs most in its present stage in order to further its identification strategy is nomination devices and scales which will involve teachers, parents, and peers in rating characteristics of giftedness in children and youths. This has become necessary because of the allegations of political and social intrigue that have accompanied admission exercises into SULACAD (Udoh, 1991).

Kitano & Kirby (1988) succintly put it that of all the "Terman myths" about gifted children, only traits of superior self concept and social adjustment have not been contradicted at some point in time by other studies. Such studies attest to the fact that the gifted are not necessarily a homogeneous group in terms of their characteristics (Getzels & Jackson 1962; Wallach & Kogan 1965; Torrance 1967, 1977a; Wallach & Wing 1969; and Cohn et al 1988). These studies all generally agree that the differences in abilities and interests of gifted children and youths are greater than even for those that are known to obtain in the less gifted population. And as demonstrated by Renzulli & Hartman (1971), Jacobs (1971), Ciha, Harris, Hoffman & Potler (1974) and Martinson (1975), teachers, parents and peers of children do demonstrate high accuracy in rating the diverse characteristics of gifted children and youths. For Nigeria's gifted education programme, the need to involve teachers, parents and peers of children with potential for giftedness in screening exercises is further necessitated because the gifted may even belong to special groups (i,e. the culturally different). To Kirk & Gallagher (1989), the special groups of gifted children and youths often have their potentialities for outstanding achievement hampared by socio-cultural factors.

As Nigeria's gifted education programme blossoms, the need to involve teachers, parents and peers of potentially gifted children and youths in screening exercises will become essential. This is the practice also in countries with established programmes for the gifted (Correll, 1978). Indeed, Eysenck (1979) and Sternberg (1984) are of the opinion that delving into, and analysing the characteristics of gifted children and youths (i.e. at this point in time of developing special programmes for the gifted in the discipline of special education) in itself poses a research challenge. As Correll (1978) put it, successful screening and identification programmes entails continuing talent search with the involvement of people closely interacting with the gifted in order to derive complete information on their outstanding abilities. To help Nigeria's programme register demonstrable success, a study of this dimension is necessary.

One important aspect of any gifted education programme which we must not fail to note is that ever since the Terman studies, complementary screening appraches in addition to tests of intelligence and creativity, have been generally used and have not been excluded (Correll 1978, Kirk & Gallagher 1989). Other studies on identification and screening procedures have also been predicated on exploring the efficiency of utilizing nominations and ratings by teachers, parents and peers of gifted children (Getzels & Jackson 1962; Renzulli & Hartman 1971; Renzulli, Smith, White, Callahan and Hartman 1971; Renzulli & Smith 1977). Nigeria's pioneer programme of special education for the gifted would also need studies that will lead to the development of rating scales which can be administered to teachers, parents and peers in identification exercises. As pointed out by Taiwo (1988) and Kolo (1989), gifted education programme in Nigeria is not only a desirable and worthwhile venture, it also needs continuing research by educationists in order to determine more of the characteristics of gifted persons than is presently known. The present study is an avenue for knowing more of such characteristics of gifted children and youths in Nigeria.

Kitano & Kirby (1986) opined that although neither measures of intelligence nor creative ability do single handedly provide valid enough indicators of giftedness, additional indices from other psychological instruments reliably serve more as accurate screening criteria, especially for discovering characteristics associated with gifted children and youths. Since screening and identification devices in Nigeria presently rely solely on measures of intelligence and academic achievement, it stops short of identifying other important traits of giftedness other than cognitive abilities. Such other traits as psycho-social and verbal abilities which are better identified with scales administered to teachers, parents and peers are, therefore, often underscreened when cognitively based approaches (i.e. the GEPSE) are used.

Kolo (1991a), in fact, pointed out that screening for and educating gifted children and youths in Nigeria, indeed, needs to be geared towards the challenge of identifying for productive, rather than just fast learners. The need, therefore, arises to carry out research focusing on rating the widest possible range of traits of giftedness among those children already being served

in the special programme; findings which will then provide indicators as to the types of characteristics to be expected of unidentified gifted Nigerian children and youths. By focusing on a wide range of traits, research of such a dimension will indicate also those characteristics which can be readily identified by teachers, parents and peers. Consequently, research findings therefrom (as in this study) will serve good grounds for screening for potentially gifted children and youths from whatever level of education.

On a general note, while research data pointing to the feasibility or otherwise of utilising teachers, parents, and to some extents peers of children to identify the gifted ones is available in the advanced countries with developed special programmes, the same claim cannot be easily made for Nigeria. Gear (1976), Borland (1978), and Don (1980), for instance, provide ample data indicating instances when teacher nominations and identification of gifted children had proved reliable. Jacobs (1971) and Ciha et al (1974) have also provided research data demonstrating the limitations involved in utilising parents to identify gifted children and youths. With regard to peers of students or pupils, however, less data seems to have been reported as regards the feasibility of utilising them in gifted identification programmes (Correll 1978, and Cohn et al 1988). In Nigeria, it would appear that only two sets of reported research data exist about the feasibility or otherwise of utilising teachers to reliably identify gifted children and youths (Obani 1987b, and Ikpaya 1991). And even then, the approach in both cases was to ask sample of teachers to rate giftedness itself, which is not the same as rating characteristics of particular children. The result is that the efficiency and effectiveness of teacher nominations and ratings cannot be directly reported from available data. A review of researches addressed by UNESCO/UNDP in conjunction with the Federal College of Education, (Special), Oyo (Nigeria), shows that about five ongoing researches are centred around testing, screening, and identification of gifted children in Nigeria (Obani, 1992). These research efforts, however, centre around adaptation of IQ and creativity tests and not rating scales. All the same, data seems unavaliable generally to show the feasibility of utilising parents and peers of children for identifying the gifted. The present study,

therefore, is needed to fill that gap in knowledge which exists about utilising parents, teachers and peers of school children to identify the gifted in Nigeria.

In essence, the need for this study is predicated on making Nigeria's pioneer gifted education programme more directly targeted, to ensure that not only the truly gifted are identified, but to make it encompassing enough for a more diverse number of gifted children. Such an investigation as this is crucial towards the success of the country's gifted education programme; and this is so if as Richert (undated) puts it, we are not to confuse proper screening with mere selection of presumed gifted and talented children and youths.

PROBLEM STATEMENT

Four major problems which can be theoretically supported present themselves for this study:

i) Developing more screening devices for indentifying gifted children for Nigeria's gifted education scheme, which, as the Blue Print recommends, should be based on a multiple criteria approach.

ii) Establishing the validity and reliability of rating scales as complementary instruments to tests of intelligence or creativity and achievement within the context of screening for gifted Nigerian children.

iii) Exploring the feasibility of utilizing Nigerian teachrs, parents and peers for efficiently rating the characteristics of gifted children and youths.

iv) Establishing the potency of utilizing developed or adapted, as well as existing foreign developed rating scales for identification purposes in gifted screening exercises in Nigeria.

It has been demonstrated through previous research that scale values (other than those of intelligence) do adequately provide valid indicators of giftedness when it comes to rating more than one dimension of superiority (Wallach & Kogan 1965, Wallach & Wing 1969). The potency of creativity tests in screening for gifted children have also been largely demonstrated (Torrance 1977a). Following these kinds of research findings, series of scales for assessing the behavioural characteristics of gifted children and

youths by teachers and parents have been developed (Renzulli & Hartman 1971, Renzulli et al 1976). Since all these efforts are foreign to the Nigerian culture and education system, directly utilising such instruments can not be relied upon for producing defensible enough results. Unfortunately, even the seemingly only work by Obani (1987b) relied on a semantic adaptation of scales developed in another country, and concentrated more on rating characteristics of imagined gifted children by teachers. Thus, instruments norm-referenced in Nigeria will be needed for more efficacious ratings in comprehensive screening exercises.

As Udoh (1991) lamented, previous screenings have been marred by allegations of favouritism, uncalled for use of quota system, falsification of results, and nepotism. While these may be social problems characteristic of general education in Nigeria, the entire procedure used for early screenings for gifted children also relied heavily on cognitively based tests alone. Hence, teachers, parents and peers of those children later "identified" as gifted were never involved in screening programmes. Considering the emphasis put on these significant others by experts, it may have been possible to defend the poineer screening exercises of allegations of favouritism, had teachers, parents and peers of gifted children been involved through the utilization of more rating scales to complement the use of only cognitively based tests.

Nwoye (1990) indeed cautioned that it will be important to ensure that screening exercises in Nigeria involving teachers, parents and peers need to be geared towards avoiding the problems of what he called Bacon's idols of the mind. Idols of the mind refer to a philosophical doctrine expressed by Bacon that humans are prone to a variety of errors of the mind which may not be concordant with objective principles at judging events and abilities of people. Therefore, to develop and validate a series or rating scales which can ensure objective screening poses a fundamental research problem.

Added to the problems above are criticisms to which teacher nominations of gifted children are usually subjected to. It has been strongly suggested that variables like teacher knowledge of special education and the concept of giftedness, as well as experience in the field of teaching do influence efficiency for rating outstanding

characteristics (Renzulli & Hartman, 1971). In the same dimension, Obani (1987b) found that for Nigerian teachers, factors like professional qualifications, sex of children and youths as well as cultural factors did affect the feasibility of utilizing teacher ratings of characteristics of giftedness. The extent to which rating scales developed for use in Nigeria can be free from such criticisms is a dimension of the problems addressed in this study.

In a study by Ikpaya (1991), a significant number of Nigerian Certificate in Education (NCE) and the grade II teachers certificate holders in regular teaching service were asked to rate competencies they thought potential teachers of gifted children should possess Results indicated that among other competencies, possession of knowledge about the characteristics of giftedness was rated highest. However, it is pertinent to note that awareness of such competencies expected of potential teachers of gifted children does not amount to being significantly reliable or efficient when it comes to rating outstanding or superior characteristics. For Nigerian regular class teachers, the extent to which they could be reliable for efficiently nominating gifted children and youths is a problem dimension addressed in this study.

Terman (1925) did not only rely on tests of intelligence and academic achievement to assess and identify gifted children; teachers and parents were also directly involved in the exercise. And in spite of the diverse characteristics of gifted children, Tannenbaum (1983) insists that parents do recognise the potential of their gifted children before even educators, school psychologists and counsellors would do so. Correll (1978) opines that parents can often provide information about gifted children which is not apparent to school personnel or even their peers. Kitano & Kirby (1986) are even of the opinion that when it comes to identifying children (especially at pre-school and primary school ages), parents may be even more reliable than teachers. For Nigeria's programme, whether parents will be objective enough, coupled with the problem of communication (since some parents are illiterate) are problem areas also addressed.

One approach at identifying gifted children that has not been thoroughly investigated is the use of peers for screening and

assessment purposes (Torrance 1977b; Correll 1977; Kirk & Gallagher 1989). In fact, Correll (1978) further added that because some gifted children tend to effectively conceal their abilities, restraint should be exercised in utilising their peers during screening and identification. All the same, it is still possible to speculate that given the social precocity of gifted children, their peers at home and in school look potentially utilisable for efficiently rating outstanding characteristics in adjudging the gifted. The extent to which peers of children and youths can rate the gifted ones in their groups present another research problem.

Put more succintly, the research problems this study address centre around the probability of effectively and efficiently utilizing rating scales for teachers, parents and peers to assess outstanding characteristics amongst children and youths in junior secondary schools as a way of evolving a complementary strategy for identifying the gifted in Nigeria. Thus, the desirability of developing rating scales; establishing the extents to which such scales could be effective for screening purposes; and exploring the potency of utilizing teachers, parents and peers for efficiently rating characteristics of gifted children form the core of research problems addressed by this study.

AIMS OF THE STUDY

By design and approach, the aims of this study can be spelt out in broad and specific terms as follows:

Broad Aims:

i) Developing and validating screening instruments and procedures for identifying and assessing the characteristics of gifted children.

ii) Investigating what characteristics of giftedness are most frequently rated by teachers, parents and peers of gifted children in Nigerian junior secondary schools.

iii) Establishing the efficacy of utilising teachers, parents and peers of children for using rating scales in screening for the gifted.

Aims in Specific Terms:

i) Developing standardized rating scales usable by teachers, parents and peers, and which are norm referenced to the Nigerian society.

ii) Establishing the correlation between these rating scales and other measures presently used in screening exercises.

iii) Investigating the extent to which students at SULACAD actually posses the cognate characteristics of giftedness.

iv) Finding out what proportions of junior secondary school students relatively posses characteristics of giftedness using a number of instruments and complemented by the developed rating scales

v) Establishing the efficacy of using parents, teachers, and peers of children and youths in screening for the gifted.

vi) Comparing the potency of teachers, parents and peers in efficiently rating gifted children and youths for identification purposes.

vii) To determine the intercorrelation values between the rating scales used in the study in order to authenticate further their effectiveness for screening purposes.

viii) Investigating the tendency of teachers, parents and peers for recognising the cognate characteristics of giftedness in the Nigerian context.

RESEARCH QUESTIONS

To accomplish the broad and specific aims of this study, the following questions were precisely posed:

1. Would it be more valid to adopt or develop rating scales for screening characteristics of gifted Nigerian children and youths?

2. How effective will be rating scales (developed or adapted/adopted) in determining the distinct outstanding characteristics of gifted children and youths of junior secondary age?

3. Which cognate characteristics of giftedness will be more efficiently or precisely rated by teachers, parents and peers of mominated students?

4. To what extent can we generalize about the characteristics of gifted children and youths based on direct and complementary instruments utilised for screening students nominated?

5. What criteria (cognitively and affectively based) will be most efficient in screening for gifted children in Nigeria?

6. To what extents can parents, teachers and peers of nominated children effectively rate their gifted potentials?

7. What salient factors contribute to the efficacy of utilising multiple criteria approach for the identification of gifted children?

8. what comparative trends can be drawn in terms of teacher, parent and peer ratings of traits of giftedness in nominated children?

HYPOTHESES

Based on the research questions so posited, the following hypotheses were formulated to guide data collation in the bid to accomplish both broad and specific aims of the study.

1. There will be no significant difference in the overall matrixed scores obtained by children who attain, and those who do not obtain the set multiple criteria for being eligible as gifted.

2. There will be no significant difference between the matrixed scores of students currently served in provisions for the gifted, those found eligible as gifted directly from the multiple criteria screening, and those screened to be ineligible as gifted children.

3. There will be no significant correlations between teacher, parent and peer ratings, with students' overall matrixed scores:

(a) No significant correlation between teacher ratings and students' matrixed scores;

(b) No significant correlation between parent ratings and

students' matrixed scores;

(c) No significant correlation between peer ratings and students' matrixed scores.

4. No single screening instrument will be significantly effective enough for determining the proportion of outstanding students considered eligible as gifted by their matrix data.

5. No single screening criteria will be significantly efficient enough for determining the proportion of outstanding students considered eligible as gifted by their matrix data.

6. No multiple criteria screening index will be significantly loaded enough for determining the extents to which outstanding students are considered eligible or ineligible as gifted children.

7. Rater efficiency for rating each cognate characteristic of giftedness in outstanding students will not significantly correlate with overall ratings by teachers, parents and peers.

8. There will be no significant correlations between teacher, parent and peer ratings of characteristics of giftedness in outstanding students:

(a) No significant correlation between teacher and parent ratings;

(b) No significant correlation between teacher and peer ratings;

(c) No significant correlation between parent and peer ratings.

SIGNIFICANCE OF THE STUDY

Cohn et al (1988) portended that even years after the Terman studies of 1925, follow-up works still continue to unravel more of what was thought to be the myth of characteristics of gifted children. And as confirmed by Kitano & Kirby (1986), more myths about the characteristics of gifted children continue to become better known from recent studies. The present study also represents another thrust at unravelling myths surrounding giftedness in this part of the world. Such an endeavour could be regarded to be of particular

significance, considering that the present attempt at developing special programmes for children indicating traits of giftedness in Nigeria is a pioneer one.

A number of experts have put forward the view that using cognitively based tests (i.e. intelligence and achievement tests) alone to identify gifted children tends not to widen the knowledge horizon about giftedness and talent (Getzels & Jackson 1962, Martinson 1974, Renzulli & Smith 1977). It is in the same vein that psychologists believe that neither the use of individual or group intelligence tests, as well as standardized achievement tests, are adequate enough in screening for gifted children and youths (Torrance, 1967). Thus, nominations, ratings by parents, teachers, peers and the self (i.e. the gifted themselves) are used to complement efforts at screening for the gifted. Giving Nigeria's programme in which rating scales and nomination procedures were yet to be developed, this study and its findings are of significance to those responsible for developing special programmes for the gifted.

As pointed out by Taiwo (1988) and reiterated by Kolo (1989), a gifted education programme for Nigeria is not only desirable and worthwhile venture, it also necessitates the need for us to know more about gifted and talented persons in terms of their characteristics. The more we get to know about the widest possible characteristics of gifted children and youths through studies of this dimension, the more efficacious will be our identification procedures and the better developed our special programmes for the gifted will become.

It is so far not very clear from research reports how utilisable Nigerian teachers and parents are for nominating and rating children as gifted. Ikpaya (1989), for instance, indicated that while regular teachers may possess positive attitudes towards the gifted, they may not possess adequate knowledge about gifted characteristics. Obani (1987b) in his study of the feasibility of utilising teacher nominations for identifying gifted children in Nigeria did not only regard the effort as pioneer, but indeed hoped it will also provide more information about characteristics of gifted children and how teachers rate them. This study stands out significant as it aims at filling this and other gaps in knowledge about characteristics of gifted Nigerian children and youths.

LIMITATIONS

This study entails rating characteristics of particular students by their teachers, parents and peers. The students were either nominated by their teachers and peers, or had been screened and identified through the GEPSE. The study carries along with it some inherent limitations listed herewith:

i) Nomination strategies generally have their own flaws. Belief tendencies about giftedness and proness to idols of the mind could make nomination strategies less reliable if those nominating do not possess objective knowledge about who the gifted are. In this study, nominations were utilised as percursors for screening gifted children. The extent to which those who nominated students were objective enough is not the subject of this study.

ii) The GEPSE as one of the instruments used for validating the rating scales comprises of a variety of achievement tests and the standard progressive matrices. While the achievement tests dominate the indicator values for selection of gifted children (i.e. those at SULACAD), the matrices used were also adopted along the popular Raven format. Obviously, then, problems of technical adequacy of the adopted matrices itself cannot be ruled out.

iii) Although emphasis in the literature has been on a variety of aspects of giftedness and talent (i.e. general intellectual, specific academic, creativity, psycho-social, visual and performing art, as well as psychomotor talents and giftedness), only the cognate characteristics that cut across these outstanding abilities are rated. Thus, the data and findings from the present study can only complement whatever generalization is hoped to be made about children and youths with specific talents.

iv) The sample used for the study is made up mainly of junior secondary school students. In the country's educational system, these are children who have completed the basic six years primary

education and who are now in the first three years lap of their secondary education. The present study, therefore, only acknowledges that gifted children and youths exist at all levels of primary and secondary education as well as even outside the school system, but findings are more related to those in the junior secondary schools.

v) Children and youth can be found in any educational system from the primary level to the post secondary level of education. For this study, an average age of 13 was considered the mean age for designating people as children.

vi) The measure of creativity used was adapted. No effort was directly made to develop and validate a specific creative assessment instrument for the study.

vii) It has since been accepted from the literature that some gifted children hide their potential either because of antagonism or lack of encouragement from society. In this study, there is no overall claim that instruments used for screening gifted children were capable of singling out even those children who conceal their gifted potential. Thus, from the larger population, the students nominated and screened may probably have left out some of those crops of gifted children and youths who could have effectively concealed their gifted potential.

viii) As Kolo (1993) reiterated, among the gifted population are also special groups like the handicapped, culturally different, underachieving and even stereotypical cases like women. Although these special groups do also possess gifted potentials, they may not be identifiable through conventional instruments meant for the regular population. This study also makes no claim that "all" gifted children and youths of junior secondary age are equally represented in the sample.

These limitations not withstanding, the results here proof significant for more knowledge about characteristics of gifted children and the development of special programmes for the gifted.

OPERATIONAL DEPINITIONS OF TERMS

Effective Measures: The extent to which instruments can be adjudged to be potent in assessing given traits. In screening for gifted children, effectiveness of measures are determined by the extents to which children satisfy set standards for giftedness based on identification instruments used.

Efficacy of Measures: How far a screening procedure (in terms of both instruments and those to whom they are administered) are predictive of expected traits being identified. In this study, efficacy of measures are determined by indexes of effective and efficient ratios of rating instruments and procedures respectively for predicting the actual proportion of gifted children and youths from the sample.

Efficient Measures: The extents to which criteria involved in a gifted screening procedure reliably provide the required data for determining giftedness.

Giftedness: A psychological state of constellation of abilities in terms of cognitive, behavioural and socio-psychological dispositions which are so outstanding that a difference is noticeable in comparison to the general population.

Gifted Children: In this study, this refers to people between the ages of 10-15 whose potentialities and output (academically and non-academically) by far oustrip performance in the larger population of the same age range.

Gifted Education: Special programmes or provisions designed specifically to meet the potential levels or outstanding characteristics manifested by a proportion of the general population whose contribution to society are presumed to be outstanding and highly valuable.

Identification: The entire procedure involved in searching for gifted and talented persons, and which entails assessments,

screening and placements on special programmes.

Nomination: The procedure involved during initial assessment of children and youths to form a pool of outstanding persons with presumed potential for being gifted or talented.

Ratings: Index values indicating levels of judgement about the possession of given cognate characteristics (i.e. of giftedness and talent).

Rating Scales: Response eliciting format on which specified characteristics or traits can be judged.

Screening: A psychologically oriented procedure in which those with specified outstanding traits (i.e. of giftedness) are soughted out.

Superior Characteristics: Psychological dispositions which are recognised as by far outstripping performacne or trends in the general population. It may only be relative to giftedness.

Special Programmes: Educational adaptations from regular school curriculum which are designed to cater for those with potential or who possess perceived superior/outstanding traits (i.e. of giftedness).

Talent: An outstanding, but specific level of ability to perform, usually manifested in a superior state over several other well known attributes of a person.

Talented Person: One with specific qualitative characteristic or trait, which by far outstrip his or her well known general abilities.

SUMMARY

In this chapter, giftedness is explained in terms of outstanding and recognised traits or characteristics which are of potential value to self and the society at large. It is explained that characteristics of gifted children can be effectively and efficiently rated depending on the nature of rating scales used and the tendency of raters to rate well those exceptional characteristics they observe in children and youths. A comprehensive background is provided by briefly tracing the historical development of gifted education in Nigeria. The need for the present study is established taking into cognizance the essence of developing rating scales and conducting

more investigations into the characteristics of gifted Nigerian children and youths.

This chapter also presents four research problems which are theoretically supported in terms of developing rating scales and utilizing teachers, parents and peers of children to reliably screen for the gifted by rating their characteristics. The broad and specific aims of this study are outlined; all centering around investigating and establishing ratings of characteristics of gifted Nigerian children. Eight research questions and eight main hypotheses were then stated to accomplish the aims of the study. The chapter also briefly reiterates the significance of the present study particularly with regards to the potentially high value of the findings towards developing the country's gifted education programme. A number of limitations of the study are outlined with particular emphasis on the general problems associated with screening for gifted children. The chapter ends in the main with operational definitions of terms most frequently used in the study.

CHAPTER TWO

REVIEW OF LITERATURE

PREAMBLE

This chapter reviews various positions and research findings of experts about gifted education with particular reference to characteristics of gifted children and youths. An account is rendered about the concepts of giftedness and talent; characteristics of giftedness are clearly discerned in general and specific terms; and brief accounts are recounted about a few gifted people, highlighting their outstanding contributions in intellectual, scientific, artistic, and psychosocial endeavours. The state of the art of gifted education in terms of current practices and emerging paradigms is also examined. Finally, identification schemes, procedures and approaches in screening for gifted children and youths are reviewed with reommendations made by experts highlighted.

CONCEPTS OF GIFTEDNESS AND TALENT

Defining the concepts of giftedness and talent often reflects people's views about characteristics of gifted and talented persons. As noted by Marland (1972), there are perhaps as many definitions of giftedness and talent as there are articles, books and research emerging in the field of gifted education. Thus, as Richert, Alvino & McDonnel (1982) noted, unless the question of what giftedness is can be very clearly agreed to, neither support for, nor defensible identification procedures and programmes for potentially gifted persons can be fully established.

One of the most prevalent trends in definitions involve attempting to be specific about those who are gifted and those who are talented (Richert 1991a). Renzuli (1978) in a review and re-examination of definitions of giftedness concluded that in most cases, the two concepts are broadly conceived together as specific or general intellectual abilities. According to Richert (1991a), such distinctions are not only false, but they tend to engender elitism in defining and using the term "gifted". To regard the gifted as distinct from the talented, for instance, is prone to making screening exercises so exclusive in orientation as to leave out many outstanding potential contributors to society.

Cox, Daniel & Boston (1985) recommended the use of "able learners" to describe both the gifted and talented. According to them, using the term "able learners" will not only minimize what is perceived as a labyrinth of confusion about defining giftedness and talent, it will also provide the necessary lead for a more inclusive selection in screening exercises. Athough the use of "able learners" has not gained wide popularity among experts, it looks potentially useful in efforts aimed at broadening our conception of giftedness as a first step towards defensible identification schemes. Yet, the disadvantage of the possible exclusion of "special" groups of gifted children and youths from "able learners" cannot be ruled out in a universal acceptance of the proposed label.

Some experts agree among themselves that giftedness is the product of the interaction of innate potential and learning abilities or general life experience (Renzulli 1978, Tannenbaum 1983 and Richert 1991a). Putting it more succinctly, Richert (1991b) explained that:

> Gifted potential is not a single dimensional intellectual phenomenon, but a complex ability that emerges from the interaction of innate potential, learning and experience (p. 140).

In a nutshell, whether we use the term gifted, talented or able-learner, it would appear that some relative superiority will usually be implied over the general population.

According to Richert et al (1982) recent research findings are a pointer to emerging new perspectives in coceiving what giftedness is all about. Such emerging perspectives have, according to them, affected various conceptions of giftedness as a phenomenon. Some ideas emerging from such perspectives, for instance, include conceiving of giftedness as entailing observable manifestation of qualitative performance, high evaluative criteria about what is exceptional or original, emphasis on elaborate outstanding characteristics as determinants of attributes of giftedness, and emphasis on developing gifted potential rather than seeking to nurture already manifest talents (Richert et al 1982). No doubt, such emerging perspectives are capable of influencing how practitioners will conceive of the concepts of giftedness and talents.

In an analysis of comparions of prevalent definitions of giftedness, Richert et al (1982) identified five ways in which giftedness is defined by practitioners:

i) Definitions based on the criteria which emphasize exceptional intellectual ability (i.e. very high IQ and scholastic attainments). The Terman (1926) definition is a ready example in this category. He defined giftedness in terms of performance at 140+ on the Stanford-Binet Intelligence Scale; a performance he believed was predictive of outstanding performance in adulthood.

ii) Those definitions which emphasize multiple intellectual abilities as criteria for giftedness. An example is the Guilford (1975) structure of intellect model which describes giftedness in terms of a person's cognitive ability not only to acquire, but essentially to manipulate about 120 functions of human intellect. Such functions of intellect in Guilford's conception imply outstanding abilities of gifted persons to measure well on indices of learning, memorization, application, synthesizing, and evaluation of facts of knowledge. The model, in essence stressess that giftedness is a manifestation of outstanding complex abilities which are critical to creative and original contributions in unique problem solving situations as well as divergent production of knowledge (Guilford 1975).

iii) Defintions derived from conveiving of giftedness in terms of creative potential: The works of Torrance (1967, 1977a) largely influenced views emphasising the place of creativity in giftedness. Renzulli (1978) for instance, is of the view that gifted and talented children manifest a composite set of three traits: Above average general ability, high levels of task commitment and high levels of creativity.

iv) Definitions which emphasize the factor of multiple talents in giftedness: Such definitions conceive of giftedness in terms of a variety of talents which manifest persistently and are potentially valuable to human endeavours. An example of definitions that fit into this frame of reference is that which describes gifted children as those who, in spite, of their generally high mental ability, also manifest consistently remarkable performance in potentially valuable lines of human activity (Witty 1958). A more recent definition in this category is that of Taylor (1985) who viewed giftedness as synonymous with "talents unlimited".

v) Definitions based on the United States federal legislation and as recommended by the Marland (1972) Report to the Congress. The United States Office of Education (USOE), adopted the defintion that:

> Gifted and talented children are those identified by professionally qualified persons-who, by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/ or services beyond those normally provided by regular school programs in order to realize their contributions to self and society. EIRC (1992) p. 3.

The U.S.O.E. definition further states that gifted children do demonstrate outstanding abilities and aptitudes, singly or in combination, in aspects of human endeavour like general intellectual ability, specific academic aptitude, creative or productive thinking, leadership traits, aptitude for visual and performing arts and psycho-motor talent.

Interestingly enough, the Nigerian Blue Print on Education for the Gifted and Talented Persons adopted the same definition as that of the U.S.O.E. (NPCEGTC 1986).

TOWARDS A DEFINITION

The diverse manner in which giftedness is conceived led Richert et al (1982) to advocate for a pluralistic perspective in the definition, adding, however, that "... each definition has validity in describing a particular manifestation of giftedenss (until research proves otherwise)" (p. 101). It is the view of Richert et al that

for identification purposes, pluralistic definitions be adopted particularly for plural societies like Nigeria and the U.S.A Noting, therefore, that a variety of definitions have their strengths and weaknesses, Richert et al went on to recommend the U.S. federal definition as the most useful, given all types of definitions offered above.

While the U.S.O.E. definition may be useful in the United States for, amongst other reasons, the high level of opportunity for education, this may not follow in the Nigerian case. This is because given the high level of illiteracy and poor access to education, the U.S.O.E. definition (pluralistic as it may be) probably is not very adaptable in Nigeria. And thus, the search for what may be referred to as a more "eclectic-pluralistic" approach is still needed in a frame of reference for defining giftedness in Nigeria.

Given the myriad of confusion surrounding the definition of giftedness, the Center for Creative Learning (CCL, 1989) attempted to distinguish between those definitions that could be considered "strong" or "weak". The Centre considered any definition as "weak" if emphasis was placed on factors such as high scores from paper and pencil tests, and undue reference to the grasp of a variety of information without necessarily relating it to sense of action, application, impact or contribution. Such weak definitions usually view giftedness in terms of one-shot static classifications, labels, and categorisation of the concept into levels. Unfortunately, most definitions in research and the literature today still very much rely on "... little more than data correlated highly with test scores" (Treffinger, 1991:5). Richert (1991a) further observed that weak definitions often attempt to create artificial hierachies and distinctions between children's performance (high or low) on IQ and achievement tests. Thus, to Richert, not only do such definitions engender elitism, they also exclude many students with gifted potential.

Such definitions offered by Hildrenth (1966), Gallagher (1975) and Oladele (1987), going by the criteria offered by the Centre for Creative Learning, would be regarded as "weak".

To Hildrenth (1966), the gifted child or young person is one whose developmental and behavioural traits are not only superior for his age, but are consistently demonstrated through his or her capacities and achievements. For Gallagher (1975), giftedness can be seen more in terms of an omnipresent superior IQ level which serves as the basis for the ability for internally learned symbol systems. And for Oladele (1987), giftedness can be inferred in a child or adolescent manifesting psychological and physical dispositions for superior learning, high performance in the formative years, and high level of achievement or performance during adulthood.

The Hildrenth definition manifests elements of "weaknesses" as it portrays superiority in terms of traits of capacities and achievements as paramount to giftedness. The Gallagher definition, though not his most recent, appears also to be trapped in the "weak" category with its undue emphasis on omnipresent superior IQ as the basis for every trait of giftedness. The Oladele definition also reflects the weakness variable as it concentrates on superior learning abilities, high performance tendencies and high achievement as yardsticks for judging giftedness. The three definitions, therefore, reflect giftedness in terms of extant grasp of information and are prone to making the concept biased towards one-shot static classifications and elitist labels. Consequently, the definitions will be regarded as weak, given CCL stipulations.

The CCL, on another note, considers definitions of giftedness as "strong" if they stress creative accomplishments over a sustained period of time, dynamic attainments, important contributions to human life and actions which affect significant others in the "real world". As Ware (1991) observed, describing possibilities in definitions of giftedness can be endless, making it difficult for any particular ones in the current literature to fully satisfy the "strong" criteria. It would, therefore, appear that even the so-called weak definitions also possess elements of the "strong" definitions.

Given the CCL criteria for making any definition of giftedness "strong", Correll (1978), Kitano & Kirby (1986) and Cohn

Cohn and Kanevsky (1988) tend to provide descriptions which can be regarded to a large extent as "strong".

Correll (1978) described gifted children as those who constitute some 1-5 per cent of the society and who show outstanding promise of manifest superior characteristics, in general intellectual abilities, specific academic aptitudes, creative or productive thinking, psycho-motor abilities, leadership traits, and achievements in the areas of visual and performing arts. Believing that education for the gifted encompasses more than emphasis on nurturing academic potential, Kitano & Kirby (1986:30) provided a working definition of gifted persons as "individuals of any age who possess superior ability in an area valued by society". As for Cohn et al (1988), giftedness, indeed suggests not just superior attributes (for superiority is relative), but as well entailing unique capabilities in one or more areas of human endeavour ranging from intellectual pursuits, creative abilities, visual and artistic performance tendencies, psycho-social/ leadership attributes and even motor-kinesthetic abilities.

The myriad of definitions about giftedness led Richert (1986) to suggest that there are two major areas of controversy:

i) Definitions in terms of descriptions centering around emphasis on innate versus learned or acquired characteristics, as well as sustained versus sporadic manifestations of characteristics of giftedness.

ii) Identification, with regard to issues of creativity versus IQ, objective versus subjective indications of exceptional potential, actual versus potential for giftedness, and cognitive versus personality characteristics - all in the bid to define giftedness.

To these two areas of definitional issues, Kitano & Kirby (1986) also added a third controversy;

iii) The issue of legal versus inherent status of giftedness, as it concerns the possibility of existing variations between different societies adopting utilitarian definitions.

Regarding these controversies about the concept of giftedness, Feldman (1991) observed that there are now some signs of a paradigm

shift in gifted psychology centering around perspectives, re-orientations, and theoretical and conceptual assumptions. Such paradigm shifts include:

i) Shifting emphasis from high IQ to multiple abilities.

ii) De-emphasizing the trait factor which places emphasis on stable and unchanging characteristics, to development of outstanding characteristics based on psychological orientation.

iii) Shift in emphasis on identification based on congnitive tests to performance based assessments.

Given the nature of the controversies plaguing professional conceptions, experts in the field of gifted education appear to be evolving what may be considered primary qualities of the concept of giftedness. Renzulli (1978), for instance, implied that giftedness is a kind of trisemic overlap of above average ability, high task commitment, and high level of creativity. Tannenbaum (1983) also conceives of the concept of giftedness in terms of manifested characteristics of outstanding general and specific abilities, influence of environment and chance factors, and non-intellective factors all of which must mesh for a gifted child to emerge. Most comprehensively, Richert (1990) described giftedness as human potential in terms of ability, creativity, productivity performance, motivation, emotions and values which must manifest concurrently and to the maximum from childhood to adulthood.

For the purpose of this study, operational definitions of giftedness and talent have earlier been provided in chapter one. However, as Richert et al (1982) recommended, we will aim for a pluralistic conception by referring to giftedness in appropriate combinations that suit identification purposes. Suffice it at this point to conceive of giftedness as a phenomenon

> ... which occurs in the confluence of certain abilities, aptitudes, personality factors and various external social, historical and environmental conditions, ... is a multi-dimensional phenomenon that should not be distorted by inappropriate combinations of data. (Richert et al 1982: 121).

CHARACTERISTICS OF GIFTEDNESS

Before research findings about characteristics of gifted individuals in the 1920's, giftedness was mostly associated with people who are male, physically frail, bookish, bespectacled, eccentric, and with some kind of insanity (Kitano & Kirby 1986). Following, however, the pioneering works of Lewis Terman which started in 1921, more diverse revealations were brought to the fore about characteristics of gifted persons.

Utilising teacher nominations and administering the Stanford-Binet Intelligence Scale series to a sample of children from the California cities of Los Angeles, San Francisco, Oakland, Berkeley and Alameda, Lewis Terman by 1924 had selected about 1,444 boys and girls within the age range of eight to twelve years who were presumed to be gifted. Using the same procedures, an additional 356 children were added to the sample from across other American cities. Also included were children who did not necessarily score as much as the 140+ IQ level used as the cut-off point in the criteria for selection; such children nevertheless were deemed to have shown outstanding artistic and musical abilities. The final sample of the Terman study came to 1,528 (856 boys and 672 girls). Terman's findings were subsequently published in two volumes by 1926.

Findings of Terman (1926) have been summarised by other writers who highlight in the main a constellation of five characteristics (Gallagher 1975, Seagoe 1975, and Correll 1978):

1) Gifted children manifest slightly superior physical and health characteristics in comparison to average children of the same population.

2) In terms of achievements in reading ability, language usage, arithmetic reasoning, science, literature and the arts, gifted children manifest superior (and most often across the board) intellectual traits over their average peers.

3) Interests of gifted children are often varied and spontaneous, especially in terms of knowledge cultivation and hobbies.

4) Gifted children compared to their less gifted peers are often less inclined to boast of their abilities. They also manifest temdencies for being more trustworthy, sociable, emotionally stable and less prone to cheating behaviours.

5) Compared to their average peers, the intellectual superiority and other outstanding or even sometimes deviating traits of gifted children are often sustained into adulthood.

Follow-up studies intermitently carried out by Terman between 1927 to 1952, and subsequent replications by some of his colleagues, all gave greater credence to the original findings of Terman, using even larger samples of subjects (Oden 1968, Sears & Barbee 1977, and Sears 1977). And from more indications, continuing research keeps confirming the findings of Lewis Terman (Kitano & Kirby 1986, Cohn et al 1988, Kirk & Gallagher 1989).

Despite the fact that research findings have since re-confirmed the many general characteristics of gifted persons, factors such as overemphasis on the intellectual dimension of giftedness, the tendency for the gifted to sometimes conceal their potential and the likelihood of resorting to negative traits in the face of hostile environments do mitigate against objective identification of confirmed characteristics of gifted children and youths (Correll 1978, Richert et al 1982, and Awanbor 1987).

As argued by Correll (1978) and Cohn et al (1988), children and youths who are potentially gifted may sometimes manifest apathetic characteristics against their true nature if they find the environment inimical to their special needs. When this occurs, apathetic traits of gifted characteristics such as gullibility, dislike for routine, sacarsm, critical attitudes toward others, stubborness and even absenteeism dominate the behaviour of such children and youths (Seagoe 1974, Pendarvis 1981, and Cohn et al 1988). In Nigeria, it is also thought of that due to the lack of conducive psychological conditions and environment, many school children may have shown signs of apathy towards the school curriculum, absenteeism from school routines, rudeness to teachers or elders and even crime (Abang 1981, and Kolo 1989). In any case, both positive and apathetic traits of giftedness do form a cluster of general characteristics of gifted individuals much of which has been researched into and reviewed widely. Renzulli et al (1976) in an extensive review of

the literature, for instance, asserted that gifted persons possess certain inborn and unnurtured distinct characteristics that often mark them out from their average mates. More recently, the Educational Information and Resource Center-EIRC (1992) provided a comprehensive list and description of the general characteristics of gifted children and youths. Eleven general characteristics regarded as cognate in this study are recounted herewith:

i) The capacity to grasp and retain knowledge and information excellently. Hence the gifted child exibits such traits like quick comprehension of meanings, quick and accurate responses, critical questioning attitude and being smart about transferring learning to new situations.

(ii) The ability to convey ideas critically. Examples of this cognate characteristic include the ability to follow easily logical sequence and order in assigned tasks, utilisation of extensive and appropriate use of vocabulary, and being very selective, critical and fluent in manipulating bits of knowledge.

(iii) Being very skillful in abstract thinking with ability for making generalizations, sensing cause and effect relations, understanding and application of rules and foreseeing new possibilities.

(iv) Versatility in the utilisation of a wide variety of resources. Examples include high levels of commitment to tasks ahead, self-reliance in problem situations and ingenuity in seeking for help.

(v) Power for creativity and inventiveness. The gifted child, for instance, shows traits of curiosity and originality, is alert to possibilities, derives joy in acts of experientation, is quite adept at using trial and error approaches in daily life, and is fond of being able to find ways for extending his own ideas.

(vi) Exibition of the ability to work independently. This characteristic manifests in the form of the gifted child's ability to plan, organize, execute and judge situations he is involved in.

(vii) The gifted child assumes and discharges responsibility by showing his manifest attributes of perseverance, desire to forge ahead in almost every circumstance and showing the will-power to succeed.

(viii) Adjustment to new situations on an easy note. Examples of such a characteristic include the gifted child's capability for understanding and accepting reasons advanced for genuine changes, being anticipative of outcomes, maintenance of optimistic attitude toward new adventures and showing the feeling of being challenged by new ideas.

(ix) Display of physical competence; demonstrated by qualities of being alert, active, energetic, and coping well with nervous tensions as well as being generally healthy.

(x) Appreciation of social values. Thence, the gifted child is very easily able to sense right and wrong, respects the rights of others, is very willing to share, contributes constructively in group activities, maintains on a continuous basis spurts of growth and changes in attiudes and behaviour, and is very conscientious and truthful.

(xi) Capability for establishing favourable relationships; reflected in the gifted child's tendency for self respect, permanence of mood, sense of humour, friendliness, being helpful and co-operative at all times.

Following continued research in the field, more revealations about these characteristics have enabled psychologists to further extrapolate specific characteristics of different dimensions of giftedness,

SPECIFIC CHARACTERISTICS AND PSYCHOLOGICAL NEEDS OF GIFTED CHILDREN AND YOUTHS

There has been continued debate on the specific dimensions into which giftedness and talent can be compartmentalized. What have not been doubted are these specific psychological needs of children and youths who evidence these characteristics. It becomes pertinent, therefore, to attempt a compartmentalization of the general characteristics into specific traits; but doing so by highlighting the needs of each specific group in order to facilitate a better understanding of the personality gestalt of such gifted children and youths.

Many writers place more emphasis in their dicussions on general intellectual ability, specific academic aptitude, creative or productive thinking, leadership and social ability, and ability in visual and performing arts, all of which are regarded as specific dimensions of giftedness and talent (Gallagher 1975, Correll 1978, Lehman & Erdwins 1981, Kitano & Kirby 1986, Cohn et al 1988, Kirk & Gallagher 1989). In defining giftedness and talent, however, the U S O E definition adds psychomotor ability to the five specific groups listed above (E.I.R.C., 1992). The absence of emphasis on exceptional psycho-motor abilities of giftedness has been attributed to the prevalent belief that the manifestation of such characteristics is often adequately catered for in society (Gallagher 1975).

In spite of the seeming proliferation of compartments of giftedness, Gardner (1983) maintains that there are seven kinds of human basic intelligences from which gifted ability could blossom and into which specific dimensions of giftedness can be subsumed. These distinct kinds of giftedness include linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, personal knowledge of self and personal knowledge of others. It is reported that Howard Gardner has so far been able to demonstrate these specific dimensions of giftedness with identified gifted children and youths involved in Project Spectrum; a research project in gifted education conducted at Harvard University (Strong 1985, Feldman 1991).

For the purpose of this review, concentration is given to the six kinds of specific dimensions of giftedness mentioned in the U S O E. definition. These are:

General Intellectual Giftedness, Specific Academic Giftedness, Creative Giftedness, Leadership and Social Giftedness, Giftedness in Visual and Performing Arts and Psycho-motor Giftedness.

General Intellectual Giftedness:

Not many writers have attempted any serious demarcation between general intellectual giftedness and specific giftedness in academic aptitude. Bloom (1982), Bloom & Associates (1985), Heward & Orlansky (1984), and Kirk & Gallagher (1989) all made no distinction between characteristics of general intellectual and specific academic giftedness. Overlaps in these two aspects of giftedness, in fact, appear to make such a distinction an artificiality. But the thrust in research about the relationships between creative potential or productive thinking and global intelligence have shown that different views exist in gifted education concerning general intellectual and specific academic giftedness (Getzels & Jackson 1962, Torrance 1972, 1977b, and 1980).

General intellectual giftedness implies an outstanding ability in the general academic fields usually on a broad basis (Kitano & Kirby 1986). Such an ability often spans across a cluster of academic disciplines in the social sciences, humanities, natural sciences and technology. It would appear, however, that specific academic giftedness is often manifested in the form of high aptitude for just one area of the broad disciplines. To Kitano & Kirby, most of what is presently known about the characteristics of general intellectual giftedness stemmed directly from the works of Lewis Terman. With further work on Terman's findings, however, it became possible to discern characteristics and needs of children and youths who are spcifically academically gifted from the known traits of those who are generally intellectually gifted (Kitano & Kirby 1986).

Karnes & Associate (1978), and Renzulli et al (1976) were able to demonstrate the following characteristics said to be directly associated with children and youths who are inclined toward general intellectual giftedness:

Acquisition and possession of advanced vocabulary for chronological age.

Manifestation of early interest in books and reading them with keen avidity.

Early reading ability, most often self taught at as early as 2-3 years of age.

Ability for independent reading with a high frequency of preference for adult level books.

Tendency for rapid learning and remembering of a great deal of factual information.

Quick perception of cause-effect relations.
Manifestation of a high level of curiosity and an inquisitive attitude.
Fondness for being with older children.
Zeal for pursuing interest in collection of things from which knowledge can be derived.
Long attention span at significant levels compared with peers.
Fondness for setting high standards for self to achieve.
Emitting of a matured sense of humour.
Higher level of organisational traits in terms of planning, problem solving and abstract thinking when compared to peers.
Tendency for being fast about generalizing from principles and drawing similarities and differences in intellectual situations.
Possession of an unusually vast memory and knowledge about a variety of topics.
Easily becoming bored with repeating routine tasks (i.e. in the classroom).
Showing concern for ethical issues, often emitted by tendency to question right and wrong, as well as egaging in adult topics like religion and politics.
Source: Kitano and Kirby, 1986:70.

These characteristics notwithstanding, Clark (1983) and Seagoe (1975) strongly believe that intellectually gifted children often exibit negative characteristics like gullibility, perfectionism, rebelliousness, omission of details, difficulty in accepting illogicalities, dislike for routine and drill, boredom with regular curriculum, impatience in terms of waiting for average students to catch up, penchant for dominating discussions, refusal to take part in

activities in which they do not necessarily excell, and, a critical attitude towards other people.

Going by the characteristics so enumerated, Kitano & Kirby further listed the educational needs of children who are generally intellectually gifted to include:

(a) Obtaining new and challenging intellectual information.
(b) Pursuing special intellectual interests.
(c) Desirousness for having opportunities to communicate knowledge.
(d) Receiving appropriately accelerated pacing of educational development.
(e) Engaging in inductive thinking and problem solving.
(f) Applying knowledge for realistic problem solving.
(g) Learning to respect individual differences.
(h) Setting goals which are realistic to self and others.
(i) Dealing effectively with moral and ethical issues.

Specific Academic Giftedness:

Specific academic giftedness implies superior talent in particular areas of intellectual disciplines. Examples include the verbally or linguistically gifted, and the mathematically precocious or logico-mathematically talented (Fox & Durdeen 1982, and Gardner 1983). Specific academic giftedness could also be in any of the science or technology disciplines in which, apart from productive knowledge output, the gifted also manifest their outstanding talent through unique and valuable discoveries and inventions.

Bloom (1982), Bloom & Associates, (1985) and Bartz (1982) carried out extensive interviews with parents and outstanding teachers of known gifted people. The researchers extrapolated a number of characteristics to describe children and youths who could be potentially gifted in specific academic disciplines. Some of these characteristics include:

Capability for long attention span particularly in learning tasks or activities related to specific academic areas like mathematics, problem solving, learning a new language and story telling or writing.

The ability to understand concepts, methods and terminologies in an academic area of speciality and at an advanced level for the person's level of experience or educational placement.

A great deal of ability for transferring knowledge of concepts from the specialized field and applying it to activities in other subject areas.

Willingness to devote a lot of time and energy to achieving high standards in specific academic areas.

Zeal for competition in specific academic areas.

High level of motivation to do the best and excel in a chosen specific academic area.

The mental and psychic power for rapid learning in a specific academic field.

Persistent and goal directed endeavour in all activities concerning their specific academic areas.

Psychological peculiarities like extrovertedness and field-independent styles of thinking.

Tolerance in situations of ambiguity.

Tendency for taking risks and the penchant for correct guesses in specific academic fields.

Judging by these characteristics of children with outstanding academic aptitudes, Kitano & Kirby (1986) opined that their educational needs include creating for them opportunities for:

(a) acquiring fundamental competencies in their area of academic aptitude;

(b) acquisition of advanced technical vocabulary and knowledge in a specific academic area;

(c) interaction and mentorship guidance with leaders in the specific area of academic interests;

(d) applying knowledge to current problems of a specific area of academic interest;

(e) persistent interest for communicating knowledge in specific subject area to others;

(f) keeness for further developing potential abilities in other academic and social areas,

especially those related to subject areas in which interest is manifested.

From the list of characteristics of children and youths manifesting traits of giftedness in specific academic areas, it is evident, therefore, that in terms of long attention span on learning tasks, the ability to grasp new and relevant information with exceptional ease, the tendency for easy transfer of knowledge, etc., there appear to be those characteristics which overlap with traits of giftedness in general intellectual ability.

Creative Giftedness:

Thrusts in the area of outstanding creativity began to have prominence in the literature of psychology of giftedness through research work and reports of Torrance (1962, 1965, 1966 and 1977b), as well as the similar works of Getzels & Jackson (1962) and Getzels (1975).

In the words of Torrance & Torrance (1973) creative thinking can be described as:

> ... a natural human process in which a person becomes aware of a problem difficulty or gap in information for which he has no learned response; searches for possible solutions from his own past experiences and those of others; formulates hypotheses about possible solutions; evaluates these possible solutions and tests them; modifies them and retests them; communicates the results to others. p. 6.

The mental capacity for thinking creatively in this process according to Torrance & Torrance involves tendencies toward emotional, irrational and preconscious dispositions. Thus, every individual has the capacity to think creatively as they are faced with daily problems which entail finding solutions either from experience, immitation or even trial and error. However, creative thinking at a higher level than is recognised for the average population is what is implied by creative giftedness. Such a very high level of creative thinking entails exceptional or outstanding dispositions for fluent, original, elaborate and flexible idealisation.

According to E.I.R.C. (1992), creative thinking skills entail a cluster of abilities some of which include:

Being able to rearrange elements of thoughts, sensing problem situations, spontaneous reactions, mental visualization and sensing of discontinuities and inconsistencies. Thus, creative giftedness can be seen to refer to the predisposition for a high capacity to productively generate unique ideas and solutions which can prove very useful and valuable for soceity. Research reprts by Taft & Gilchrist (1970) reveal that creativity at a level of giftedness can be found among not only the artists or art professions, but also among architectural, technological and scientific fields of human endeavour.

Studies by Torrance (1966), Taft & Gilchrist (1970) and Lucito (1972) reveal that creatively gifted children and youths tend to exibit a unique set of characteristics as follows:

High levels of inquisitiveness.
Tendency to do almost everything in their own way.
Tendency to be highly curious in experimenting with everything in hand.
Power for very active imagination.
Ability to conceive of variety of solutions to problems.
Being able to respond cleverly to unexpected questions.
Ability to express non-conforming thoughts and ideas.
Ability to produce ideas which are original.
High suseeptibility for willingness to take risks.
Keen sense of humour.
Sensitivity to the aesthetics.
Lack of interest in depth details.
Nonchalance to social acceptability.
A high capacity for inventiveness.

According to Seagoe (1975), some of these unique characteristics may lead the creatively gifted child or youth to insist on inventing things for himself or herself, develop resistance to pressures to conform, become frustrated with externally imposed deadlines, and to engage in rebellious behaviours. Hence, according to Kitano & Kirby (1986), creatively gifted children and youths have a special educational need for encouragement in creative efforts; pursuing opportunities in their areas of interest with little or no constraints; appropriate guidance in channelling their talents rightly; and an understanding attitude in situations where value is attached to social conformity.

Leadership and Social Giftedness:

Possession of outstanding qualities of leadership is most often described together in the literature along with high social acceptance (Bass 1981, and Covey 1990). According to Sisk (1992:3) "... leadership involves influencing others in individual or group efforts, and leadership calls for skills of persistence, forecasting, problem solving, and action". Leadership and social giftedness, therefore, implies the exceptional ability to maintain or change followership phenomena in any, or all of social, political and economic situations.

From the research findings and writings of Forster (1981), Bass (1981), Passow (1982), Gallagher (1983), Addisson (1984), Feldhusen & Sisk (1983), & Sisk and Shallcross (1986), characteristics of children and youths with potential for outstanding leadership abilities and traits of exceptional social acceptability include:

Involvement in, and positive contribution to social enterprises on an active basis.

Popularity with peers.
Ability to interact with ease amongst other people.
Being easily adaptable to situations.
Tendency to be domineering and directive of others.
Often a star character in sociogramic situations.
Dependability for carrying out responsibilities.
Possession of genuine knowledge of getting things done devoid of egoistic tendencies.
High level of self expression.
Traits of enjoying being in company of others.
Ability to stimulate others towards positive behaviour.

Despite the possession of such qualities by potentially gifted leaders, Kitano & Kirby (1986) expounded that such children and youths also evidence a strong need for success and recognition, being highly susceptible to rejection, frustration with inactivity and slow progress towards target goals.

Given these positive and negative traits, Kitano & Kirby (1986) went on to list the special educational needs of children and youths with potential for outstanding leadership abilities to include:

The desire by them for opportunities in group interactions;
Experiential climates for being able to set realistic goals;
Guidance in perceiving a variety of approaches to reaching set goals;
The desirability for help in the need to learn to work with individuals who have different values; Help in the process of acquiring and stimulating awareness of the interdependent nature of human problems and life generally;
The need for help in acquiring and appreciating individual differences and the value of human life.

Giftedness in Visual and Performing Arts:

Giftedness in visual and performing arts is used in most of the literature in reference to excellence in music, art and drama. Shaefer & Anastasi (1968), Anastasi & Shaefer (1969), Getzels (1979) and Bloom (1982) put forward the following distinct characteristics of sub-categories of children and youths gifted in the visual and performing arts.

(a) Giftedness in Music:

Ability to make original tunes from musical or music-related instruments and objects.
Love for variety of music.
Easy recall of musical tones, rythyms and melodies.
Being able to easily pick out background sound when music is played and identifying the particular instruments involved.
Easily learning to play musical instruments.
Possession of a perfect pitch for singing.

(b) Gifted Artistic Traits:

Fondness for taking to drawings, and paintings at free times.
Showing traits of extra-ordinary imagination.
Being able to draw a variety of things well enough to be appealing to many people.
Capacity for remembering very well, details of structures or constructions.
High interest in artistic activities e.g. crafts.
Long attention span at activities involving artistic problems.
Ability to plan composition of art works.
Willingness to try out variety of media, materials and techniques.

Ability to produce unique solutions to artistic problems.
Tendency to produce highly original work with ease.
Showing advanced technical skills in arts.
Signs of being adept at imitating or representing movements.
Frequency at asking for explanations and repeatition of instructions that have not been clearly posed.
Tendency for responding to unusual subjects in the arts.
Keeness at observing the world around.
Being good at setting highly qualitative standards in artistic works.
Showing interest in art works by others.

(c) Giftedness in Dramatic Abilities:
Keen interest and zeal in dramatised activities.
Being very easily capable of narrations with the use of gestures and facial expressions.
Very adept at role playing or imitations.
Ability for attention-catching performances.
Capability for creating plays which are original.
Being good at utilizing time and creating suspense.
Kitano & Kirby (1986) elaborated more on characteristics of children and youths gifted in the visual and performing arts by cautioning that their positive traits when strongly manifested often results in a kind of resistance to any attempts capable of interrupting their activities of interest. Such children and youths, therefore, further manifest special needs for specifically specialized instruction in talent area, encouragement in the development of knowledge in other related fields, and helping them to integrate their abilities and sensitivities to other aspects of life.

Giftedness in Psychomotor Abilities:

Gallagher (1975) observed that giftedness in psycho-motor abilities has not received much emphasis in research literature. However, some well known characteristics of children and youths who are psychomotor gifted are reviewed herewith.

Psychomotor giftedness implies outstanding ability in performing physical or kinesthetic activities.

EIRC (1992) listed the characteristics of children and youths with potential for psychomotor giftedness to include:

Endowment with energy and seeming needs for considerable exercise to enable him or her stay happy.
Enjoying participation in highly competitive games.
Consistently outstanding in many kinds of competivitie games.
Being one of the fastest runners in school or class.
Being one of the best physically co-ordinated in school or class.
Fondness for outdoor sports, hiking and camping.
Often willing to spend much time in practicing physical activities like ball juggling and passing, tennis playing, basket shooting, volley digging and muscle flexing.
When children and youths who are psychomotor gifted are not recognised and do not have their needs met, they may channel such energies into socially unacceptable activities (Abang, 1981). Thus, their psycho-educational needs present themselves largely in terms of nurturing their specific talents.

The characteristics reviewed here are not mutually inclusive. No doubt, continuing research will reveal many more traits about gifted and talented students. As observed by Kitano & Kirby (1986), not all children who are potentially gifted display all these characteristics, adding that

> ... the positive traits usually considered possible signs of giftedness may go unnoticed in the presence of more salient negative behaviours that can also be characteristic of giftedness. p. 87.

On a general note, Cohn et al (1988) and EIRC (1992) list a couple of negative characteristics sometimes manifested by gifted children and youths.
According to the EIRC Gifted Identification Handbook, such characteristics tend to screen gifted children and youths out of programmes during nominations, assessments and provisions of special educational services, and they include:

1) Boredom with routine tasks and refusing to carry out rote homework.
2) Difficulty in getting such children to easily move on to other topics apart from those ones that interest them.

3) Being self critical and impatient with failures.
4) Fondness for criticising others; even their teachers.
5) A penchant for disagreeing vocally with others; their teachers inclusive.
6) Sometimes fond of making jokes or punning, at seeminly inappropriate times.
7) Exibiting traits of emotional sensitivity in the form of over-reacting, getting easily angry or even showing preparedness to cry when things go wrong.
8) May not show interest in details of things.
9) Could sometimes hand in messy work.
10) At times, may refuse to accept authority by becoming non-conforming and stobborn.
11) Showing a domineering attitude of others.

These are the kinds of characteristics that easily come to the fore in the behavioural traits of gifted children and youths once their psychological and educational needs are not adequately met. For, as is often assumed by many, it is erroneous to think that the gifted child, because his or her potentialities are said to be naturally endowed will achieve to the fullest of his capacities even in the absence of formally organised special programmes (Correll 1976, Richert 1991).

RENOWNED GIFTED PERSONS

Perhaps, nothing demonstrates how characteristics of giftedness are unique to persons so blessed than examples of the lives and achievements of such renowned individuals themselves. Their lives and achievements are often testimonies to their outstanding capabilities in respective life endeavours that have been so valued by societies in which they lived and contributed to.

Bertrand Russell is recognised as one of Britain's gifted intellectuals. Marie Curie was a renowned scientist recognised by the French as a gifted academic with a specialized aptitude for physics. Wole Soyinka, Nigeria's renowned poet and playwright is in the same category of people who are gifted in specific academic areas of knowledge. Buckminster Fuller typifies a highly creative individual whose contributions became renowned in America and Europe as a gifted person. For Martin Luther King Jr., he represented a good example of

a gifted leader in the American society. The music and dance styles of Isadora Duncan were so remarkable that she became recognised as a person gifted in the aspect of visual and performing arts. Edson Arantes do Nascimento is, to date, the world's most recognised footballer; putting him in the class of psychomotor gifted persons. And in spite of her dual handicap, (deaf and blind), Helen Keller was gifted as an author.

Bertrand Russell (1872-1970):

The life and achievements of Bertrand Russell are well documented by Goertzel & Goertzel (1962), and Ewart (1972). Turned an orphan at age one, Bertrand grew up as a silent and shy boy. Although he was said to have disliked anything about calculation while he was still young, he grew up in Britain writing three popular volumes on Mathematics. From an early age, Bertrand's intellectual precocity was manifested through his voracity for reading and memorizing poems. By middle age, Bertrand Russell through his intellectual giftedness had grown to become a world renowned British philosopher, mathematician, teacher, writer and political rebel, and is considered one of the greatest thinkers of modern age. Known to have been fluent at college in German, French and Italian, Russell's books spanned the areas of philosophy mathematics, science, ethics, sociology, education, history, religion, and politics; an effort achieved through writing no less than an average of three thousand words per day. Such was the life and times of Bertrand Russell as an intellectually gifted individual who capped it all with a prestigious Nobel Prize for Literature.

The renowned Nigerian statesmen Dr. Nnamdi Azikiwe in his youthful days returned from the United States of America with chains of degrees across disciplines like English, Philosophy Journalism, and Politics. His anti-colonial stand, activities and writings in the colonial era in British West Africa stood him out as a gifted orator and intellectual.

Marie Curie (1867-1934):

Goertzel & Goertzel (1962), and Collier (1972) typified Marie Curie (a Polish-French woman) as a fitting example of specifically academically gifted person. Even at age four, Marie was said to have become interested in memorizing the names of physics equipment used by her father who was a science teacher. She demon-

strated elements of precocity at elementary school by learning and speaking German, French and Russian at an early age. Her interest and efforts in scientific research soon propelled her to become a co-discoverer of radium; bagging a Nobel Prize for Physics along with other scientists. Her penchant for scientific research also eventually earned her the place of being the first woman to occupy the headship post at the French National Physics Laboratory in 1906. That opportunity again led her to earn, for a second time, another Nobel Prize for Physics, having discovered radium and polonium, and the isolation of pure radium. Without doubt, Marie Curie lived a life of talent in physics.

Wole Soyinka (1938 -):

The story of Soyinka (a Nigerian writer) is vividly sketched in the Weekend Concord of 17th July, 1989 (a Nigerian Saturday tabloid). His teacher was reliably quoted as having claimed that Soyinka taught himself to read and write using the bible at the tender age of five. Soyinka was also claimed to have developed exceptional use of vocabulary and language (both English and Yoruba - his native language) from his elementary school days.

The story has it that having left the University of Ibadan with a third class degree in the 1960's, Wole Soyinka was to register again at Oxford and to pass out later with a first class honours degree in English. He thereafter took up a teaching appointment with the then University of Ife from where Soyinka wrote a great deal of plays, poems and literature. His prowess was recognised worlwide when in 1989 he won the prestigious Nobel Prize for Literature.

Like Marie Curie, Wole Soyinka is a good example of a specifically academically gifted individual. His can be described as verbal or lingustic giftedness. While Marie Curie was renowned in physics, Wole Soyinka made his mark in Literature.

R. Buckminster Fuller (1895-1983):

Buckminster Fuller was one of the most creatively gifted American thinkers of the 19th century (Kitano & Kirby 1986). Accounts by Rosen (1969) and Hatch (1974) point to the fact that Fuller, who was born into a family of non-conformists, began showing his creative potential right from the age of six when he

was barely out of kindergarten. Given toothpicks and dried peas to play with, he built these into a tetrahedronal octet truss - an eight sided triangular shaped object designed from three squares.

At elementary school, what often brought Fuller to l[illegible]gger heads with his teachers was the persistent questioning attitude he cultivated. His rebellious nature also earned him expulsion from Harvard twice, and consequently never completing his formal education. In spite of the dominance of some negative traits of giftedness, Buckminster Fuller was quite outstanding over his classmates in almost all his school subjects (Rosen, 1969).

Vacationing at Bear Island in Maine was to open up the floodgates of creative talents in Buckminster Fuller. When he was just ten years old, he invented a method of sailing boats using unbrellas, and thereby solving the problem of people having to face backwards whilst rowing. At the same Island, he also invented a record holder. Among his other life inventions include what became known as the Dymaxion House and two versions of the Dymaxion cars in 1927, 1933 and 1943, respectively. And even with lack of formal training in architecture, Fuller was to design and invent the geodisc dome popular world-wide today for use in theatres, defence facilities and residences. That was an invention for which Fuller was to be awarded the Royal Gold Medal for Architecture and the Gold Medal Award of the National Institute of Arts and Letters.

Martin Luther King Jr. (1929-1968):

Geortzel & Goertzel (1962) and Kitano & Kirby (1986) account for the life of Martin Luther King Jr. as a gifted leader with charisma. It is said that at nursery school, King was noted for his ability to develop very good peer relations by involving his classmates in kite and model-plane making. At a tender age, he began to earn substantial amounts of money as a vendor, working on the job to become assistant manager to a league of other boy vendors at the age of thirteen.

Martin Luther King Jr. was known to have been placed on a special programme for gifted students while at college. He was said to have been quite popular with large groups of friends, and once got elected as president of the students' body of his college. At age twenty six, he had earned a Ph.D from Boston University.

King's main involvement as a gifted leader was in the struggle against racial segregation in the United States. With his oratorical skills, visionary speeches, inspiring personality, an unflinching faith as a church leader, King fearlessly, and in the face of all intimidation, threats and physical attacks kept on the civil rights struggle. Between 1960-65, he was actively in the forefront of non-violent demonstrations against racial segregation in the United States with a very large following. The struggle he led resulted in the passing of the Civil Rights Act of 1964 and he capped it with the Nobel Prize for Peace. Although Martin Luther King's activities were to attract the assassin's bullets in 1968, his birthday is today marked as a national holiday in the United States of America.

Isadora Duncan (1877-1927):

Goertzel & Goertzel (1962) and Stoddard (1970) vividly account for the life of Isadora Duncan whose ability as a gifted dancer took her to several parts of Europe from America.

Isadora showed her dislike of elementary school and sought permission from her parents to leave school in order to open a dance school where she taught the art (of dancing) to children when she was still a teenager. She was known to have composed several dances to music. It was, however, in Paris that she began to become famous for starting what has been described as an artistic revolution in dance (Stoddard, 1970). Her prowess in dancing was so great that she was acclaimed as far as Russia. Such was the life of Isadora Duncan, regarded as gifted in the visual and performing arts.

Edson Arantes do Nascimento a.k.a. Pele (1941 -):

Most that is known about this genius of football is in his footballing career through which he became a household name the world over. Gelman (1980) and Longman (1981) fully accounted for Pele's life as a gifted footballer. Pele's keenness for football led him to become so desirous of the game at a tender age that when he was not playing stuffed rags around the streets of the Brazilian city of Bauru, he was bouncing a grapefruit around his family house on his head, feet, shoulders and knees.

At the age of sixteen, his superb skills in dribbling through opponents, high sense of ball anticipation, speed on the

ball, accurate ball passing talents and amazing fitness earned him an inevitable shirt in the Brazilian national football team. At age seventeen, Pele had appeared in the finals of the world cup held in Sweden in 1958, becoming the youngest player to have then appeared in the Mundial. From then, this "black pearl" (as he was later to be referred to in European football circles) was to hold the whole soccer world spellbound for over a decade and half with his exceptional ball juggling ability and adept goal scoring power. According to Gelman (1980), Pele was a genius; a marvelous combination of brain and brawn.

Pele's greatest assets in his footballing career were his exceptional psychomotor abilities for putting the ball under the control of different parts of his body (except the hands), great sense of use of space, very good speed on the ball, pulsating shots with the ball, ability to jump above opponents to powerfully head the ball, and above all, deceptive moves on the ball to glide through packs of opponents and to score penalty or spot kicks. Before Edson Nascimento retired from his footballing career on 1st October, 1975, he had been capped over 100 times for Brazil and scored a total of 1,261 goals since he turned professional with Santos of Brazil in 1956.

Helen Keller

Perhaps no writer eulogises the personality of Helen Keller more than in her own autobiography (Keller, (1959). Since she became blind and deaf at tender age, Helen had no full advantage of sightedness and auditory experience - a hopeless situation to many people and societies. Left with just the tactual, olfactory and taste senses, Helen, against all odds, got adjusted to a simple life style around her family and particularly the family dog. And although described as markedly egocentric in her social behaviour, she was said to have had control of the shut-out from visual and verbal windows of the world which were necessary for the experience of reality and conventional formal education (Cutsforth, 1951).

The turning point in Helen Keller's life was to come with the advent of Annie Sullivan who taught her tactual reading and writing to convey meanings of her thoughts to others. Perhaps that was all

Helen needed to open up her latent potential as a gifted writer. She quickly mastered tactual learning and soon began to convey her experience to her teacher and the world. By adulthood, Helen had not only authored her own biography, but had also had a couple of publications about her personal emotions, attitudes, and feelings of the world around. From her published works, it is evident that in her life time, she mastered almost as many concepts through tactual sensing as non-handicapped persons gain through sight and anditory senses. Thus, Helen Keller made her mark as a gifted writer, though dual handicapped.

Perhaps in Nigeria today, a good number of gifted individuals exist whose exceptional capabilities may not have been recognised world-wide. Kolo (1989) listed such individuals like Chika Opala a.k.a "Zebrudaiya" (a comedian); Adamu Danmaraya and Sumny Ade (musicians of national and international fame); Abdullahi Musa (a mathematically gifted young man now on scholarship abroad to read computer science) as some of those gifted Nigerians.

Apart from Helen Keller, such other handicapped persons like Steve Wonder (the blind African-American renowned for his music) serve as excellent examples that giftedness is not limited to non-handicapped persons only.

The brief sketches of renowned gifted persons accounted for have been used to demonstrate the level of outstanding performance or achievement which gifted persons are capable of contributing. The contributions of Bertrand Russell, Buckminster Fuller, Marie Curie, Wole Soyinka, Martin Luther King Jr., Isadora Duncan, Edson Arantes do Nascimento (Pele) and the genius in Helen Keller have all proven how potentially valuable to the world the gifted could be.

GIFTED EDUCATION: STATE OF THE ART

In the opinion of Gallagher (1975), the decision as to whether to specially educate the gifted or not usually marks the difference between what a society is, and what it could become. In societies with established programmes for the gifted, philosophical sociological and professional issues do come to the fore about decision making. In other societies where special programmes for the gifted are still in their infancy, the same issues still surface with

regards to decision making. The extent to which addressing these issues influence decisions about the theory and practice of special education for the gifted determines largely the state of the art.

As in most areas of special education, the United States seems to be in the forefront of societal provision of special services for gifted children. Heward & Orlansky (1984) recounted how a number of public schools in some states had sought for, and utilized, flexible promotion, rapid advancement classes and enrichment programmes to cater for the special needs of high achieving children as far back as to 1867 running through 1900 to the 1920's. Heward & Orlansky also accounted for how the work of Sir Francis Galton in 1869 and the later works of French psychologists, Alfred Binet and Theophile Simon in 1905, had culminated in the development of intelligence tests which could be used to determine the IQ of gifted children at Stanford University.

In some other parts of the world, starting formal special programmes for the gifted appeared to have been triggered by events at national levels which tended to have called for concerted efforts to tap the potentialities and capabilities of gifted persons (Kitano & Kirby, 1988). In the former U.S.S.R. and Japan, for instance, the adventures and calamities of the second world war appeared to have triggered the beginning of identification and educational service programmes for the gifted (Kolo, 1989). In both countries, the calamities suffered following the war made it inevitable not only for them to rebuild, but also develop their own equally potent weapons if only to defend themselves. To do this in record time, gifted scientists were sought in such places as the U.S.S.R. and Japan to set the pace for outstanding inventions valued by society.

In the USSR, special programmes for the gifted were launched and code-named Sputnik. And by 1958 when Russia tested her first atom bomb, the value of gifted education became very clear to its cold-war rival, the U.S.A. (Kitano & Kirby, 1986). And this was so because given the level of development of Russia, which had also been devasted by the War as at 1945, it was unimaginable to U.S. leaders that just a little over one decade after, the U.S.S.R. could achieve such acientific feats thought to be possible only in "developed" societies.

In Nigeria, the publication of the National Policy on Education (1977, and revised 1981) as well as the foresightedness of two Ministers in the Federal Ministry of Education (Dr. Sylvester Ugoh and Professor Jubril Aminu) in the 1980's were more directly responsible for the coming into being of special programmes and education for gifted children (Oladele 1987, Kolo 1992). Summing up this development, Milaham & Obi (1991) and Kolo (1991) described events leading to the launching of "Operation Catch the Genius" in 1987, the setting up of selected schools as centres of excellence which were supposed to operate as magnet schools for the gifted, and the establishment of a special school for the gifted (SULACAD) in 1989 as some of the efforts made by the Federal Ministry of Education. But as the National Committee on Education for the Gifted and Talented Children was to note, these developments needed to be complemented with the multiple assessment criteria and instruments necessary to be sure that those who are placed in special programmes are truly gifted (NCEGTC, 1996).

The Need for Special Programmes for the Gifted:

The history of specially educating the gifted has been replete with controversies surrounding the desirability or otherwise of gifted education programmes. Antagonists of special education for the gifted readily use the argument of equality of educational opportunities and the universializing of access to education as the main issues why gifted education is seen as undesirable. For while the handicaps of most exceptional children readily provide the point of justification for equalizing access and opportunity in terms of special education, the special needs of the gifted are not apparently manifest, neither is giftedness labelled as any form of handicap deserving special programming. The result is that in an attempt to justify special education for the gifted, experts in this field have been kept on the defensive most of the time, especially in developing countries.

Correll (1978), and Kitano & Kirby (1986) articulated four points justifying the need for special programmes and services for gifted children and youths.

1) Equality of educational opportunity: This concept is usually seen in terms of universalizing access to education for all

children as well as providing them with the same quality of education. Thus, special eduction for the gifted is erroneously seen as elitist in inclination as opposed to the need for mass education for all children. The notion of equality of educational opportunities as it affects the gifted, however, implies education that is commensurate with the needs and abilities of every one. In other words, equalizing educational opportunities should not just stop at universalizing access and providing education for all; it should be extended to imply education that is also commensurate with the needs and abilities of every one. Of course, then, we know that the needs and abilities of gifted children stand them out from the bulk of the population, and thus, the justification for special programmes for them in order to meet their needs.

ii) The need for special support: The erroneous assuption by many about the gifted is with regards to the "cannon ball" theory (Kirk & Gallagher, 1989). The theory assumes that with the potentialities the gifted are naturally endowed with, they are usually bound to achieve to their fullest abilities. Exponents of this argument put forward that whether or not the gifted are specially provided for, they can always succeed to their fullest potential. But research reports tend to point to the fact that most potentially gifted children do not achieve up to the level of their abilities unless their needs are specially met (Zettel & Ballard 1978; Goertzel & Gertzel 1978; and Ladjoie & Shore 198.). The need for special programmes for the gifted, therefore, seems justified on the basis of the special help they need to meet their presumed potentialities.

iii) Benefits to the gifted: Justification for special education for the gifted is also provided in terms of the point that special programmes do actually benefit gifted children and youths. As Kitano & Kirby (1986) concluded,

> ... many gifted students underachieve in undifferentiated regular programs but benefit when services are designed to meet their unique needs. p. 8.

iv) Benefits to society: Every society no doubt benefits from its gifted population in terms of scientific and technological discoveries and advancements, new skills in medicine and human interactions, novel innovations in music, poetry and visual entertainment. No critic ever doubts the ability of the gifted to uplift societal life in these days. But the irony of it is that many such a critic often fail in their duty to justify the need to identify and nurture such gifted minds most of whom remain undiscovered. As Abang (1981) attempted to reiterate, the best scientists, technologists and future leaders of every society ultimately come from the gifted population. That the gifted remain the greatest national reaource for speeding up societal development justifies the need for special programmes for them.

These four ways of justifying special education for the gifted notwithstanding, it is still contended that misconceptions continue to exist about the need for special programmes for gifted children and youths. Five such misconceptions, in fact, triggered the need for the nationally based research on identification and education of the gifted in the United States (Richert et al 1982). These five perennial misunderstandings are centred around:

i) The myths and myriad confusions that continue to linger about standard definitions, characteristics and psycho-educational needs of gifted children.

ii) The ability of the gifted even as a minority group to initiate social and psychological changes in society; a tendency which many would not want to attribute to the gifted.

iii) The difference existing between ressearch and the practical aspects in devising unbiased procedures to identify gifted and talented youths for special curriculum designs.

iv) The politicization of gifted education, laced with distorted arguments of elitism, equity and excellence as yardsticks for advocacy or otherwise.

v) The easy resort to economic reductions in resources for funding gifted education programmes in times of national financial crisis.

Elaborating further on such controversies that continue to plague the development of gifted education programmes, Richert (1986) listed seven issues, particularly as they relate to assumptions about gifted education:

(1) Definitions of giftedness centred around whether descriptions should emphasize more of innate or experience-oriented characteristics. In the same vein, controversies regarding definitions also exist about whether to accept those that place emphasis on sustained or sporadic manifestations of giftedness.

(2) Advocacy issues with regards to arguments about the essence of committing resources (sometimes scarce as in the case of developing countries like Nigeria) for gifted education. Hence, the argument is whether to advocate for gifted education based on students' needs or the social utility of the long-term goal of special education for the gifted.

(3) Problems surrounding identification which in most cases are all about effective and efficient selection of gifted children and youths. Thus, the controversy is with regards to what yardsticks better determine identification instruments: Measures of creativity or IQ; objective or "subjective" indicators of exceptional potential; actual manifestation or potential for giftedness; and cognitive or personality measures of characteristics as indicators of giftedness.

(4) Issues surrounding programme designs in terms of how they are structured to develop giftedness. Hence, the controversy is all about whether gifted programmes better serve their purpose when the pattern is towards homogeneous or heterogenous grouping of students; whether emphasis should be on organising programmes in terms of specific subject areas or the utilization of an interdisciplinary approach; if programmes emphasizing individual study or small class works in schools are better; and whether small group works within schools are better than the utilization of out of school resources and experience.

(5) Controversy about the nature of curriculum design for the gifted. The argument here is with regard to how best to develop and utilize curriculum to nurture gifted potential. The points of divide in this case include whether curriculum for the gifted should put more emphasis on affective than cognitive objectives; if cognitive . psychological or physical development should be the centre point of curriculum design; whether acceleration is better than enrichment; if emphasis should be more on content or process acquisition in the special curriculum; and, above all, whether curriculum for the gifted should be sequential or horizontal in organisation if effective development of potential is to be expected.

(6) Staff selection and development for gifted education also poses some controversy among experts. Should non-certified personnel (i.e. non-educators) or only certified personnel be used; what level of certification or experiential learning requirements are essential; whether pre-service or inservice training should be utilized; and, if formal courses are better than workshops, internships and idependent studies for staff development purposes.

(7) Controversy about programme and student evaluation. Questions arising include whether standardized tests or observational and other subjective data are better for evaluating programmes; whether quantity, rather than quality should be the yardstick for determining success; if teachers or students should be involved in self evaluations; whether programme evaulation should be determined more in terms of process or product, and if evaluation should be more product or performance oriented.

These controversies notwithstanding, Richert believes that even if outsiders feel all these amount to irreconciliable differences between experts, solutions still exist through an examination and development of what she calls the foundation for gifted education. This, she feels, is possible through incorporating illuminating findings in other diverse fields like literature, aesthetics, business and economics, medicine, higher education, technology, social science, politics, and the physical sciences, all in order

to develop heuristic taxonomies of human abilities. Richert (1986) feels strongly, therefore, that this development can lead to new trends in

(a) the recognition of the need for both diversity and comprehensiveness;

(b) the use of an interdisciplinary approach to crucial problems; and

(c) a move toward comprehensiveness by attempting to reconcile apparent controversies. p. 198.

Emerging Paradigms:

Based on Kuhn's four-way question analysis; Feldman (1991) has been able to suggest that the ongoing controversies in gifted education have resulted in paradigm shifts in the state of the art of gifted education. Feldman, indeed, suggests eight noticeable differences in emphasis between traditional and emerging paradigms, while Correll (1978) appears to have discussed one paradigm shift only. Feldman's paradigm shifts can be summarised as follows:

i) A shift from the traditional paradigm of associating giftedness with high IQ to an emerging paradigm of associating it with multiple characteristics like creative or productive thinking ability and social and personality attributes.

ii) The tradition of explaining giftedness in terms of the trait theory which assumes that the exceptional personality of the gifted is stable and unchangeable, a belief that is now giving way to the developmental thesis that gifted potential itself is process oriented. In other words, psychologists of giftedness now explain the phenomenon more in terms of an interaction of nature and nurture than explaining it in terms of innate potential only.

iii) As against the traditional approach of basing identification of the gifted on tests, practice is now shifting more toward multiple assessment criteria in which ratings and products produced by children and youths are also utilised.

iv) Another traditional paradigm had been that giftedness would always express itself without any kind of special intervention. The emerging paradigm is that the context of giftedness

is crucial in determining whether or not giftedness will manifest itself without special intervention.

v) While the traditional practice had been in favour of special provisions for the gifted to be initiated in an authoritarian style from the top down, the emerging practice is that in special programmes for the gifted, collaborative efforts at all levels are necessary to make gifted education successful.

iv) There is also a shift from making gifted education programmes more school oriented (e.g. special and magnet schools) to an emerging trend of field orientation whereby gifted children are allowed the liberty of operating outside school confines to achieve their potential in the special programmes.

viii) As against the traditional paradigm in which ethnocentrism was dominant in achieving the goals of special education for the gifted, diversity of thoughts among programme planners and designers is now central to the mission.

One other paradigm shift mentioned by Correll (1978) is the change from the traditional paradigm of reference to special provisions for the gifted to the emphasis on special programme packages for the gifted. According to her,

> ... Provisions are offered by numerous schools through enrichment or acceleration within the regular classroom. These may be sporadic, unco-ordinated, short-range efforts, and a big problem is lack of continuity. Programs on the other hand are directed toward the systematic development of long range goals that are co-ordinated to develop the abilites and competencies of gifted pupils from the time of their identification through their graduation. p. 24.

In light of paradigm shifts in the development of special education for the gifted, some writers are of the opinion that enrichment is now a vogue in special programmes (Correll 1978, and Heward & Orlansky 1984). And enrichment, according to Heward & Orlansky, entails experiences which enable gifted children and youths to investigate topics of interest in greater detail than it would have been possible given the standard school curriculum. Put vividly, Correll on her part sees enrichment as experience that invariably replaces, supplements and extends instruction as it is

normally offered by the school. She consequently grouped enrichment Programmes into three clusters: Grouping, Acceleration, and Guidance.

Grouping involves provisions which facilitate students' access to special learning opportunities in homogeneous or heterogenous groups. Such programmes inlude: Cluster grouping within regular classes; special regular classes; part-time groups before, during and after school or on Saturdays; seminars; minicourses; team teaching; alternative schools; resource room or demonstration classroom; use of itenerant or resource teacher services; and utilisation of field trips, cultural events and special summer programmes.

Acceleration refers to activities that tend to promote learning beyond the preseribed pace of the regular curriculum. Such programme approaches include: Early entrance to elementary schools or special gifted pre-school classes; double grade promotions; advanced placement classes; ungraded classes; multi-age classes; special tutoring services; special correspondence courses; extra credit classes; credit by examination; independent study; continuous progress curriculum; year round school attendance; flexible schedules of School calendars; and block or back-to-back classes.

The enrichment approach that entails experiences which are tailored to promote understanding of self and others and help to explore opportunities for careers are referred to as Guidance. Examples include: Individual conferences; group meetings for gifted children and youths; career and vocational counselling; educational counselling; community development programmes and sponsorship or scholarships; special study groups; special education classes and tutoring; and mentorship.

In a national survey of programmes and promising practices in gifted education in the U.S., Cox et al (1985) found a number of special placement services quite useful in meeting the special needs of gifted students. Mention is made particularly of advanced placement courses, concurrent school-college enrolment, and early entrance to schools as some of the simplest ways for easily meeting needs of many gifted students. When programmes are intended to be year round, the survey also indicated that programming for excellence

is a very flexible way of meeting the special needs of gifted learners. When the focus of programme design is on talented students with sharply focused specific abilities and interests, the survey found the special schools approach as most effective.

Based on the results of the survey, a number of recommendations were made, some of which have bearing for the focus of this study. These include:

i) The process of assessing students for discovering gifted children and youths should be broad enough in utilising measures of various kinds.

ii) Gifted students' abilities should be assessed for appropriate programming.

iii) It is important that a variety of instruments for measuring intelligence are employed.

iv) Parents, teachers and others who work closely with children need to be involved a great deal in identifying gifted children and youths.

v) A wide range of identification strategies should be used in the process of assessing gifted chilren.

vi) Minimizing labeling any set of children as "gifted".

An examination of issues raised about the state of the art of gifted education reveals the research needs and intellectual discourse that is pregnant in the field. Both definitional isses and paradigm shifts reviewed indicate that the field of gifted education is probably still a nascent one, especially for research of this magnitude.

IDENTIFICATION OF GIFTED CHILDREN AND YOUTHS

The process of identification is very crucial towards the success of any form of gifted education. The basic principles behind identifying gifted children; those aspects that make it defensible; the stages involved and recommendations for evolving rational identification form the basis of the review in this section.

Identification in gifted eduction implies the process of the search for gifted children. Its function according to Richert et al (1982) is to create what may be referred to as a talent pool so that as many ptentially gifted children and youths,as possible will

be reached in order to meet their needs through special programmes that will enable them develop to the greatest extent their exceptional abilities for the benefit of themselves and society. Correll (1978) sees identification as the entire process of screening for gifted children and youths. Other writers, however, feel strongly that it is a procedure in which nominations and assessment do not necessarily have to be separated (Treffinger 1991, and Ware 1991). As Kolo (1993) pointed out, identification of gifted children is based on processes of child-find and appropriate placements in educational programmes.

In whichever way we conceive of identification of gifted children and youths, Richert (1985) reminds us that it is necessary to take note of certain basic principles listed below:

1. Defensibility: This is to say that strategies to be adopted for identification purposes should be based, to a large extent, on available research recommendations. The decision to use any of the well known strategies (Optimal Match or Generic, for instance) should be based purely on pointers from research findings about the model's applicability to the setting in which identification will be taking place.

2. Advocacy: Identification should be designed to meet the best interests of all gifted students. As gifted students are known to have a great diversity of interests, such interests need also to be part of what identification schemes should attempt to unravel along with characteristics of these children. This will in no small way help to sustain the growth of programmes to be designed and adopted as part of the identification scheme itself.

3. Equity: To ensure this in identification programmes, there will be the need to guarantee that no one is overlooked; civil rights of students protected; specific plans made to ensure the inclusion of the disadvantaged gifted, and avoidance of arbitrary cut-off marks from tests need to be adhered to.

4. Pluralism: This is in terms of the kind of definition of who the gifted are. A definition that is broad enough, and defensible within society, should be utilized as the focal point for the identification scheme.

5. Pragmatism; In other words, as many gifted learners as possible need to be screened and served. As Richert (undated) opined, gifted programmes should seek to continue to include more, rather than fewer students.

6. Comprehensiveness: As much as practicable, identification procedures should in practice allow for the modification and use of tools and resources at hand, In short, identification programmes should not be rigid about specific instruments and available resources (human and material) to be utilized.

When identification schemes adopt these principles described herewith, the chance is for some success to be registered. And as Correll (1978) described the characteristics of successful screening and identification programmes, they evidence identification, continuing talent search, involvement of various materials and comprehensive data on the abilities of gifted students.

For identification programmes to also become successful, the procedures adopted must be defensible (Richert, 1986). Characteristics of defensible identification procedures according to Richert include:

1. The adoption of the foregoing six principles of identification for decision making about those to be regarded as gifted.

2. The use of different measures and procedures necessary for identifying diverse talents and abilities of gifted children and youths.

3. Selecting tests and screening devices about which decisions on crucial issues likely to affect the validity and reliability have been ironed out. In which case, issues like particular abilities being sought, appropriateness of tests of abilities, appropriateness of tests to specific stages of identification and screening, the avoidance of cut-off marks which are penalizing to creative or disadvantaged students, and appropriateness of tests to any subpopulations would all have been ironed out to make the identification programme defensible.

Identification Stages:

In the National Report on Identification, Richert et al (1982) spelt out three explicit stages of identification in gifted education programmes. These stages are those of Nomination, Assessment and Evaluation.

Namination (Stage 1):

The major goal at the nomination stage is to develop a pool of potentially gifted and talented students. It is strongly recommended that the best way to achieve the nomination goal is through the utilization of multiple procedures for entry into the pool.

Thus, individual and group intelligence tests and achievement tests, as well as measures like nomination inventories or checklists, creativity tests and culture-fair tests are all used to create a pool of students with potential for giftedness. With such multiple criteria, children and youths gifted in general intellectual ability, specific academic ability, creative talents, exceptional abilities in visual and performing arts, outstanding psycho-social abilities, and exceptional psychomotor abilities would be nominated into the pool.

The essence of making the pool so divergent is to ensure that, as much as possible, no gifted student is left out on account of types of instruments used or type of talent so possessed. Richert et al (1982) advised that using the multiple criteria, only 5 per cent from each measure should get nominated into the pool; and from the pool itself between 20-30 per cent may be further screened into the second stage of identification. Her stand, she explained further, is based on the ultimate 1-3 percent of every society supposed by experts to be regarded as gifted.

It is worthy of note that the multiple criteria approach recommended by the Blue Print on Gifted and Talented Persons in Nigeria also lists all these academic and non-academic measures (NPCEGTC, 1986). However, the recommendation in the Blue Print does not appear to suggest that those so identified will first get into a national talent pool. Rather, as is the present practice, students so identified pass on to the special school programme (SULACAD), having been screened with cognitively based GEPSE from local, state and national levels

utilizing the process of sifting for the top five per cent of the primary school children.

Two reasons may explain such a narrow identification procedure; The probable assumption by experts of the Federal Ministry of Education (FME) that the two subtests of GEPSE make it comprehensive enough, and the fact that gifted education is still in its infancy, and so more comprehensive identification procedures will evolve over time.

According to Richert (1991), research reports are a pointer to the fact that nomination stages of identification programmes in the U.S. are often fraught with a number of problems. Such problems (among the numerous listed) that directly affect the nomination process for the creation of a pool of gifted and talented students include:

i) Misuse of identification instruments in the form of the practice whereby achievement and IQ tests are used interchangeably. In Nigeria's case, the GEPSE is currently used to obtain achievement and intelligence test scores which are derived from the subtests.

ii) The use of multiple criteria at the nomination stage may be consmetic or distorted. It is, for instance, reported in the National Report on Identification in the U.S. that in some districts, data from a variety of criteria were sometimes unreliable or combined inappropriately. The matrices and achievement tests in the basic subjects (English and Mathematics) may as well pass for an inappropriate combination of academic aptitude and intelligence scores.

To avoid such nomination problems, Richert et al (1982) recommended that emphasis be placed on specific types of measures for identifying categories of giftedness and talent. For identifying general intellectual giftedness, premium should be given to IQ tests. For specific academic aptitudes, emphasis should be on achievement test, graded test batteries and norm referenced tests for subpopulations. For identifying giftedness in creative, visual and performance arts, psycho-social and psychomotor abilities, emphasis should be on a variety of measures beyond academic

achievement e.g. scales, inventories and measures of creativity.

Assessment (Stage II):

At the second stage of identification, the focus is on retesting the students from the talent pool in order to determine the special needs of all students to aid their placement into different programme options that may be available. The goal of this stage is to gather and organize data on students' needs, and decision making on what programmes best meet these special needs of students from the pool (Richert et al 1982).

It can be very easily found that in some identification programmes, the assessment stage is sometimes confused with the nomination stage or, in some cases, the nomination phase is totally eliminated and placement into programmes done directly from assessment. This may not be surprising considering that the same instruments used for nomination may be utilized again for assessment. As Richert (1991) reported, problems akin to the assessment phases of identification include the use of instruments and procedures at inappropriate stages of identification, and inappropriate combination or data matrixing for identification decisions.

These kinds of problems could probably be minimized if the myriad of multiple criteria measures used at the nomination stage are limited to group oriented instruments only. At the nomination stage, for instance, instruments should be limited to group IQ tests, group teacher-made achievement tests, and nomination inventories and checklists administered to parents, teachers, peers and selfs. At the assessment stage, more specific data collecting measures like individual IQ tests, creative performance tests, standardized achievement tests and standardized rating scales should be utilized.

It should also be noted that at the assessment stage, students may fail to meet the criteria of needs for placement in programme options. However, the aim of re-secreening should not necessarily be to determine who is "more" or "less" gifted than others, nor should it even be to eliminate more students from the programme (Richert et al, 1982). The essence of assessment is to determine whose needs for programming are greater and where the appropriate programmes are available (Richert et al, 1982).

Evaluation (Stage III).

At this stage, the focus is on establishing an ongoing identification programme by evaluating previous decisions to determine the need or otherwise for refining nomination and assessment of gifted and talented students. The goals of evaluation include determining the effectiveness of the identification process, and generating useful information for making decisions for improvement (Richert et al 1982). Thus, tasks of the evaluation stage of identification in gifted programmes include data collection and use, improving nomination and assessment, decision making about who the gifted are, and overall, seeking excellence and equity in identification procedures (Richert et al 1982).

Identification is surely very cucial to the success of gifted education programmes anywhere. Hence, it is important to clearly set out the goals of identification and the procedure before embarking on the process. Careful planning can obviously aid the emergence of a defensible and pragmatic identification programme in gifted education.

SELECTING GIFTED CHILDREN

Finding the gifted child from the larger population of children and youths depends largely on the reliability and validity of instruments used, the efficiency of the selection approach and the effectiveness of the detection strategy. The reliability and validity of instnuments implies the extent to which those instruments measure well enough what constructs they intend to measure within the population they are administered. The efficiency of strategies refers to how significantly given strategies or criteria are capable of detecting children and youths who actually achieve the standard for giftedness. The effectiveness of selection procedure refers to how well given instruments are capable of confirming a significant per centage of gifted children and youths.

Reliability and Validity of Rating Scales:

Richert et al (1982) and Richert (1991) provide a summary of an assortment of tests, inventories and scales used for identification of gifted children and youths. Recommendations for use of the instruments based on categories of giftedness and talent, population types, age and identification stages were done having in mind the reliability of these tests as determined through their use by

researchers over the years. The Cartoon Conservation Scales, Columbia Mental Maturity Scale, Stanford-Binet Intelligence Scale, Sysmtem of Multicultural Pluralistic Assessment, Weschler Pre-school and Primary Scale of Intelligence, and Scales for Rating Behavioural Characteristics of Superior Students (SRBCSS) all seem to have been recommended for use in identifying giftedness in its different dimensions.

As a rating instrument, the SRBCSS was recommended as reliable for rating gifted students on general intellectual ability, motivation, creative, leadership and visual and performance art, communication, planning and psychomotor abilities. The SRBCSS was also recommended for identifying gifted children in both advantaged and disadvantaged populations as well as children and youths of elementary and secondary school age. In addition it is recommended for use mainly at the assessment stage of identification (Richert et al, 1982).

Effectiveness of Selection Procedures:

The effectiveness of selection procedures is largely determined by the types of instruments involved and how valid they are for measureing traits of giftedness. Apart from cognitively based tests, other non-cognitive instruments like inventories and scales are used for selecting gifted children and youths. A largely used scale is the SRBCSS which can be administered to parents, teachers, peers and others.

Research over the years tends to indicate that generally, teacher administered scales or inventories are often able to indicate averagely only 50% of children who are potentially gifted (Correll 1978, Kitano & Kirby 1986). Gear (1976) in a review of research centred on teacher ratings of elementary school age children concluded, for instance, that between 9.5 to 61.2 per cent of potentially gifted students were effectively rated from teacher administered measures. Investigations by Borland (1978) and Gear (1978), however, indicate that teacher administered ratings can be significantly improved with training about characteristics of giftedness.

As for parent administered measures, research reports by Jacobs (1971) indicate that they are often capable of effectively assessing as much as 76.0 per cent of students who are potentially gifted. In Jacobs' conclusion, he asserted that where parents rate potentially

gifted students with less effectiveness, it may be because such parents are probably more conservative about their children's behaviours. Parent rating scales like The Williams Scale have been found to be very effective when used for rating outstanding creative behavioural characteristics of potentially gifted children and youths.

There is not much from research literature about the utilisation of peer administered measures for effectively rating characteristics of giftedmess. Torrance (1977b), however, indicates that peer administered scales could proof significantly effective in rating outstanding characteristics expected of those of them who are gifted. As Kitano & Kirby (1986) pointed out, biographical inventories could often be found very reliable when peers of gifted students are involved in rating superior behavioural characteristics. On Form R of the Alpha Biographical Inventory, for instance, correlation co-efficiency values of 0.58 and 0.72 for artistic, leadership and academic aspects of gifted potential were found (Ellison, Abe, Fox, Coray & Taylor, 1976).

Efficiency of Ratings:

Research has confirmed that teacher rating of efficiency characteristics of gifted students is high. In Gear's (1976) review, data on efficiency ratio indicated percentages of between 43.0 to 95.7 commonly found when teachers nominated and rated gifted children and youths they teach. In Jacobs' (1971) report, efficiency of parents for rating gifted children was put at 61.0 per cent on the average. However, Kitano & Kirby (1986), on a general note, recommended in strong terms the use of multiple measures for identifying gifted children. This is based on the fact that more types of giftedness with more effective and efficient screening qualities can be put into use.

Selection Approaches

Kitano & Kirby (1986), while taking into consideration problems associated with different measures of assessing characteristics of gifted children and youths, discussed four types of approaches often used for selecting gifted children for special programmes. The four approaches are: The Set Criteria Approach, The Matrix Approach, The Case Study Approach and The Revolving Door Identification Programming model.

(i) The Set Criteria Approach: In this approach, child is considered for placement in gifted programmes only if he/she demonstrates superior ability in at least not less than two to three components of a battery or measures of individual assessment devices. Often, measures used for multiple assessment range from individual intelligence, achievement, creativity and critical thinking tests. Cut-off marks are then determined (i.e. 2.0 SD for intelligence tests or the 96th percentile for achievement and creativity measures) for consdering children as eligible for special programmes.

As Kitano & Kirby (1986) pointed out, this approach may be unfavourably discriminating for selecting disadvantaged students and may produce variations in standards of children selected year after year. Nontheless, the approach may be found very useful in high excellence programmes.

(ii) The Matrix Approach: In this approach, school personnel make a listing of sources of assessment of children's characteristics in determining those that may be regarded as gifted. As in the Baldwin (1978) Identification Matrix, for instance, specific tests ranging from standardized IQ tests, achievement tests, learning ability quotient tests, and rating scales of all kinds are administered to students in groups. Results from each of these assortment of tests are then categorised into five levels with ratings on a Likert type scoring format from 1-5. For each student, a matrix card is opened, supplying a variety of biographical information, and columns vertically and horizontally created for listing of assessment devices and score classification, respectively. The scores on each assessment device is then tallied and multiplied by the weight of each score categorisation to produce a grand total of the matrix. As in the case of the Baldwin type matrix, the top 1-5 per cent of those assessed are then selected for placement in special programmes.

Again, as in the set criteria approach, students whose special abilities do not happen to be assessed by any of the assortment of measures may be cut off from the matrix identification. Yet, matrices can be utilised in a variety of ways to effectively identify gifted children, especially where a sufficient variety of assessment devices are used for any singular or multiple types of giftedness.

(iii) The Case Study Approach: A committee is usually set up to study the case-history of students by scanning individual data obtainable from a variety of measures such as aptitude and achievement scores, teacher ratings, information from cumulative records, parent and peer ratings, and students' self-ratings (Kitano & Kirby, 1986). In a study by Renzulli & Smith (1977), the Case Study Approach was found significantly useful in terms of teacher ratings, costs and sensitivity to gifted minorities.

(iv) The Revolving Door Identification and Programming (RDIP) model: The RDIP model was developed based on Renzulli's (1978) definition of giftedness as a trisemic manifestation of above average ability, creativity and task commitment. As it is described, the model operates through a process in which as many students that can be sampled as representing potentially gifted children and youths are taken as a pool (Renzulli & Smith, 1980). The students in the pool of gifted children and youths are often placed initially in a resource room programme in their respective schools. Based on their performance, they can then move on to further special programme modules or packages, or even exit from them if they cannot cope, in order to make room for other students from the pool to make their entry. Continuation or exiting from the programme, therfore, depends on the extent to which students can utilize their abilities and skills to match modules or packages programmed to meet their gifted capabilities.

As Kitano & Kirby (1986) see it, the RDIP model increases the number of students receiving flexible special programming, and this has the effect of creating in people the true impression that special education for the gifted is not necessarily elitist.

STRATEGIES FOR EFFECTIVE SELECTION

To ensure a fair selection appraach, Cohn et al (1988) recommended two comprehensive strategies for nominating, assessing and placement of gifted children and youths. These are the Optimal Match Strategy (OMS) and the Generic Identification Strategy (GIS).

(i) The Optimal Match Strategy: As Cohn et al (1988) described it, the OMS is based on the ultimate goal of matching the assessed needs of potentially gifted youngsters with a range of alternative programmes in order to facilitate appropriate education for them.

Two major steps are taken to evolve the process of nomination, assessment and placement of gifted children.

Step one:

Determing eligibility; a procedure in which achievement tests collated over the years by teachers and parents, as well as ratings of specific characteristics of students by them (i.e. teachers and parents) are used for nomination purposes. This first step provides a broad enough pool of potentially gifted students.

Step Two: The administration of out-of-level tests to the eligibility pool to determine the appropriate academic or performance ability level for them. Prognostic and aptitude tests are, for instance, administered to the students to determine the grade level at which students can perform on specified tasks. Students are then placed at grade levels or school levels presumed to be challenging enough for them to exibit their gifted potentialities.

Simple as the OMS appears to be, Cohn et al (1988) pointed out that problems associated with practicing it include the difficulty posed in terms of needing more educationally relevant information about students as against scanty ones that may be available because of the limited number of instruments involved. Other problems include poor reliability of presumed extremes that potentially gifted children are assumed to be capable of coping effectively with, and the ceiling effect in terms of difficulty in determining the topmost level at which extremely able learners should be regarded as eligible for final placement. For nascent gifted education programmes like that of Nigeria, utilising the OMS model may be very problematic for the same reasons listed here.

(ii) Generic Identification Strategy (GGIS): Cohn et al (1988) view the GGIS as a multifaceted approach (in terms of instruments and decisions to be taken at three phases preceding placement), resulting in a case study of each candidate considered eligible for special programmes. At the nomination phase of the GGIS model, data about individual students' abilities are obtained from school administrators, classroom teachers, coaches or games masters, counsellors, librarians, parents, peers, selves and significant others. The instruments which may be used at this stage are those limited to verbal reports and simple questionnaires from which data are pooled for referral and biographical purposes appropriate to the next phase of the GGIS. The co-ordinator of the identification

scheme is directly responsible for decision making in terms of those to be placed in the talent pool now nominated.

In the second phase of screening, the same groups of personnel as used in phase I are utilised to obtain further data on students now in the talent pool. However, more objective instruments like checklists, group tests of achievement, creativity measure, tests of mental abilities, rating scales and interest surveys are now administered to either students or their school personnel, listed above. Thus, data about students' aptitudes, cognitive and psychomotor behavioural characteristics, as well as biographical, interest and test scores will be obtained.

Based on the collection of these data, an identification team comprising of classroom teachers, gifted education specialists, parents, school counsellors or psychologists, and even the students themselves, will be involved in decision making on selection for a gifted programme.

The third phase of the GGISS is the selection stage. Students themselves (i.e. the potentially gifted who have been nominated and screened) provide the ultimate source of data. Auditions, interviews, evaluations of products/portfolio, individual tests of achievement creativity and intelligence are all considered for each student who successfully passes through the screening level. Biographical data, proofs of excellence or potential for it, and high test scores provide yardsticks for a multi-disciplinary team (as in phase two) to make a decision about what programme option best suits a student. Programme options will often range from enrichment through grouping strategies, acceleration, guidance and special schools for meeting the needs of potentially gifted children and youths.

Although the GGIS may appear to involve a rigorous procedure, Cohn et al (1988) still consider it very useful in modern programmes for educating gifted children and youths. Its major asset lies in the fact that the obviously gifted in terms of producers of original forms of knowledge (and not just fast consumers of assorted knowledge) stand a better chance of getting into appropriate programmes (Tannenbaum, 1983).

Whatever the cumbersome nature of identification strategies, they still remain the most effective ways for designing selection

procedures in identifying gifted children and youths. Richert et al (1982) while surveying identification programmes in the USA clearly cautioned on whatever processes were going to be adopted in the three stages of identification schemes. The six cautions discussed are:

i) Sequence of approach should be regarded as critical, to avoid putting the cart before the horse. Effective planning for personnel training and mobilisation of resources should, of course, precede the three main stages of nomination, assessment and evaluation.

ii) The training of staff or personnel to be involved in the identification scheme should take precedence over the quest for, and selection of instruments to be used. Thus, a situation where staff expected to be utilized in the identification procedure not being well grounded on what to do would have been avoided. The question of ordering for instruments which personnel will find difficult to handle will also not arise.

iii) It is also important to avoid situations in which the use of tests in an identification programme will be abused. Errors may, for example, be committed in selection as a result of biased procedures. And as Richert et al put it "... if selection for programming is not equitable or comprehensive, then all students will be prey to pernicious effects of distorted expectations" (p. 237). Students selected through tests need to be sensitized to believe that they are in special programmes more because of their needs than because of their superiority.

iv) Tests and procedures should not be misused. It is important to determine early enough the appropriateness of tests for identification purposes and the validity of such tests for various categories of giftedness, age levels, sub-populations and relevant stages of identification.

v) Resources for identification should not be allowed to distort identification. In the developed societies, resources like the computer are available for collating data necessary for identifying gifted children and youths. It is cautioned

that the application of such resources like the computer should not result in distortion of the aims of identification.

iv) identification procedures should lead to matching students' needs with programme options. When this is not the case, identification schemes are further complicated in situations where data are not appropriately used to develop options and curricula related to students' needs, The caution, therefore, is that whatever identification approaches and strategies are adopted or used, it should be ensured that results become a basis for us to develop programme options to meet identified needs of gifted students.

SUMMARY

That gifted and talented students exist in any population is no longer the subject of dispute. As a concept, giftedness implies the manifestation of human potential via the innate and environmental resources which can be nurtured (Richert 1990). Gifted children and youths have had their characteristics focused upon (beginning with the monumental study of Lewis Terman) by researchers who attempt to determine how unique they could be from the general population.

Characteristics of gifted children and youths have been discerned according to different dimensions of the phenomenon: Intellectual giftedness, specific academic giftedness, creative giftedness, psycho-social and leadership attributes in giftedness, visual and performing art abilities in the form of outstanding musical, artistic and dramatic talents and psychomotor giftedness. Given all characteristics for each category, a number of traits appear to be common to all groups of the gifted and talented; hence, they form the basis for general characteristics regarded as cognate to the concept of the description of giftedness. Such characteristics (cognate and specific) are reflected in the lives and achievements of renowned gifted individuals who have made their marks in the world.

The state of the art of gifted education, as it currently holds, shows a historical antecedant from country to country and a paradigm shift from traditional views of giftedness to more pragmatic views. Therefore, identification, in spite of its controversial nature, remains very crucial to the success or failure of any gifted education programme.

CHAPTER THREE

METHODOLOGY

PREAMBLE:

Having established the need for this study and in particular with regards to stressing the fact that a standardized multiple criteria approach was desirable for identifying gifted Nigerian children and youths, a matrix framework was conceived of and tried out as the main procedure for data collation. The procedure for the construction and validation of researcher-designed instruments; a description of other standardized tests used or adapted in the matrix data collected; as well as the phase by phase administration of all screening instruments in the multiple criteria approach all form the context of this chapter. The process of data matrixing and general problems encountered during the fieldwork are also explained.

RESEARCH DESIGN

The framework which undergirded data collection for this study was a survey design built around the Multiple Criteria Approach (MCA); an approach used for identifying gifted children.

In selecting children for gifted education, the criteria used is of crucial significance in determining the validity and reliability of the programme (Richert et al 1982). As stated earlier, three frequently used selection models include: The set criteria; the matrix; and the case study approaches (Kitano & Kirby 1986).

The matrix approach is akin to the multiple criteria approach in all respects. As Baldwin (1978) described it, the matrix approach involves deriving a total score from a variety of assessment data which determines the eligibility of children for placement into a gifted education programme. Hence, while the multiple criteria approach entails the prior determination of domains from which data would be collected with an assortment of psychological measures and devices, the matrix approach simply classifies available variety of data into set standards for determining those children who are eligible for gifted programming.

The Blue Print on Education for the Gifted and Talented Persons described the multiple criteria approach as a procedure involving ascertaining a target population, deciding on screening procedure,

selection or construction of identification instruments, and above all, the actual selection or identification by means of combining various measures (NPCEGTC, 1986).

For all intents and purposes, this study can be seen as an eclectic selection model for the following reasons:

(a) It involved a battery of cognitively and affectively based measures for screening purposes as demanded by the set criteria approach;

(b) It involved derivation of raw data which were converted to standardized creterea for determining eligibility for giftedness as demanded by the matrix approach; and

(c) It involved stages during which more elaborate information (other than the traditional value judgements from cognitively based performance) were derived through nominations, selfs' and others' reports, as demanded by the case study approach.

In conformity with the Blue Print stipulations, the multiple criteria plan used in this study entailed:

(i) Ascertaining a target population of outstanding students on a number of types of giftedness and situations in which exceptional abilities or potentialities of children would have been observed by their teachers and peers;

(ii) Utilisation of a screening procedure in which standardized cognitively based instruments like the Standard Progressive Matrices and the Test G were administered to a pool of oustanding students;

(iii) Adaptation of screening measures like the Torrance Circle Test;

(iv) Development and validation of affectively based rating scales like the Scale for Rating Outstanding Traits in Children and Youths((SROTCY);

(v) Identification by multiple criteria data like the use of the Baldwin type matrix into which data indices of nominated students were fed and computed to determine eligibility for giftedness.

Thus, rather than derive a target population based on screening (through testing) to obtain the top five per cent of the primary school population (as stipulated in the Blue Print and as the yardstick for selection into Suleja Academy), teacher and peer nominations were used to determine a population of outstanding junior secondary school students considered eligible for screening and rating for traits of giftedness. Also, a screening procedure involving recently used standardized achievement tests in addition to adapted tests of creativity and current classroom examination results were used, rather than the National Common Entrance Examination (NCEC) results stipulated in the Blue Print for determining eligibility for the gifted screening exercise. Above all, a standardized rating scale was developed for a more comprehensive and homogeneous rating of cognate characteristics of gifted children and youths.

From all indications, therefore, the multiple criteria approach can be described as a multidimensional and elaborate identification plan in which a variety of potential and demonstrated exceptional abilities of children and youths are screened for, using as many psychological instruments and procedures as desirable.

RATIONALE FOR UTILISING THE MULTIPLE CRITERIA APPROACH (MCA):

A number of reasons informed the use of MCA for this study:

(i) The Blue Print spells out a modified multiple criteria deemed suitable for identifying the gifted in Nigeria (NPCEGTC, 1986). However, since the inception of gifted education in Nigeria, such an approach has not been tried out. A study of this dimension in which identification is a single crucial variable calls for the use of a multiple criteria approach in order to make findings much more attuned to official guidelines.

(ii) Since a multiple criteria approach is officially recommended in the identification plan in Nigeria's gifted education proggramme, it is also important to incorporate such a device into a study of this dimension in order to utilize the benefit of research to standardize such an approach for the future.

(iii) Nominations and ratings occupy a very crucial place in this study and so the essence of developing or adapting and standardizing the appropriate instruments call for a multiple criteria approach capable of validating the inventories and scales.

This is more so since designing and constructing an inventory and rating scale for the study was predicated upon:

(a) the need to utilize a grammatical level that would be easily understandable to those nominating and rating students;

(b) the need to avoid using the words 'gifted' and 'talented' on the instruments in order to avoid the stereotype which Nigerian teachers, parents and even peers of children and youths may perceive about the gifted. As Kolo (1993) pointed out, such beliefs and perceptions may influence their judgements about the ability of exceptional children and youths, particularly in situations where it is made clear that the purpose of a screening exercise is identification of the gifted and talented;

(c) Some of the instruments directly usable for data collection are either foriegn developed or norm-limited to a Nigerian population. The Torrance Circle Test (TCT) and the Renzulli et al Scales for Rating Behavioural Characteristics of Superior Students (SRBCSS), for instance, are foriegn developed. On the other hand, the adapted Obani (1987) SRBCSS is norm limited to a Nigerian background. It becomes essential, therefore, to renorm and adapt or adopt some aspects of these instruments.

(iv) Rating characteristics of gifted and talented children and youths for identification purposes can be prone to its own abuses and bias. An approach based on a set out multiple criteria serves to further verify the ratings carried out and also to corroborate data collection

MULTIPLE CRITERIA APPROACH (MCA) INSTRUMENTS

Two main categories of instruments were used for data collection within the framework of MCA in this study. The first category comprised of nomination inventories, biodata inventories and rating scales. The second category of instruments comprised mainly of standardized tests which had either been used for soreening in Nigeria or other cognitively based ones adjudged by their norm referencing to be capable of eliciting required data for complementing ratings of characteristics of outstanding students in an MCA framework for identifying gifted children.

RESEARCHER DESIGNED INSTRUMENTS:

The following instruments were developed as possible affective measures of the MCA components:

(i) Outstanding Students Nomination Inventory (for Peers and for Teachers) i.e. OSNI-P; and OSNI-T.

(ii) Students Biodata Inventory (SBI)

(iii) Scale for Rating Outstanding Traits in Children and Youths (SROTCY).

(i) Outstanding Students Nomination Inventory: Peers & Teachers (OSNI:P&T)

Most often, nominations are confused with ratings in screening exercises for identifying the gifted. EIRC (1992), for instance, listed the Parent Nomination Forms (PNF) and the Parent Inventory (PI) as some of the assortment of affective measures for identifying gifted children. An examination of the design of both PNF and PI, however, indicates that these measures are checklists of characteristics of gifted and talented children. They may, therefore, have limited efficiency ratio for actual nomination in which specific students are expected to be pinpointed as possessing potential for giftedness.

From the EIRC collection, the only instruments which can be more correctly dubbed nomination inventories include:

(i) the Peer Identification - Creative - Elementary,
(ii) the Peer Identification - Creative - Secondary, and
(iii) Teacher Nomination Form (TNF).

While the Peer Identification series (i.e. 1 & 2 above) merely describe creative traits and require students to write names of three classmates most frequently observed with such characteristics, the TNP provides vivid descriptions of characteristics of the gifted and talented, and subsequently require teachers to write names of three to five students whose general outlook and abilities correspond to those descriptions.

Apart from cultural limitations evident in the EIRC listed inventories, they also would have the drawback of limiting the number of students to be nominated if they were to be used for creating a pool of gifted and talented students. Also, the peer identification inventories listed above are limited to nomination of children with creative potential to the exclusion of other forms of giftedness. Hence, given recommendations that nominations and pooling of students in identification schemes should seek to include,

rather than exclude more students for gifted education programmes, it becomes justifiable to develop a more elaborate nomination inventory which would not only efficiently make room for a more inclusive number of nominated children and youths, but above all, will be well norm referenced to the Nigerian context.

Thus, the aim behind developing a nomination inventory for this study, (rather than using existing ones) was to make room for nominations not only by teachers, but also by peers of students, and also to create the advantage of making provisions for as many nominations as possible.

Two versions of the Outstanding Students Nomination Inventory for Peers and Teachers (OSNI: P&T) were developed as the first set of affectively based instruments in this study. The decision to restrict nominations to teachers and peers of outstanding students (to the exclusion of parents) was informed by the possible limited chances that parents have to objectively nominate gifted children. And as research has shown, Nigerian parents are very prone to idols of the mind in their beliefs about giftedness and talent (Kolo, 1993). Moreso, given that gifted characteristics in this study are are perceived more from the dimension of school situational activities, parents may not be in the best position to nominate outstanding students who could pass for gifted children and youths.

Each of the two versions of OSNI were designed in three sections (see appendices 1a & b). The first section which is the Introduction offers a description of outstanding students to peers and teachers respectively. The second section of each OSNI version provides instructions about how to nominate students in the third section. The third section itself is the Nomination Form (NF) designed to enable peers and teachers of students nominate a maximum of 145 - 162 outstanding youths given different school activities and types of giftedness.

Nominators using OSNI were required to write full names of students being nominated into spaces provided in the NF. Although it was not compulsory to nominate students in all spaces, nominators could nominate as many oustanding students as possible given school situations like classroom academic activities, study groups, clubs and societies, dormitory, social groups and whole streams of JSS I

and II. Three students were to be nominated in order of consideration under each school situation against types of clusters of characteristics such as general intellectual capabilities, specific academic aptitudes, creative abilities, psychosocial and leadership traits, artistic and visual performance, and psychomoter abilities.

The guiding principle behind such a very broadly desgined OSNI was to allow many clearly outstanding students who could pass for being gifted in different dimensions to get nominated as many times as possible and by more than one set of nominators. The broadened nature of OSNI was also aimed at ensuring that gifted students whose potentialities have not become very manifest or those of them whose negative traits dominate their personalities would have a chance of being nominated at least once

(ii) Students Biodata Inventory (SBI).

The Students Biodata Inventory was desigined to serve specific purposes in the present study. Having obtained a pool of outstanding students using the OSNI, most or all nominated students were deemed eligible for screening as gifted children and youths. However, further information was required about students in the pool, particularly given the MCA framework in which a variety of identification devices are expected to be utilised for identification purposes. Information about students interests, home backgrounds and self assessment of personal abilities were all, for instance, required to determine when and to whom to administer some of the other instruments (see data collation of SBI, P. 119-120)

Thus, for all nominated students, information about their full names, sex, age, particular classes or dormitories and schools were to be pieced together using the SBI (see appendix II). The SBI by design also sought to elicit response from student nominees' about their preferred teachers, best friends, most preferred clubs, societies or hobbies. Full postal addresses of parents or gaurdians were also solicited for. These information guided the distribution of the rating scales and the administration of other measures in the MCA framework.

(iii) Scale for Rating Outstanding Traits in Children and Youths (SROTCY)

EIRC (1992) provided a comprehensive list of rating scales and checklists commonly used as affective measures for identifying gifted children and youths. These include:

(i) The Renzulli - Smith Early Childhood Checklist (ECE)

(ii) The Teacher Checklists for Kindergarten (TCK)

(iii) The Checklist for First Grade Pupils (CFGP)

(iv) Scales for Rating Behavioural Characteristics of Superior Students (SRBCSS).

Of all rating scales or checklists used in gifted indentification schemes, the SRBCSS developed and validated by Renzulli and Hartman (1971) and the later edition by Renzulli, Smith, White, Callahan and Hartman (1976) have been the most widely used both for research and school programmes in the United States and parts of Europe (Richert et al 1982).

The 1976 versions of SRBCSS have coefficient stability values of .88, .91, .79 and .77 on the learning, motivation, creativity and leadership subscales respectively, The same subscales also have interjudge reliability coefficient values of .89, .85, .91 and .67 respectively. Internal consistency reliability values of the other three subscales of SRBCSS were estimated at .96, .82 and .97 for communication precision, communication - expression, and planning aspects respectively. All items in the later three subscales have factor loading values estimated at between .55 to .99 (Renzulli et al 1976).

The SRBCSS ratings were also further validated with IQ, Language and Math achievement scores of a sample of 40 each of identified gifted and average groups of students. Significant differences were found in an analysis of variance with F values estimated at 270.55, 267.30, and 103.41 respectively in comparisons between the two groups on their IQ, Language and mathematics achievement scores respectively. And as Richert et al (1982) indicated, the SRBCSS can be found appropriate for use in identifying traits of general intellectual ability, creativity, leadership, visual and performing art, as well as for screening in disadvantaged populations.

In adapting the 1971 version of SRBCSS, Obani (1987) amongst other things reduced the language level in order that the items should become more easily understandable to Nigerian teachers. He also gave a slightly different introduction preceding the rating section of the original SRBCSS and reduced the rating points from

4 to 3 to obtain more categorical ratings of characteristics of giftedness.

Availability of the two versions of SRBCSS, its adapted form and other rating scales and checklists not withstanding, the decision to further develop a ressarcher designed rating scale was predicated on a number of considerations:

(a) The ECC, TCK and CFGP mentioned above are normed to kindergaten and lower primary school aged children; whereas it is early secondary school aged children and youths whose characteristics were rated in this study.

(b) Rating scales which are norm referenced to foreign cultural backgrounds would obviously have their drawback effects if they were to be used in a different cultural environment. The ECC, TCK, CFGP and SRBCSS, for example, have such cultural limitations like linguistic level and examples cited which could penalize non-English speaking individuals.

(c) All rating scales which utilize the numbered (1 - 4) response points format are capable of making psychologically covert demands on raters to rate students at oppossite extremes and, hence, pushing their sense of objective assessment to the background. In the study by Obani (1987), for instance, teacher ratings were found to have been concentrated in the main at the two extremes of high and low considerations for characteristics of giftedness. Scales listed above have their response points set at between 1 - 5 points and in some cases, the magnitude of rating points are numbered; a situation which traps such scales in the maze of lowered usability value for this study if more objective rating is expected from teachers, parents and peers of students.

(d) The 1971 version of SRBCSS and the Obani adapted version do not cover enough of the cognate characteristics to which more recent research tend to point. Kitano & Kirby (1986), for instance, pointed out that there has been more positive findings with regards to the social, physical, and communication abilities of gifted children.

(e) The Obani adapted SRBCSS provides no technical descriptions in terms of its reliability and validity. Moreover, the adaptation was done specifically for the research purpose of assessing teacher effectiveness for rating traits of giftedness. Ofcourse, rating traits of giftedness is a different thing from rating characteristics of giftedness in specific students. The former is what Obani's adapted SRBCSS is suited for, while the latter is what this study was set out to do.

(f) The ratings obtainable from all versions of SRBCSS do not sum into overall single values capable of providing more global or gestalt picture of ratees' abilities or potential with which to determine the more or less gifted ones. Indices from subscales of SRBCSS only indicate profile patterns of abilities of students. Collating data in such a manner would not allow the determination of the efficacy of rating.

Owing to these drawbacks noticeable in available rating scales, it was decided to develop, rather than directly adapt or use such psychological measures. And to develop a rating scale usable for the purpose of this research, a number of points had to be borne in mind:

(i) The emerging scale should be designed in a way that it would not make psychologically covert demands on raters to ordinarily rate just traits of giftedness. Rather, particular children and youths should be slated for rating for traits of giftedness.

(ii) Cognizance needs to be taken with regards to the fact that culturally disadvantaged and underachieving children with gifted potential would likely be prevalent in the target population of students to be rated. The rating scale was, therefore, designed to avoid undercutting disadvantaged (but potentially gifted) students in the sample for the study.

(iii) A language level easily understandable by Nigerian teachers, parents and peers of students will need to be used at the introductory, instructional and rating sections of the scale to be developed.

(iv) It would be desirable to try out an enlarged response scale which will in addition be openended. This would minimize the undue psychological demands fewer response points make on raters, which in turn limits the objective values of ratings.

(v) As many characteristics and traits of giftedness need to be rated in reference to specific students so that the efficiency of the developed scale will be enhanced. For instance, more traits of cognate characteristics which can also be crosschecked for intrarater stability can be ensured only through elaborate items on the scale. If ratings must also converge into single values for determining how more or less gifted specific students are, then, the overlap of some of the traits accross the cognate characteristics must be posed for rating more than once (even though posed slightly differently); a design which ofcourse increases the items to be rated.

(vi) The emerging scale should reflect some elements of reticent or apathetic characteristics which put outstanding students at risk of being missed out of screening programmes.

(vii) The scale to be developed should enable teachers, parents and peers of students to rate their outstanding traits on the same measures to ensure objective comparisions.

(viii) It would be desirable to develop the scale in a way that no mention is directly made about giftedness or talent. This was seen as necessary in order to avoid a situation where raters who already know stereotypes among students rightly or wrongly perceived as gifted merely going ahead to endorse (by rating highly) such students.

Consequent upon these presumptions, the Scale for Rating Outstanding Traits in Children and Youths (SROTCY) was developed for obtaining one of the core aspects of data collated in the MCA framework utilised in this study.

Developing SROTCY

An extensive review of literature as evident in chapter II was utilized to obtain a large pool of descriptions of positive and negative traits of gifted persons. The psychological needs of all categories of gifted persons were also added to the pool of characteristics. The over a hundred traits and psychological needs pooled together from different sources were listed, and then face validated by requesting teachers, some students and a few of their parents reached at Suleja Academy to tick those ones they commonly observed in the gifted population of the school. A few regular school teachers, randomly reached in a few secondary schools

in Kano were also asked to tick from the listed traits, those ones they frequently observed in their "best" students. After the face validation exercise, a few items which did not receive any responses (i.e. not ticked) were expunged before preparing a fresh list in readiness for writing out items to be pilot tried.

Given the number of traits listed for the second time, it became evident that some of them had elements of similarities which could be expressed differently. Leadership traits, for instance, were found to overlap with some planning and communication traits. Some social skills were also found to have elements of similarities to leadership traits. Hence, it became evident that the numerous traits of giftedness could all be clustered into certain cognate characteristics. Each cognate characteristic would maintain its traits loading and various traits listed may reappear (al beit expressed in a variety ways) in different cognate characteristics. The idea of clustering traits into cognate characteristics, therefore, necessitated a further review of characteristics of gifted children and youths.

EIRC (1992) provides a list of general characteristics of gifted children. A review of the 1976 version of SRBCSS also indicates that some more cognate characteristics like planning, communication and psychomotor traits can be associated with gifted children on a general note. Obani (1987) also collated some more traits volunteered by Nigerian teachers clustering into cognate characteristics of learning, motivation, creativity and leadership. These ones are not itemized on SRBCSS series. Kitano & Kirby (1986) also provided pointers to possible traits of gifted children discovered from more recent research findings which could also cluster into social characteristics of giftedness. These assessment of traits and characteristics of giftedness and gifted children provided a basis for, and the need to work out core characteristics into which a variety of traits could be clustered.

A careful re-examination of listed traits and corroborated against the EIRC (1992) list, the Obani (1987) deseribed Nigerian teachers volunteered traits and the Kitano & Kirby (1986) research pointers, resulted in the clustering of all positive and apathetic traits into nine main

component cognate characteristics. Checked against the previous review of literature about characteristics of gifted children, no less than three authors were found to have made mention of each of the nine cognate characteristics from which as many as 87 traits of giftedness were extrapolated. The cognate characteristics extrapolated, therefore, were in terms of outstanding abilities for learning, motivation, creativity, leadership, precision communication, expressive communication, planning, social and psychophysical capabilities.

When taken as separate characteristics, the nine extrapolated cognate types listed above fit into separate subscales as in the Remzulli et al (1976) SRBCSS. But when broken dawn into traits derived from general characteristics (i.e. as listed by Terman 1926, Martinson 1975, Kitano & Kirby 1986 and EIRC 1982), a cluster of inter-related traits collapsing into the nine cognate characteristics can be figured out. The basis of extrapolating a variety of outstanding traits into cognate characteristics, therefore, is the premises that several gifted children probably manifest the general characteristics across a number of outstanding abilities. As Adderholdt-Elliot (1991) demonstrated, healthy perfectionist tendencies common with truly gifted persons does psychologically energise them to measure up to average across a number of general or cognate characteristics.

In developing the SROTCY, the basis was the listing of an exhaustive number of traits (positive, negative, or reticent and inter-related bits) all of which cluster into the nine cognate characteristics expected to be rated by teachers, parents and peers of outstanding students. SROTCY is basically divided into three parts (see appendix III). The first part introduces raters to the concept of students being outstanding in a number of characteristics. The introductory section also sought for some personal information from raters and points out the specific student to be rated. The second section provides the necessary instruction and examples of how to rate particular students. And the third section of SROTCY is the scale itself, made up of 87 items in the nine cognate characteristics each describing a number of traits.

PILOT TESTING OF RESEARCHER DESIGNED INSTRUMENTS

The Outstanding Students Nomination Inventory (OSNI), the Students Biodata Inventory (SBI) and the initial version of the Scale for Rating Outstanding Traits in Children and Youths (SROTCY) were pilot tried for validation in readiness for this study. It was necessary to pilot-try the instruments since they were researcher designed and also because parts of them were adapted.

Pilot Testing Procedure:

An initial format of OSNI was administered to a sample of 60 teachers and 75 students randomly picked from two Federal Government Colleges, one private and three regular secondary schools all selected from Kano and Kaduna States. In all, 268 students were nominated from the administration of OSNI during its pilot trial. However, based on the premises that a number of experts hold the opinion that only between 1 - 5 per cent of school populations could be regarded as gifted and given that in pilot-trying any psychological instruments, it is important to consider the chance factor, it was decided that only 5 - 8 per cent of the pilot nominated students (i.e. those with the topmost nomination frequencies) would be considered as eligible for assessment of traits of giftedness. Therefore, only 22 out of 268 pilot-nominated students were isolated for pilot screening. Added to them, however, were 10 randomly selected junior secondary level students of Suleja Academy. The Academy students had to be added for pilot screening since they are already identified gifted children and so they were regarded as constituting a control validation sample in the pilot screening. A total of 32 students were, therefore, selected for the pilot screening to validate the SBI and the SROTCY.

As soon as the 32 students to be pilot screened were sorted, the SBI was administered to them in their respective schools. With the pilot administration of the SBI, personal information about the pilot-nominated students, as well as further information to guide the distribution and administration of SROTCY were obtained. Personal information like students' interests and preferences and further information like their home addreses, names of close friends and relatives all of which guided the careful pilot adminstration of SROTCY to control for efficiency and objectivity were found very valuable from the pilot trial of SBI.

Using information derived from the pilot-administered SBI, names of pilot nominated students were fed into the pilot SROTCY. 16 teachers, 30 parents and 19 peers of pilot nominated students were also sorted for the pilot rating exercise.

Subsequently in the pilot study (i.e. a week after the administration of SBI), the pilot trial of the initial version of SROTCY was carried out in the pilot schools in Kano, Kaduna, and Suleja. SROTCY was pilot administered under the personal supervision of the researcher in each of the schools. The pilot rating exercise lasted for about a week.

Approximately two weeks after the pilot administration of the initial versions of the researcher designed instruments, a further pilot validation exercise was carried out in the pilot schools in order to collect data for analysis to determine the validity and reliability of OSNI, SBI, and in particular the SROTCY The following validation exercises were carried out at intervals of two to three days;

(a) A sociometric exercise taken in the classes of pilot-nominated students in Kano Kaduna and Suleja schools.

(b) Administration of Richert type Teacher Nomination Forms (TNF) in the Kano and Kaduna schools.

(c) The administration of Obani's adapted SRBCSS and the Renzulli et al (1976) version of SRBCSS in the Kano, Kaduna and Suleja schools.

(d) Re-administration of the pilot OSNI and the SROTCY at the Kano, Kaduna and Suleja schools.

Validity and Reliability of Researcher Designed Instruments:

Statistical analysis were done on the pilot data collected in order to establish the significance of the validity and reliability estimates of OSNI and SROTCY.

Validity of OSNI:

Using the Richert type TNF, a series of nine subtypes of nomination inventories (re-dubbed Nomination Inventory for Teachers & Students, NITS) were designed each describing five examples of traits of gifted children in the areas of the nine cognate characteristics (i.e. as expected to be rated on SROTCY) Students and teachers other than those who earlier on participated

in the first part of the pilot exercise with OSNI and SROTCY were asked to nominate three to five students whose personality could be described as matching the examples of traits listed on the NITS series. Frequency counts of nominated students on OSNI and NITS series were then correlated to obtain a concurrent validity estimate.

Using the Spearman rank order coefficience (rho) statistics, the number of times students were nominated through the entire NITS series was correlated with frequency counts of students nominated through the OSNI. With critical value at .296 ($\alpha, P \leq 0.05$), an rho value of .73 was obtained. The pointer, therefore, was that a significant level of concurrent validity was obtained for OSNI.

To further isolate the validity estimate of OSNI from pilot data, SROTCY index values were again correlated with OSNI frequency values of each of the 47 pilot nominated students. Table I provides a vivid picture of the predictive validity estimates of OSNI.

Table I: rho Estimates of pilot Data Correlated between OSNI Frequency Values and SROTCY Rating Indices

OSNI	SROTCY			Critical Value
	Teacher Ratings	Parent Ratings	Peer Ratings	
Teacher Nominations	.64*	.55*	.68*	.296
Peer Nominations	.51*	.53*	.62*	

P $<$ 0.05

Table I shows significant levels of correlation between OSNI and SROTCY.

In terms of the construct validity estimate of OSNI, a sociometric study was conducted in the classes of the 32 pilot nominated students in their respective schools. The sociodiagramic analysis indicated that 21 (i.e. about 65 percent) of the 32 students emerged as stars, two as isolates and the remaining 9 belonged to cliques in their respective classes. The indication, thus, was that OSNI proved to be quite valid in the nomination of outstanding students; particularly given that gifted children could be popular or even unpopular based on their positive and negative character-

istics. Hence, positive characteristics of nominated outstanding students may have enhanced their placing as stars ; the negative characteristics of a few of them may have influenced their emergence as isolates and the fact that the Academy pilot sample are all gifted students explains the presence of students belonging to cliques in the sociodiagramic analysis.

Reliability of OSNI:

To establish a reliability value for OSNI, frequency values of the 268 students nominated through the initial pilot administration were correlated with frequency values of 293 renominated students from a readministration of OSNI. The difference in the total number of students nominated and renominated was taken care of by assigning zero values where such students were not nominated at one out of both stages of the test - retest exercise. A coefficience of stability at .79 ($P < 0.05$ and critical value at .296) was obtained to indicate a significant level of test - retest reliability for OSNI.

Validity of SROTCY:

Concurrent validity estimate for SROTCY was established from pilot data obtained using Obani's adapted SRBCSS, and Richert et al (1976) version of SRBCSS, Tables IIa & b show the product moment correlation values of the two SRBCSS versions with SROTCY mean rating indices for the 32 students. Mean rating indices were necessitated because teachers, parents and peers rated each of the students.

Table IIa: Product Moment Correlations Between A-SRBCSS Subscales and SROTCY Rating Indices.

Subscales on A-SRBCSS	Correlation Values with SROTCY Rating Indices
(i) Learning Characteristics	.86 *
(ii) Motivational Characteristics	.80 *
(iii) Creativity Characteristics	.67 *
(iv) Leadership Characteristics	.77 *

$P < 0.05$ (* Critical Value at .296)

Significant levels of correlation were obtained between A - SRBCSS and SROTCY across all subscales,

Table IIb: Alpha Correlations Between SRBCSS Subscales and SROTCY Rating Indices.

Subscales of SRBCSS		Alpha Coefficient Values with SROTCY Indices
(i)	Learning Characteristics	.83*
(ii)	Motivational Characteristics	.78*
(iii)	Creativity Characteristics	.61*
(iv)	Leadership Characteristics	.75*
(v)	Artistic Characteristics	.51*
(vi)	Musical Characteristics	.45*
(vii)	Dramatic Characteristics	.48*
(viii)	Communication (Precision) Characteristics	.66*
(ix)	Planning Characteristics	.67*
(x)	Communication (Expression) Characteristics	.71*

$P < 0.5$ (* Critical value at .296)

Significant levels of correlation were obtained accross all subscales of SRBCSS and SROTCY.

To ascertain the construct validity estimate of SROTCY, a randomly selected sample of teachers, parents and students (from schools other than those involved in the pilot exercise) in Kano were requested to match all items of SROTCY against the nine cognate characteristics. Table III indicates coefficience of concordance values of the three groups in correctly sorting or matching SROTCY items with their appropriate cognate characteristics.

Table III: Coefficience of Concordance Values Adjudged by Teachers, Parents and Students of SROTCY Items and Researcher-named Cognate Characteristics of Giftedness.

Cognate Characteristics	Teachers N = 15	Parents N = 10	Students N = 20	Critical Value
Learning	.86	.69	.71	
Motivational	.84	.54	.80	
Creativity	.71	.56	.77	
Leadership	.78	.61	.81	.360
Communication (Precision)	.44	.38	.42	
Communication (Expressive)	.53	.41	.51	
Sociability	.93	.77	.88	
Psychophysical	.91	.75	.85	

P. $\leq$ 0.05

Significant levels of concordance were obtained on all congnate characteristics of SROTCY

Reliability of SROTCY

To establish the internal reliability of SROTCY, intrarater coefficience of items contributing to each of the nine cognate characteristics of giftedness were calculated. Table IV shows the intrarater coefficient values of the distinct cognate characteristics listed on STROCY as correlated with total SROTCY ratings by teachers, parents and peers of pilot nominated students.

Table IV: Intra-rater Coefficient Values of Cognate Characteristic Subrating Indices Correlated with Total SROTCY Values of Ratings from Teachers, Parents and Peers.

	Cognate Characteristics	Items Contributing to cognate characteristics	Correlations with Total SROTCY Ratings			Critical Value
			Teachers	Parents	Peers	
1	Learning	1, 10, 19, 28, 37, 46, 55, 63, 70, 77, 81,	.91*	.72*	.87*	
2	Motivation	2, 11, 20, 29, 38, 47, 56, 64, 71,	.74*	.88*	.65*	
3	Creativity	3, 12, 21, 30, 39, 48, 57, 65, 72, 78, 82* 85, 86,	.61*	.66*	.58*	
4	Leadership	4, 13, 22, 31, 40, 49, 58, 66, 73, 79, 83,	.85*	.55*	.76*	.296*
5	Communication (Precision)	5, 14, 23, 32, 41, 50, 59,	.71*	.70*	.75*	
6	Communication (Expressive)	6, 15, 24, 33, 42, 51, 60, 67,	.74*	.71*	.78*	
7	Planning	7, 16, 25, 34, 43, 52, 61, 68, 75,	.68*	.81*	.77*	
8	Sociability	8, 17, 26, 35, 44, 53, 62, 69, 76, 80, 84, 87,	.76*	.68*	.92*	
9	Psychophysical	9, 18, 27, 36, 45, 54,	.74*	.76*	.88*	

P. $\leq$ 0.05

All Subscales correlated significantly with SROTCY total rating indices by parents teachers and peers.

To further ascertain the reliability of SROTCY, pilot data from its administration in the two instances during the pilot exercise were correlated. Significant levels of coefficient values were obtained to establish test-retest reliability of teacher, parent and peer ratings.

Table V shows test-retest reliability coefficient values of SROTCY based on teacher, parent and peer ratings.

Table V: Test-retest Product Moment Correlation of SROTCY based on Teacher, Parent and Peer Ratings.

	Teachers N = 16	Parents N = 30	Peers N = 19	Critical Value
Product Moment Coefficience	.84*	.72*	.81*	.296*

P 0.05

Significant levels of stability correlation were obtained for teacher, parent and peer ratings with SROTCY.

BLUE PRINTS OF RESEARCHER DESIGNED INSTRUMENTS:

Following observations made during the pilot study regarding the validity and reliability of the researcher designed instruments, a final editing was effected to produce the blue prints of OSNI and SROTCY. Each instrument had a number of corrections effected on them to ensure a higher level of effectiveness and efficiency for data collection.

OSNI:

(i) The two versions of OSNI (for teachers and students) was necessitated following the observed need to target the introduction and instruction more specifically to the two groups for a more sensitive nomination (see appendices 1a & b).

(ii) The capacities in which peers and teachers were expected to nominate students differed. While some students were nominating their peers because they were classmates or belonged the same dormitories, teachers were expected to be nominating students in their capacities as their class or subject teachers, housemasters or guidance counsellors. To avoid a clumsy response format requiring students and teachers to check the appropriate capacities in which they were nominating students from several situations described, it became necessary to differentiate the two separate formats of OSNI.

(iii) Students were expected to nominate their peers in one more school situation than teachers were to do (see appendix 1a & b). And while some teachers were expected to nominate outstanding students given their performance in subjects they taught, peers were expected to nominate outstanding students given the chances that they belonged to the same study groups. This also necessitated separate formats of OSNI for students and teachers respectively.

(iv) Given the need to list out students nominated through OSNI and to tally the frequency rates of their nomination, it also became necessary to design the Nomination Frequency Form NFF (see appendix 1c).

(v) The use of the 8 per cent selection index for determining screening eligible students nominated through OSNI was observed to be inimical to the need to make nominaions more inclusive than exclusive. For the purpose of data analysis for this study, therefore, all students nominated had their nominaion frquencies taken as part of their screening indexes, irrespective of whether they attained the set criteria for OSNI screening eligibility or not.

SBI:

As a biodata inventory, data indexes for statistical analysis were not necessarily obtained with SBI. Pilot data obtained from OSNI and SROTCY as well as pilot observations of SBI itself, therefore, were the basis for:

(i) Some grammatical editing to reduce the language level of SBI to a more easily understandable level for Nigerian junior secondary school students.

(ii) Reordering and addition of one or two items for more systematic and comprehensive information essential for the screening exercise.

SROTCY:

Following observations from the pilot exercise, the following corrections were also effected on SROTCY as the blue print (appendix 3a) now reflects:

(i) Some grammatical editing of the sections of introduction and instructions, as well as the rating section of the scale.

(ii) Raters were now expected to check out from up to six options, periods describing the length of their familiarity with ratees (see the introductory section of SROTCY).

(iii) Provisions were also added for raters to rate outstanding students in their capacity as gaurdians, school-mates and peer group-mates of ratees.

(iv) Another provision was made in the instructional section of SROTCY for entering the names of ratees for the second time. This second provision was to serve as reminders to raters with regards to who they were rating.

(v) To minimize the tendency of raters resorting to patterning their ratings towards the same concentration, a systematic re-arrangement of all items on SROTCY was effected. Thus, in the Blue Print, each of its nine pages has items describing traits in at least between 6 - 9 cognate characteristics. However, the pattern of itemizing the traits was such that those describing a given cognate characteristic could be picked out from across the pages in a horizontal listing. Almost all first items on each of the nine pages of SROTCY, for example, described traits of learning characteristics of giftedness (irrespective of serial numbering).

(vi) The final blue print of 87 items validated for SROTCY were grouped into the nine cognate characteristics as follows:

(a)	Learning Characteristic	-	11 traits
(b)	Motivation Characteristic	-	9 traits
(c)	Creative Characteristic	-	13 traits
(d)	Leadership Characteristic	-	11 traits
(e)	Communication (Precision) Characteristic	-	7 traits
(f)	Communication (Expressive) Characteristic	-	9 traits
(g)	Planning Characteristic	-	9 traits
(h)	Sociability Characteristic	-	12 traits
(i)	Psychophysical Chararcteristic	-	6 traits
		Total =	87 traits

(vii) Further adjustments were effected in terms of rating values accorded each of the ten response points to reflect a more appropriate representation of rating indices. From the rating key (appendix 3b),

it can be observed that there are 4 categories of rating value patterns.

(a) Positive one directional rating in which response points increase in value from 0 to 9 towards the description implying that given traits are rated as outstanding. This pattern of rating values (i.e. 0 - 9) was used with regards to items describing positive and highly prevalent traits noted with gifted children and youths.

(b) A few items had rating values ranging from 5 (for very outstanding) and decreasing in magitude to 1 in the middle of the response points. The remaining five points are then also valued from 1 at the middle to 5 at the extreme end implying a not outstanding rating. Such a pattern of values was used for items (e.g. item 6) describing traits which gifted children and youths easily conceal.

(c) Some few items also had rating value patterns ranging from 4 (for the very outstanding extreme) to 0 at the opposite end. Values are, however, repeated on succeeding response points to cover the ten points in all (see item 24). This pattern was used for traits which could be exibited by gifted children inconsistently (i.e. sometimes positively and at other times negatively).

(d) A few other items also had a rating value pattern extending from 0 at both ends and increasing to 4 at the midpoints of the response scale (see item 46). This pattern was used for adjudging traits which could be effectively concealed with resorts to conforming to general behavioural characteristics of peers, school mates, or environmental variables.

(viii) Owing to the bogus nature of indices derived through SROTCY in the pilot study, a stanine conversion table was worked out for total rating values which would make up one set of data to be collected for matrixing. Appendix 3c provides the stanine conversion table used for raw scores obtained from SROTCY.

The pilot study conducted for this study provided very valuable insights which guided the administration of scales, data collation and analysis. It provided, no doubt, a good basis for the validity and reliability of OSNI and SROTCY as the researcher designed and affective instruments used in this study.

STANDARDIZED PSYCHOLOGICAL INSTRUMENTS:

It is strongly advised that for the purpose of identifying gifted children and youths, nominations and ratings of characteristics should not be ordinarily or singly used for decision making in terms of determining who is more or less gifted (Renzulli & Hartman 1971, Renzulli et al 1976). In using a multiple criteria approach for identification and selection purposes, the generally accepted standard is to administer not only subjective measures (i.e. nomination inventories and rating scales) but also more objective measures (i.e. standardized psychological instruments like intelligence and achievement tests) which will provide complementary data as well as a comprehensive, affective and cognitive (respectively) indices in a gestalt of students' abilities (NPCEGTC 1985, and Kitano & Kirby 1986).

Two sets of cognitively based psychological instruments were used in this study: The adopted types and those ones developed and standardized directly on Nigerian norms.

ADOPTED PSYCHOLOGICAL TESTS:

The Torrance Circle Test (TCT) adopted by the researcher and the Standard Progressive Matrices (SPM) adopted by Bakare (1989) were used in this study.

Adopted Torrance Circle Test (ATCT):

Selecting a test of creativity to complement other screening devices in gifted identification can be easily fraught with problems of culture-fairness. Yet, since creative ability is regarded as one of the cognate characteristics of giftedness, data about the creative abilities of children and youths being screened and rated is very relevant in a multiple criteria approach (Getzels & Jackson 1962, Torrance 1980, and Nwazuoke & Abosi 1992).

A widely used measure of creativity in gifted screening exercises is the Torrance Test of Creative Thinking (TTCT). Other measures commonly used include the Situational Tasks Creativity (STC) and the Worksheet for Identifying Creative Thinking (WICT) all of which are documented in EIRC (1992). A common feature of these tests which constitute a drawback for their use in the present

study is the norm referencing. Most items or tasks on these measures convey some culturally specific meaning which in themselves are capable of inhibiting creative behaviour in people outside those cultures. One measure of creativity normed to Nigerian population - the Ibadan Creative Assessment Scale (ICAS) is not a direct and objective enough measure of creative ability in children and youths (Akinboye 1976). This is so because ICAS entails that children and youths rate their own creative abilities. ICAS, therefore, does not actually yield data on the creative output of testees and so it cannot yield indices for an objective comparison of cognitive aspects of the cognate characteristics of giftedness.

One measure of creativity regarded as culture-fair enough and capable of meeting the MCA design for more objective assessment of creative potential or ability of children and youths being screened for traits of giftedness is the Torrance Circle Test (TCT). The TCT is easy to administer and does not contain complicated items. A set of two rows of circles are provided, and testees are simply required to produce paintings and drawings (using those circles) of meaningful objects which can be recognized or labeled logically. The TCT yields data regarding fluency, originality, elaboration and flexibility of testees' creative abilities.

The TCT was validated with the Minnesota Tests of Creative Thinking and described to have good reliability and validity estimates (Torrance 1972). The TCT was, therefore, adopted for use in this study. However, instructions had to be simplified to a language level deemed to be easily comprehensible to students (see appendix 4a). The Adopted TCT (ATCT) was also not timed in order to eliminate or minimize the inhibiting effect of psychological pressure which can constitute a drawback on the creative output of testees.

Standard Progressive Matrices (SPM):

The Standard Progressive Matrices (SPM) used in this study was the Bakare (1989) adopted version which has been pilot tried with fifth form secondary school students in Nigeria.

Originally developed by Raven (1939), the Bakare adopted SPM has four sections (labeled A,B,C,D and E), each referred to as sets. Scores from the five sets of SPM version administered in this study yield indices which can be used to describe the intellectual ability of students. It essentially has re-usable test sets accompanied by answer sheets on which biographical data is expected to be provided along with response to items on each of the five SPM sets. Each item on the SPM has a multiple choice response format. Sets A and B with 12 items each have multiple choice response formats numbered 1 - 6, while sets C,D, and E have 12 items each with multiple choice response formats numbered 1 - 8.

Other Psychological Tests

Other psychological tests directly used for data collection included Test G and the Gifted Education Programme Screening Examination (GESPE: E & M).

Test G:

Test G, regarded as a gifted screening test was used by the National Board for Educational Measurement (NBEM) for specifically sorting out students qualified for entry into the Suleja Academy. No specific validity and reliability descriptions about Test G are available from NBEM but it is thought to have good predictive validity in Nigeria's gifted education programme (NBEM, 1991).

A paper and pencil test, Test G has fifty items each based on a pattern of figures from which specific parts are missing. Responses are patterned along selecting the correct figures or designs to complete each item. Correct responses are possible in the main through visual discrimination and perception of logical relations which are indices of global intelligence.

Section A of Test G consists of 38 items and response sets numbered 1 - 6 with only one correct answer of each item. Section B consists of 12 items with response sets lettered A to E also with only one correct answer.

Gifted Education Programme Screening Examination (GEPE) E & M:

The GEPSE series were developed by the National Board for Educational Measurement in conjuction with Suleja Academy. GESPE

formats E & M are essentially achievement tests, some of which have been used in the past few years for selection into Suleja Academy. The series used for data collection in this study were the 1992 version administered for screening the 1992/93 fresh students of the Academy. The use of these series specifically was informed by the need for an objective comparison of achievement data collected between new students of the Academy (whose abilities may not have been so much influenced by programmes of the school) and outstanding students nominated for this study.

Although no precise estimate of types of reliability and validity levels for GEPSE are available, the series are thought to be useful for screening for children and youths with high academic abilities (NBEM, 1991).

The E & M aspects of GEPSE are achievement tests in English and Mathematics respectively regarded as the basis for any significant achievement in all other school subjects. Both aspects are strictly timed at 2 hours with 50 items each. Approximately 30 items in each version have response sets lettered A to E. The remaining 20 items require written expressive responses from testees. Separate answer sheets are provided for testees' responses.

In all, therefore, approximately 7 main psychological instruments were used for data collection in this study. Two of the instruments were researcher designed and the remaining are standardized types.

POPULATION AND SAMPLE:

The population for this study were of two types: The rater and the ratee population. The ratee population was Nigerian junior secondary school students whose characteristics were rated for outstanding traits; while the rater population comprised of teachers, parents and peers who rated characteristics of outsanding students.

The ratee population refers, therefore, to children aged between 10 - 15 years who were in junior secondary schools in Nigeria during the 1992/93 school calender. Considering late entry to school by African children, a mean age of 13 was considered appropriate for a sample of children whose characteristics could be outstanding to the extent of being gifted.

Nigerian teachers, parents and peers of junior secondary school students were also regarded as part of the population because in the main, they rated students abilities to make up part of the data collected for the study. The bulk of the data collected were actually about characteristics of giftedness in specified outstanding junior secondary school students.

To reflect a Nigerian population which is pluralistic in culture, a stratified random sampling approach was used to obtain a sample across the board in terms of teachers, parents and peers of, and the outstanding students themselves. From five zones and seventeen schools (see table VI) obtained by area sampling of parts of the country, a sample size of 2,320 was obtained for the study. Although a larger sample size was initially derived for the study, an experimental mortality of about 25 per cent was experienced. The mortality rate resulted from desertions at different stages or phases of the study, invalidated responses and some matrix-incomplete data sets obtained at the collation stage.

Table VI clearly shows the total sample from which data analysis in this study was based.

Table VI: Sample Distribution of Nominated Students, their Teachers, Parents and Peers

Population Zones	Nominated Students	Teacher Raters	Parent Raters	Peer Raters	Totals
Kano (4 schools)	62	136	85	151	434
Suleja (1 school)	40	28	44	62	174
Calabar (4 schools)	124	171	97	196	588
Ibadan (4 schools)	93	194	109	216	612
Minna (4 schools)	72	146	106	188	512
Total	391	675	441	813	2320

Table VI shows that Kano, Calabar, Ibadan and Minna zones or centres were used to obtain sample of nominated students screened for gifted characteristics. The fifth zone at Suleja was utilised for the random selection of already identified gifted students whose ratings by their teachers, parents and peers were used for corroborating data collected in other zones.

In each of the four zones from where students were nominated, 4 schools were utilised for the screening exercise. The schools comprised one each of Federal Government Colleges, private schools, urban and rural based public schools.

From the total sample of 2320, 291 students constituted the ratee population and 1,929 teachers, parents and peers constituted the rater population.

SCREENING PROCEDURE:

The screening procedure followed for obtaining both sample and data was conducted in four phases. Phasing the screening process into four stages was necessitated by a number of reasons:

(i) OSNI was essentially used for deriving the sample of outstanding students screened for gifted characteristics. The nomination of these outstanding students (itself not a simple exercise), therefore, had to be completed before the other screening exercises could be carried out.

(ii) Some information like names and addresses of ratees and raters had to be derived (through OSNI and SBI) before the administration of other screening instruments like SROTCY and SPM. Names of nominees, for instance, had to be fed into SROTCY before they could be administered to appropriate teachers, parents and peers who themselves were selected only through SBI.

(iii) The time required for the administration of some of the instruments entailed that they all be spread into phases to ensure a better organised data collation.

(iv) The psychological nature of some of the instruments demanded that they be administered with considerable time lapse to allow for maximum output from students. For example, the creativity test needed to be administered at a different phase or long enough time interval from the GEPSE series to avoid undue psychological strain in the cognitive ability of students, which in the view of

experts actually inhibits, rather than allow for maximum creative output (Torrance, 1972).

(v) Since one of the basic premises of the MCA is the provision of comprehensive data regarding students potential levels of abilities, several instruments were administered in the screening exercise. It was, therefore, considered better to administer the researcher designed instruments and standardized tests at reasonable intervals rather than jam-administer them within a short period. The former approach, of course, allowed for better organised data collection, collation and matrixing.

Thus, four stages were phased up in this study during which students were nominated, sample derived, ratings taken and psychometric tests administered to obtain data about the characteristics and abilities of outstanding students.

Phase I

The first phase of data collection was meant to familiarize the researcher with the five zones (Kano, Abuja, Calabar, Ibadan and Minna), employ the services of research assistants and to personally administer OSNI to teachers and students in selected schools.

The five zones were selected to reflect geopolitical and ethnic representations in a culturally plural Nigeria. Thus, Kano in the far North, Minna in the Middle belt regions, Ibadan in the Southwest and Calabar in the Southeast were designated zones for data collection.

The Suleja Academy had to be included as a centre because of the need to collect data from students already identified as gifted. Although the spread of the selected zones ensured Hausa, Yoruba and some minority ethnic representation in the sample, the lack of complete balance was not considered a serious drawback since ethnic factor itself is not one of the variables slated for investigation. Giftedness, afterall, is not considered the monopoly of any specific tribe in Nigeria. Above all, Federal Government Colleges were among the selected schools in each zone and since admission to these schools is based on merit and state quotas, ethnic representation was ensured in the in the sample. The selection of a mixture of Federal Government Colleges, private schools, urban and rural based schools also ensured that both high academically achieving students and the

underachieving ones, as well as the disadvantaged or double labeled (but potentially gifted) students can be found in the sample nominated for screening.

Having selected schools in each zone with the aid of the research assistants, they had to accompany the researcher to visit each school and to assist in administering the OSNI to selected teachers and students.

With due permission from the school authorities in the four zones (except Abuja), a random selection was done to obtain one each of JSS 1 & 2 form masters/mistresses, House masters or mistresses, patrons of clubs and societies and games masters or Physical Education teachers. A master list of all teachers in each school and their responsibilites was used for the random selection. In some cases, teachers of core subjects like English, Mathematics and Social Studies, as well as aptitude based subjects like Music, Art, and Introductory Technology were added to the sample of teachers in respective schools. Also, from an officially provided list, a random selection of JSS I & II students was done in every school in the four centres.

In all, between 8 - 12 teachers and 12 - 15 students were randomly selected in every school. All those selected were duely informed of their selection to participate in a research work. Separate meetings were then fixed (lasting 30 - 40 minutes) in each school during which all teachers and students respectively selected were briefed on the nature of the nomination exercise and introduced to the procedure for completing the Nomination Form of OSNI. The introductory and instructional sections of OSNI served as the guide for discussions in the meetings (see appendices 1a & b).

Immediately after the instroductory meeting, teachers and students were then separately required to respond to OSNI by nominating outstanding students in their respective schools. All students nominated formed the pool of students regarded as potentially gifted in this study and were then slated to be screened for characteristics of giftedness. Table IV shows the number of students nominated from four zones and whose complete data on the MCA matrix were used for analysis.

Since students at Suleja Academy are already officially identified as gifted, the Suleja zone was exempted from the OSNI exercise. A simple random selection of fourty JSS I students was done by using the students list and with the assistance of an employed research assistant in the Academy.

The OSNI exercise in each school in the four centres lasted about the whole working hours each day. Hence between 2 to 3 days was spent in each of the four zones while a day was dedicated for the Suleja selection.

As soon as the OSNI exercises were completed in each zone, names of nominated students and their nomination frequencies were entered into the Nomination Frequency Form (see appendix 1C). Those deemed eligible for screening were asteriked accordingly. Each zone then had a completed and comprehensive NFF in readiness for the remaining part of the screening exercise.

Having completed all aspects of the OSNI exercise in each zone, a day was set aside for training of the two assistants recruited through the state Ministries of Education. The training was aimed at equiping the assistants with information about characteristics of gifted children and how to go about efficiently administering all screening instruments, particularly the SROTCY. As part of the training exercise, each research assistant also had samples of SROTCY and the other psychological instruments partly administered to them in order to familiarize them with the nature of the screening exercise and how they could handle questions and ambiguities which may arise in the course of the screening. The training was directly handled by the researcher himself and since care was taken to ensure that each assistant employed had a minimum of first degree in Education, less problems of comprehending intructions were easily overcome.

At the end of the training exercise, each assistant was left with a number of items for conducting the following phases of the screening exercise. These included:

(i) A list of nominated students in each zone entered into completed NFF of OSNI;

(ii) Adequate samples of SBI;

(iii) Adequate samples of SROTCY;

(iv) Adequate samples of SPM, Test G, and GEPSE: E & M.

In each zone, dates were fixed for the administration of these instruments. Each assistant was also to expect supervisory visits at each phase of the screening exercise. At the end of phase I, therefore, the research assistants in the four centres of Kano, Minna, Calabar and Ibadan were well equiped to begin the remaining phases of the screening exercise.

Phase II

The second phase of the screening exercise took place in each zone a week after the OSNI exercise. The two assistants in each zone either visited each school together or divided up the schools between themselves to administer the respective tests. The SBI, GEPSE: E & M and SPM were slated for administration to nominated students in their respective schools during this phase of the screening exercise. While SBI was slated at this phase because it was expected to provide some vital information necessary for subsequent administration of SROTCY, the GEPSE series and SPM were slated in the same phase to provide the initial cognitively based data before any ratings of nominated students would be taken.

Armed with a list of nominated students, the assistents visited the 4 schools in their zones one after the other. In each school, a day was set out during which with the co-operation of teachers, the three instruments were administered at intervals of 1 - 1½ hours.

All nominated students in each school were seated in a class considered conducive for test administration in terms of adequate ventilation, less distractive environment and proper seating arrangements. Nominated students were then briefed about the purpose and procedure of the testing exercise. However, extra care was taken not to mention the rating exercise expected during the next phase of the screening. This was in order to avoid attempts by nominated students to unduely influence the rating exercise.

The SBI, GEPSE: M, GEPSE: E and SPM were administered in that order. In all, the SBI was completed by nominated students in each school between 15 - 20 minutes. The GEPSE: M and the GEPSE: E,

given the test regulation were timed at 2 hours and 1½ hours respectively. Instructions as contained in the SPM manual were strictly followed and the matrices administered accordingly. Although the SPM administration was not timed, each student's finishing time was recorded on their answer sheets by the assistants.

The research assistants clearly read out instructions for each test to students before they began responding. Questions from students were also answered to further clarify instructions. For most research assistants, the four sessions of testing were divided into two: The first two sessions (for the administration of the SBI and GEPSE.M) was accorded the morning hours, while the next two testing sessions (for the administration of GEPSE: E and SPM) was slated for the afternoon hours. A lunch-break period was slated between sessions of the morning and afternoon hours.

At the Suleja Academy, the sample of selected students had the SBI administered to them by the research assistant employed for the school. Since the same students were admitted into the Academy based on their performance on the GEPSE and SPM results administered to them through the National Board for Educational Measurement the previous year, the research assistant only had to enter from records, the respective students' results into the individual Identification Matrix Cards (IMC) earlier supplied (see appendix V).

Phase III

After phase II of the screening exercise, a one week interval was created to allow nominee outstanding students take a rest and to create the opportunity for the administration of SROTCY to their teachers, parents and peers.

The first task during phase III of the screening exercise was to use the NFF of OSNI to fill in names of all nominated students in each of the four zones into the SROTCY. The assistants were instructed to ensure that names of each nominated student was incerted into at least eight copies of SROTCY. Given combined information from OSNI and SBI, as well as the list of teachers and students who participated in the nomination exercise in phase I, the researcher directly supervised the assistants in another sampling exercise of raters. Two to three teachers (preferably house masters, classmasters, year group masters and to lesser extents, teachers of core subjects or games masters), two parents (specifica-

lly the father/gaurdian and the mother) and three peers of each nominated student were randomly selected in each school. The list of raters compiled for each student was then crosschecked (using SBI) to ensure that friends or peers closely related to nominated students or their preferred teachers who would tend to rate nominated students without due consideration were not included in the rating exercise. At least two categories of raters were also selected to ensure some measure of objectivity in the rating exercise.

Using the SBI, addresses of parents of nominated students were also sought and written out on envelopes in preparation for mailing SROTCY to some parents whom the assistants could not reach for a direct rating exercise. Researcher addressed and stamped envelopes were provided for the return of completed SROTCY in such cases.

Having completed all the preliminalaries of phase III, the assistants in each zone were then mandated to duely inform selected raters and to arrange separate meetings with respective teachers and peers of nominated students. Each group (i.e. of teachers and students separately) were carefully led through the SROTCY introductory and instruction sections. Questions were answered with regards to how to correctly complete SROTCY. Later arrangements were made to meet parents with whom direct contact could be made in order to carry out the SROTCY exercise. Judging by supervisory shuttle visits to each of the four zones during phase II of the screening exercise, SROTCY was completed by most raters in periods of between 50 minutes to one hour.

SROTCY was also administered to teachers, parents and peers of selected students at Suleja Academy using the same procedure as in the other four centres.

The screening exercises during phase III were carried out simultaneously in each zone, lasting 1 - 2 weeks.

Phase IV

At the final phase of the screening exercise, two main tasks were undertaken: Administration of the remaining screening tests (i.e. ATCT and the Test G); and collection of most current academic achievement scores of nominee students in their respective schools.

As usual, research assistants in their respective zones brought together nominated students in each school and administered the untimed ATCT to them in classes considered less distracting in terms of environmental extraneous variables. At a stipulated interval of 1½ - 2 hours, or during an arranged afternoon testing session, the same nominated students in each school were reassembled for the administration of Test G which by its regulations is timed to one hour. During both testing sessions, instructions were carefully read out and questions answered to ensure clarity of purpose.

While these remaining testing exercises were going on simultaneously in all schools, the researcher then undertook zone by zone visits to supervise the screening and also to personally collate current school achievement scores of nominated students. Immediate past terminal or sessional examination results were used as the basis for current academic achievement of nominated and selected students in the five zones. Unlike GEPSE, the current achievement scores were regarded purely as teacher assessment of academic performance of students nominated into the pool of our potentially gifted students.

Given stipulations in the National Policy on Education, results of four core subjects (English, Mathematics, Social Studies and Integrated Science) as well as two other subjects which students indicated as their areas of interest (based on information derived from SBI) were extracted from cumulative record cards or the appropriate continuous assessment records of students. These were directly entered into the Current Academic Achievement Sheet (CAAS) of each zone for individual students (see appendix VI). The CAAS has provisions for serial entry of nominee students' names as in the NFF of OSNI and columns for entry of subject marks or grades.

At the Academy, the ATCT was administered to selected students in the same procedure as it was done in the other zones. The research assistant also went into official records of students to extract Test G results of students (since it was administered to them as

part of the NBEM screening procedure for selection into the school). These were entered directly into the individual students Identification Matrix Cards as was done for the GEPSE and SPM results of the same students. The researcher then directly collected the CAAS data for the Academy students the way it was done in the other four zones as well.

The Phase IV screening exercise was completed in each zone in one week and all data handed over to the researcher directly

MULTIPLE CRITERIA DATA COLLATION:

Since a number of measures ranging from nomination inventories to cognitively based tests were administered, every aspect of data collected had to be systematically collated to initiate the assessment of students' abilities and characteristics. Thus, data collation began with OSNI through SROTCY to the CAAS.

OSNI

Having administered OSNI to randomly selected sample of 164 teachers and 232 students during phase I of the screening exercise, data in terms of the frequency or number of times individual outstanding students got nominated had to be collated. For that purpose, the Nomination Frequency Form (see apendix 1c) was used to enter the names of every student nominated from OSNI. As frequently as names of the nominated students reappeared from the OSNI Nomination Forms, so were appropriate rows of boxes correponding to nominees' names ticked.

For each of the four zones, therefore, two separate NFF lists (for teachers and students) were produced bearing the names of all nominated students. Each nominated student also had against his or her name, their total frequency index gotten by tallying the number of times they were nominated by their peers and teachers respectively.

From both NFF compiled using teacher and peer nominations, all nominated students had between 2 - 15 total frequency indexes. Therefore, using the total nomination values of 1 - 15, frequency index of nominated students were categorised for the purpose of data matrixing. And since the matrix used for this study has

five categories of students levels of abilities or characteristics, the following categorisations of frequency indexes were used for assessing nomination values:

Table VII: Categorisation Levels of OSNI Frequency Indexes

Total Frequency Index	Matrix Categorisation	Gifted Rating Eligibility
1 - 3	below average	
4 - 6	average	
7 - 9	Outstanding	*
10 - 12	Very Outstanding	*
13 - 15	Extremely Outstanding	*

* Total frequency index of 7+ is regarded as the cut-off for considering nominated students as eligible for rating for giftedness. In practice, the cut-off was only for data analysis, but all students nominated were screened for traits of giftedness. Also, the gifted students at Suleja Academy were regarded to be at very outstanding levels in terms of OSNI data matrixing.

Appendix 1d is a sample of completed NFF from one of the schools where OSNI was administered to obtain a sample of nominated students.

At the end of phase I of the screening exercise during which OSNI was administered to a sample of teachers and peers, 440 outstanding students were nominated for further screening.

SBI

The Students Biodata Inventory (SBI) is essentially an information deriving instrument. Information collated from SBI is actually not for matrixing purposes, but for enhancing the efficient administration of SROTCY and enhancing the validity of other aspects of data collection, collation and analysis.

During phase II of the screening exercise, about 434 students from four centres (out of the initial 440 nominated students from phase I) had the SBI administered to them. 40 students randomly selected at Suleja Academy also had the SBI administered to them; bringing the total number of students in the initial sample of

pool of potentially gifted children and youths to 474.

The full names of each of the 474 students were derived from SBI and fed into apprximately 2,000 copies of SROTCY in readiness for the screening exercise to be carried out by teachers, parents and peers of nominated students.

Information about nominated students' dates of birth, sex, present schools and classes were also fed into their individual Identification Matrix Cards (IMC) in readiness for data analysis.

From SBI, information about three best subjects of nominated students served the purpose of selecting some teachers for the rating exercise. The same information also aided data collection with respett to the current academic achievement scores of students. The names of best friends and preferred teachers of nominated students as derived from SBI was also used to cross-check the list of teacher and student raters to ensure that those personally related were not included in the rating exercise. The purpose here was to minimize unduely biased rating of students abilities.

Using SBI information further, nominee students' best clubs/ societies and their indicated hobbies helped in selecting some more teachers and even peers for the rating exercise. Patrons of clubs and societies as well as Housemasters or gamesmasters are regarded as potentially reliable in terms of effectively rating out-of-class outstanding traits which form part of the cognate characteristics of giftedness.

Since in the African setting, some children may not be brought up by their own parents, it was necessary to ensure that parents rating nominated students were those directly responsible for their upbringing and with whom the students had stayed long enough to be able to identify outstanding traits. Vital information for selection of parents or gaurdians who rated students was derived from SBI.

GEPSE: M

A standard marking guide was used for scoring students' responses to GEPSE:M. Items 1 - 33 had multiple type response formats, while items 34-50 required short answer responses. Correct and appropiate responses were scored maximum of one point This brought the total score obtainable from GEPSE:M to 50 points.

GEPSE: E

Like the M version, GEPSE:E was scored based on a standard marking guide. All fifty questions have multiple choice reponse formats. Each correct response was scored one point. All students, therefore, had their responses scored out of fifty.

SPM

The marking guide for the Standard Progressive Matrices was provided along with its manual (Bakare 1989). Each set (i.e. A, B, C, D & E) comprising 12 questions was scored along columns into which responses were made by students on the answer sheets. The subtotal of scores obtained by each student on every set of SPM were calculated. The subtotals were then added to povide a grand total entered into the appropriate space provided in the answer sheets. Each students' grand total was also converted to the appropriate grades.

Given the manual recommendation, a mean score of the group had to be worked out to produce the equivalents of matrix categorisation levels used in this study. Thus, the following raw marks conversion to letter grades and matrix levels were obtained:

Table VIII: Conversion of Raw Scores to Letter Grades on SPM for Nigerian Junior Secondary School Students

Raw Scores	Letter Grades	Matrix Categories
1 - 12	E	Below Average
13 - 24	D	Average
25 - 36	C	Outstanding
37 - 48	B	Very Outstanding
49 - 60	A	Extremely Outstanding

For students of Suleja Academy, their scores for GEPSE: M & E and SPM were obtained from records of the screening exercise used for their selection into the school for the gifted.

SROTCY

Before calculating the rated values of SROTCY for each nominee student, cognizance was taken of two important information derived from rater's introductory response (see introductory section of SROTCY). Where a rater claims not to have known the nominee he/she is asked to rate, the entire rating response is regarded as

invalidated. Also where a rater indicated that he/she is rating nominee as a personal friend, the rating response is also regarded as invalidated.

The rating values of SROTCY items are provided in appendix IIIb. The rating values were used as the standard scoring guide. The raw values obtained from SROTCY, however, had to be converted into stanine scores as provided in appendix 3c. The stanine conversion table was worked out using percentage classifications based on foactors such as teacher effectiveness for identifying gifted students (as proved in research literature) and the five point matrix data classification. This implied that given the mean score of SROTCY values obtained from the study, no less than 50% of rated students with the highest scores would be deemed to place at outsanding (and above) of the matrix categorisation levels.

ATCT

The Adapted Torrance Circle Test was scored for each nominee as well as the Academy students on the four creativity components of fluency, originality, elaboration and flexibility. However, rather than pigeon-hole the scoring to examples provided in the original TCT, some accomodation was allowed to enable students earn scores as long as their responses reflected their cutural settings and as much as presentations remained within given scoring guidelines.

The fluency scores were determined by the total number of objects drawn or painted using the circles as the main frames relecting the responses made. For the entire sample, total fluency scores in this study ranged between 3 - 8 points.

The score for originality was obtained by counting exclusively, only those items which do not appear to be commonly found in students immediate environment. Objects like balloons, balls, buttons, the earth, moon, sun, fruits, human faces (except as fantasy or expression), pans (except with drawn or painted contents), and vehicle tyres of any kind were not counted for originality. Where responses are named but they do not reflect the true indentity of the object drawn, half a mark was given. Care was taken not to count seemingly repeated responses for originality.

Thus, common categories of original responses like masks, alphabets, numbers, bicycles, animal faces, tables e.t.c. were not counted twice. Students generally scored between 2 - 6 points on originality.

For elaboration, points were given for extra lines added to pictures or paintings which tend to make some significant impressions to the responses. A student, for instance, made a coiled snake out of a circle and drew out its head, tongues, and fang; scoring a point each for such elaboration. Generally, elaboration scores obtained by students were between 1 - 7 .

Flexibility points were obtained by matching each individual student's responses to a set of categories of responses provided in the test manual (see appendix IVb). A point was given for each category referrable to testee responses (except for where some specific categories repeat themselves for more than once in a response). Where a response, however, fits to more than one category, more points were given. Flexibility scores of students ranged between 4 - 7.

Total scores of fluency, originality, elaboration and flexibility were added together to determine the final ATCT scores. The least creativity score of the sample was 6, while the highest score was 31. These were converted appropriately to percentile ranks for data matrixing. Table IX below shows the percentile ranks of raw scores from ATCT.

Table IX: Percentile Rank Conversion of ATCT Raw Scores

ATCT Scores	%ile Ranks	Matrix Categorisations
23 - 31	90th +	Extremely Outstanding
18 - 22	85th - 89th	Very Outstanding
11 - 17	80th - 84th	Outstanding
8 - 10	75th - 79th	Average
0 - 9	74th -	Below Average

Test G

With multiple type response format, students responses on Test G were scored using a standard scoring guide which allots one mark for every correct response. All students scored etween 9 - 46.

Table X: Test G Raw Scores in Matrix Conversion

Test G Scores	Matrix Categorisation
41 - 50	Extremely Outstanding
31 - 40	Very Outstanding
21 - 30	Outstanding
11 - 20	Average
0 - 10	Below Average

Current Academic Achievement Scores (CAAS)

Current academic achievement data of all nominated and selected students were collected during phase IV of the entire screening exercise. In almost all cases, the previous term's students scores in English, Mathematics, Social Studies, Integrated Science, and any two subjects of interest (if outside the core subjects hereto listed) were personally compiled by the researcher. Mean achievement scores (i.e. total score of individual students from all subjects divided by number of subjects recorded on the CAAS were then computed.

For all students who had CAAS data compiled, a stanine classification was worked out in readines for data matrixing. Table XI shows the CAAS stanine levels of raw mean score distribution obtained from CAAS.

Table XI: Stanine Distribution of Raw Mean Scores from CAAS of Five Zones

Mean Scores	Stanine Scores	Matrix Categorisation
70+	9	Extremely Outstanding
60 - 69	8	Very Outstanding
50 - 59	7	Outstanding
40 - 49	6	Average
39 -	5 - 1	Below Average

In all, therefore, data was collected and collated for each student from nine sources in readiness for matrixing, given the MCA stipulations.

DATA MATRIXING:

For the purpose of analysis, an Identification Matrix Card (IMC) was designed for this study (see appendix V). The IMC was used solely for data matrixing and analysis.

The preliminary section of IMC makes provision for entry of individual students' names, their schools, states of origin, local government areas, age, class and sex, In the main part of the IMC, provision is made for the entry of data sources. Those listed in the present study include Test G, SPM, GEPSE:E, GEPSE:M, Current Academic Achievement Scores, ATCT, OSNI:T, OSNI:S, (i.e. for teachers and students), SROTCY:T, SROTCY:Pts, and SROTCY:Prs (i.e. for teachers, parents and peers respectively).

There are five main score categorisations on IMC:

(i) Extremely outstanding, valued at 5 matrix points.
(ii) Very outstanding, valued at 4 matrix points
(iii) Outstanding, valued at 3 matrix points.
(iv) Average, valued at 2 matrix points.
(v) Below average, valued at 1 matrix point.

Raw and converted data from the eleven sources were entered for each student in order to calculate a final matrix score for each individual. Some raw data had to be converted essentially to provide a basis for comparison with the sample of students from the Suleja Academy who obviously were already identified and whose data served to corroborate nominated and outstanding students' matrix gradings. Table XII is a breakdawn of score conversions, grades and raw data as compartmentalized into the five categorisations on the IMC.

Table XII: Score Categorisations on IMC

Data Sources	Extremely Outstanding	Very Outstanding	Outstanding	Average	Below Average
Test G	41 - 50	31 - 40	21 - 30	11 - 20	0 - 10
SPM	A	B	C	D	E
GEPSE:E	41 - 50	31 - 40	21 - 30	11 --20	0 - 10
GEPSE:M	41 - 50	31 - 40	21 - 30	11 - 20	0 - 10
CAAS	Stanine:9	:8	:7	:6	:5
ATCT	90th%ile +	85th-89th%ile	80th-84th	75th-79thile	74th-%ile
OSNI: T	13+	10 - 12	7 - 8	4 - 6	1 - 3
OSNI:S	13+	10 - 12	7 - 8	4 - 6	1 - 3
SROTCY:T	Stanine:9	:8	:7	:6	:5
SROTCY:Pts	Stanine:9	:8	:7	:6	:5
SROTCY:Prs	Stanine:9	:8	:7	:6	:5
Column Tally (C.T.) of data sources checked					
Multiplied by Weight (W)	..X5	..X4	..X3	..X2	..X1
CT X W					
Cross Addition					

For the purpose of this study, only sample students whose matrix data were complete from the eleven sources had their abilities, nominations and ratings analysed (see table VI). The last four rows of the IMC were used for collating each student's matrix score in the following steps.

(i) Tallying the number of times individual students' data can be checked in each score category along the sources of data listed. Students who obtained score categorisations of 'very outstanding'

from four sources had, for instance, a value of 4 entered into the IMC row specifying Column Tally (CT).

(ii) The column tally value is then multiplied by the weighted value of each IMC score categorisation. With a CT of 4, on 'very outstanding' IMC categorisation, for instance, a CT X W (i,e, 4 x 4) value of 16 will be obtained and appropriately entered into each column. Appendices Vb & c are examples of two students whose IMC were collated in the study.

(iii) A cross addition of the CT x W values is then computed to obtain a matrix score of each student. As a rule of thumb, only students who obtained a matrix score of 33 + (i.e. an average score of the matrix categorisation of being 'outstanding' from eleven data sources); were deemed to be more gifted or identified as eligible in terms of gifted abilities.

With eleven sources of data collection and collations, it can be seen that the multiple criteria approach involving both cognitively and affectively based, as well as subjective and objective measures have been involved in determining (as a yardstick for selection) students who are more or less gifted in Nigeria. Researcher designed inventories and the rating scale, as well as the standardized tests employed all proved to be elements of the kinds of myriad of instruments which can be used for identifying Nigerian gifted children and youths.

GENERAL PROBLEMS FROM THE SCREENING EXERCISE:

The entire screening exercise was not completed without problems in terms of hitches and complaints, given the rigorous procedure involved.

As much as the OSNI exercise can be regarded as successful, not as much nominees as thought of were generated from teachers and students. In most cases, nominators left blank, spaces for second and third nominations and only single candidates were nominated in almost all school situations and types of giftedness described on OSNI.

Many student nominees complained of the adequacy time allowed during the administration of the standardized instruments. That some of such tests were also administered on same days made the exercise all

the more tedious for some of the nominees. This probably explains the experimental mortality rate of up to 25 per cent of the original sample nominated for the study. In a few cases, students who missed out from one or two tests and who could be contacted directly had the tests administered to them. This was necessary since only those whose data were complete could have their abilities and ratings analysed.

The rating exercises by teachers, parents and peers of nominated students were also described as tedious. Many raters complained of the time they had to sacrifice, and for which some even demanded monetary compensation. The rating exercise actually took the most time in all phases of the screening procedure. The research assistants encountered the most problems during the rating exercise. Problems ranged from having to answer many questions from raters (particularly from parents), to having to interprete SROTCY to some illiterate parents. In the end, there were lesser number of parent raters than teachers or students in the exercise.

Although the nine research assistants engaged in data collection were adequately paid, they still demanded for more money at the end of the screening exercise. Not all such demands could be met.

There were also obvious problems of scoring a motley of instruments administered to the sample involved in the study, Particularly tedious in scoring was the ATCT which only the researcher could score. The GEPSE and Test G which had multiple type response formats were scored with the aid of some assistants and cross-checked by the researcher.

These limitations arising from the screening exercise not withstanding, the procedure was regarded as successful in the sense that adequate and valid enough data had been collected and collated for analysis of abilities and ratings of characteristics of gifted Nigerian children and youths.

SUMMARY:

The methodology utilised in this study from all intents and purposes can be described as a multiple criteria approach towards screening and identifying children and youths considered eligible for gifted education in Nigeria. As demanded in the use of an MCA, cognitively and affectively based psychological instruments as well

as a self referring information criteria were included in the screening procedure.

The researcher designed nomination inventory (OSNI) and the rating scale (SROTCY) were adequately validated; establishing a good measure of validity and reliability estimates. The validity and reliability of the standardized instruments (GEPSE and Test G) were also cross-checked. Thus, all instruments used during all stage of the screening ensured a valid and reliable data collection.

Data collection and matrixing, given their tedious nature, no doubt, added to the time factor within which analysis could be completed. In all, the entire data collection from five zones was completed between five to six weeks while data collection and matrixing lasted another two weeks.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

PREAMBLE:

Eight main hypotheses were tested for statistical significance among a variety of identification variables like the effectiveness, efficiency, efficacy and other set multiple criteria of matrix data collated in this study. Each of the eight hypotheses are restated along with a summary of statistical analysis and the respective results, given the specific findings. In the main, findings indicate that the use of a multiple criteria approach for identifying gifted children in Nigeria can be found to be very effecacious. Findings also are a pointer to the relative efficacy of the use of ratings for the identification of gifted children and youths of secondary school age in Nigeria.

HYPOTHESIS ONE:

There will be no significant difference in the overall matrixed scores obtained by children who attain, and those who do not obtain the set multiple criteria for being eligible as gifted.

For the purpose of testing hypothesis one, students whose overall matrix values were collated at 33 and above were isolated from those who obtained 32 and below. The matrix values of all students were then subjected to a t test (of unrelated sample) statistics. Table XIII is a summary of means, standard deviations and obtained t value of the two groups.

Table XIII: t Comparison of Matrix Values of Students Who Obtain the Set Multiple Criteria and those Who do not Obtain it.

Groups on Set Criteria	N	$\bar{X}$ Mean	SD	t	Critical value
More Eligible as Gifted	234	39.85	6.81	* 30.84	1.645 ** 1.960 ***
Less Eligible as Gifted	157	18.53	5.74		

* Null hypothesis rejected

** P < .10

*** P < .05

Given results summarised in table XIII, it was apparent that the null hypothesis stands rejected; implying that significant differences exist in the matrix values obtained by students who attain the set multiple criteria of no less than 33 and those who did not. Since 33 was used as the assumed cut off multiple criteria matrix value necessary to be labeled in the group presumed to be more eligible as gifted children and youths, it can be concluded that given the MCA, students can easily be identified for placement in gifted education programmes. This is more so given the significant difference confirmed between the two groups in terms of their mean values, and irrespective of their staandard deviations.

The findings from hypothesis one confirm assertions by Martinson (1974), Baldwin (1978), and Kitano & Kirby (1986) that the multiple criteria approach can be used for identifying the more and less gifted children and youths. The desire by the NPCEGTC (1986) for what it calls a 'modified' multiple criteria approach to be put into use for selecting children and youths for gifted education programmes is also firmly supported by this empirical finding

HYPOTHESIS TWO:

> There will be no significant difference between the matrixed scores of students currently served in provisions for the gifted, those found eligible as gifted directly from the multiple criteria screening, and those screened to be ineligible as gifted children

To test the second hypothesis, data generated in terms of matrixed scores of 391 students were analyzed using the one way analysis of variance procedure to determine whether any significant differences exist between values obtained by students selected from the Suleja Academy (i.e. already identified), those nominated from other schools who meet the criteria for eligibility (as set out in this study) and students whose matrix scores did not meet the set criteria. Table XIV is a summary of one way analysis of variance of differences between the three groups.

Table XIV: Means, SD and ANOVA Among Identified, Eligible and the Less Gifted.

Groups	N	X Mean	SD	F	Critical Value
Identified Gifted	40	48.33	6.74		
Eligible Gifted	194	36.22	6.81	16.30*	1.00**
Less Gifted	157	18.53	5.74		

* Null hypothesis rejected

** P < .10 and .05

Table XIV shows that a significant difference exists in terms of matrix values obtained by the three groups of students. Those who were identified through GEPSE and admitted into the special school for gifted children; those screened by multiple criteria and now found to be eligible for gifted education; and those confirmed from the screening to be less eligible for gifted education. Indeed, Turkey A Posteriori test confirmed that the third group (i.e. those screened to be less eligible) was the source of significant difference observed in the mean and standard deviations, given the F value.

Since the mean difference between the matrix values of gifted students at the Suleja Academy and those also found to be eligible by present screening is not statistically significant, it becomes evident that the multiple criteria apprach is capable of differentiating between the more gifted and less gifted children. As confirmed by Kitano & Kirby (1986), multiple measures no doubt can prove effective meachanisms for identifying many types of giftedness in children. They further confirmed that the set criteria approach can also prove capable of isolating the more gifted students from the less gifted, irrespective of their socio-economic and even cultural backgrounds.

HYPOTHESIS THREE:

There will be no significant correlations between teacher, parent and peer ratings, with students' overall matrixed scores:

(a) No significant correlation between teacher ratings and students' matrixed scores;

(b) No significant correlation between parent ratings and students' matrixed scores;

(c) No significant correlation between peer ratings and students' matrixed scores.

Data analysis to determine levels of relationship between teacher, parent and peer ratings with matrixed scores of students was based on the product-moment coefficience of correlation (r). Table XV is a summary of coefficient values of correlations obtained from statistical analysis of the data collated.

Table XV: Summary of Levels of Correlation Between Teacher, Parent and Peer Ratings and Students Matrixed Scores.

Correlation	Teacher Ratings	Parent Ratings	Peer Ratings	Critical values
Students' Matrixed Scores	.78*	.56**	.88***	.242**** .267*****

* Null hypothesis rejected

** Null hypothesis rejected

*** Null hypothesis rejected

**** $P < .10$

***** $P < .50$

Table XV indicates that ratings carried out by teachers, parents and peers about outstanding traits of giftedness correlated at significant levels with matrix values attained by students so rated. The table also shows that peer ratings were the most highly correlated, followed by teacher and parent ratings in that order. The indication, therefore, is that peers and teachers of students probably recognise the more gifted children and youths in their schools than do their parents.

Although not much research literature exists regards peer ability for identifying gifted children and youths, they are strongly thought of to be highly ptentially useful for identifying gifted students (Correll 1978). The present finding is a pointer to such a line of thinking. Renzulli et al (1976) demonstrated that with rating scales, teachers can reliably identify potentially gifted children in their classes. This probably also attests to the high level of correlation observed between teacher ratings and rated students matrix values. Obani (1986) did prove that Nigerian teachers, without doubts, can be found quite reliable in recognising qualities of giftedness. Kitano & Kirby (1986) also felt in strong terms that outside kindergaten identification, parents serve better as referral sources. The lower level of parent correlation values (commpared to teacher and peer values) tends to support such views expressed by Kitano & Kirby.

HYPOTHESIS FOUR:

> No screening instruments will be significantly effective enough for determining the proportion of outstanding students considered eligible as gifted by their matrix data.

Analysis in respect of hypothesis four was in the form of statistical descriptions of per centages and ratios. Thus, the eleven measures used for data collection had their effectiveness for screening in the multiple criteria approach determined by per centage and ratio calculations. Table XVI provides a vivid picture of how effective each instrument on the multiple criteria matrix had being, in terms of isolating the target population (i.e. the more gifted).

Table XVI: Effectiveness of Multiple Measures For Identifying the Gifted.

Measures	Total No. Screened	Total Identified	Total No Eligible	Total * missed out by matrixed score	App. Ratio	% Effectiveness	Significance
Test G	391	153	238	81	2:3	65.38%	**
SPM	391	137	254	97	1:2	58.55%	**
GEPSE:E	391	92	299	142	1:3	39.32%	**
GEPSE:M	391	79	312	155	1:4	33.76%	**
ATCT	391	122	269	112	1:2	52.14%	**
CAAS	391	117	274	117	1:2	50%	**
OSNI:T	391	109	282	125	1:2	46.58%	**
OSNI: P	391	119	272	115	1:2	50.85%	**
SROTCY:Ts	391	128	263	106	1:2	54.70%	**
SROTCY:Pts	391	112	279	122	1:3	47.86%	**
SROTCY:Prs	391	148	243	86	2:3	63.25%	**

*Out of the 391 students screened, matrixed scores indicated that 234 were eligible as gifted children.

**Given the 84th% ile cut off used in data matrixing to determine outstanding students eligible as gifted, sample population proportions of 83.00% and above were considered not effective enough (i.e. a given instrument may have screened students who are average or below average as eligible gifted.

Given summary of effectiveness of screening instruments tabulated in table XVI, all of them can be arranged in order of magnitude with regards to how reliable they could be for identifying gifted children and youths in the multiple criteria approach. The list from most reliable to least reliable given their per centage effectiveness will be as follows: Test G; SROTCY: Prs; SPM, SROTCY:Ts; ATCT; OSNI:Ps; CAAS: SROTCY:Pts; OSNI:Ts; GEPSE:E; and GEPSE:M.

Out of eleven measures, the researcher designed instruments were among the best four. In other words, the rating scale administered to peers and teachers compared favourably with standardized psychological tests like Test G and the Standard Progressive Matrices. This further confirms the assertion by Martinson (1974), Borland (1978) and Gear (1978) that rating scales can be found very reliable for selecting gifted children, especially when raters are adequately trained. It would also be observed from table XVI that the best four instruments had ratio effectiveness at between 1:2 to 2:3. Compared to the GEPSE:E and M as well as OSNI: Ts, (standardized and researcher designed respectively), it becomes pertnent to note that a motley of instruments when administered to children and youths in a multiple criteria approach stand the best chance of an inclusive identification. This is so, considering that the GEPSE series in particular are the main basis for current screening programmes in Nigeria. Yet, these instruments along with the researcher designed OSNI: Ts were the least effective in the multiple criteria selection.

That the ATCT had a fair enough effectiveness (at 52.15% and ratio of 1:2) on the MCA further buttresses the assertion that tests of creativity can also be found reliable to reasonable extents in identifying gifted children and youths (Getzels & Jackson 1962, Nwazuoke & Abosi 1992).

It would also be noted from the table that SROTCY:Pts had one of the least levels of effectiveness on the MCA. Ofcourse, Renzulli et al (1971, 1976) cautioned in strong terms that rating scales should never be used in isolation of other screening devices to select children considered to be gifted.

HYPOTHESIS FIVE:

No screening criteria will be significantly efficient enough for determining the proportion of outstanding students considered eligible as gifted by their matrix data.

Data analysis for verifying hypothesis five was based on the premises that six criteria were used for determining the more or less gifted children. These approaches in the main were: Intelligence; Academic Achievement, Creativity; Teacher Judgements; Parent Judgements; and Peer Judgements. For the purpose of analysis, therefore, Test G and the SPM results constituted the critereon for intelligence in determining those students who are more or less gifted. Academic achievement was determined by data collated from GEPSE:E&M and the current academic achievement scores of students in their respective schools. Creativity as a critereon was determined from ATCT data. Teacher, parent and peer judgements were determined by the nominations and rating data. Table XVII is a summary of per centages, and ratios calculated for determining the efficiency of each criteria used for determining the more or less gifted children and youths.

Table XVII: Efficiency of Multiple Approaches for Identifying Gifted Children.

Criteria	Number Screened	Total No Identified	Total No Identified	Total* No Missed	App. Ratio	% Efficiency	Significance
Intelligence testing	391	153	238	81	2:3	39.13%	**
Academic Achievement	391	117	274	117	1:2	29.92%	**
Creativity Assessment	391	122	269	112	1:2	31.20%	**
Teacher Judgements	391	128	263	106	1:2	32.74%	**
Parent Judgements	391	112	279	122	1:3	28.64%	**
Peer Judgements	391	148	243	86	2:3	37.85%	**

* Out of 391 students screened, matrixed scores indicated that 234 were eligible as gifted.

** See table XVI: Criteria indicating 83,00% and above considered not efficient enough in isolating outstanding students whose materixed data indicate that they are eligible as gifted.

Given the summary of results on table XVII, it is again apparent that intelligence testing constitutes the criteria with the highest efficiency for determining the more or less gifted children. On the other hand, parent judgements constitute the criteria with the least level of efficiency for determining the more or less gifted children.

That intelligence testing has the highest level of efficiency for determining the more gifted only follows the long established traditional belief that tests of intelligence and intellectual abilities of gifted children are the most valid approach for identifying the gifted (Terman 1926, Terman & Oden 1947, and Gardner 1983). However, putting into consideration that peer judgements, teacher judgements and creativity assessment also prooved efficient for selection purposes at close enough levels (i.e. 37%, 32% and 31% respectively) to intelligence testing, there is a further confirmation that these other criteria can equally be valid for determining the more or less gifted children and youths (Richert et al 1982, and Richert 1986).

HYPOTHESIS SIX:

> No miltiple criteria screening index will be significantly loaded enough for dtermining the extents to which outstanding students are considered eligible or ineligible as gifted children.

The efficacy of components of the multiple criteria approach in this study was determined mainly by the ratio of effectiveness to efficiency of measures and criteria (respectively). In terms of the efficacy of the multiple criteria approach, each matrix component, therefore, had its factor loading statistically calculated. Table XVIII is a tabulation of factor loadings of all instruments used for data collection against all approaches contained within the matrix collation.

Table XVIII: Efficacy of MCA based on Effectiveness and Efficiency Factor Loading in the Matrix Collation.

	C R I T E R I A					
INSTRUMENTS	Intelligence Testing	Academic Achievement	Creativity Assessment	Teacher Judgements	Parent Judgements	Peer Judgements
Test G	.78	.69	.70	.72	.68	.77
SPM	.74	.65	.66	.68	.64	.73
GEPSE:E	.63	.53	.55	.56	.52	.61
GEPSE:M	.59	.50	.51	.53	.49	.58
ATCT	.70	.61	.62	.64	.61	.69
CAAS	.69	.61	.61	.63	.59	.68
OSNI:T	.67	.58	.59	.61	.57	.66
OSNI:P	.71	.60	.62	.63	.59	.68
SROTCY:T	.72	.63	.64	.65	.61	.71
SROTCY:Pts	.68	.31*	.61	.61	.57	.66
SROTCY:Prs	.78	.68	.69	.71	.66	.76

χ^4 = .292

Table XVIII virtually shows that in terms of effectiveness and efficiency, all aspects of the multiple criteria utilised were at significant levels. In otherwords, the efficacy (otherwise referred to as accuracy) of all instruments and criteria utilised for selection of children suposed to be eligible as gifted students was significant, considering that the matrix had efficacy loadings, ranging from .31 to .78 (as the lowest and highest loadings respectively).

Although Baldwin (1978) confirmed the high accuracy (in terms of efficacy) level of the matrix approach in identifying gifted children and youths, not many studies can be readily found in the literature about the accuracy of different identification or selection

procedures in gifted education programmes. Gear (1976) in one isolated instance concluded that teachers can be reletively poor in terms of their accuracy or efficacy in the task of selecting gifted children. Given the efficacy facter loadings of teacher judgements from inventories and rating scales in the matrix data collated, there is no indication that Nigerian teachers will be poor at such a task. Rather, as findings from this study indicate, parent judgements and ratings have the lowest efficacy index which is even insignificant in terms parental rating factors in contribution to academic achievement criteria for selecting gifted children and youths.

HYPOTHESIS SEVEN:

> Rater efficiency in rating each cognate characteristic of giftedness in outstanding students will not significantly correlate with overall ratings by teachers, parents and peers.

For the purpose of analysis, subtotals of ratings by teachers, parents and peers given items contributing to each cognate characteristic were derived and correlated with total ratings of each student. Table XIX provides a summary of correlation values between cognate characteristics subtotal ratings and the overall total ratings by teachers, parents and peers from SROTCY.

Table XIX: Alpha Internal Correlations between Subtotals of Cognate Characteristic Ratings and Total SROTCY Rating by Teachers, Parents and Peers

Subtotal Ratings of Characteristics	Teacher Ratings	Parent Ratings	Peer Ratings	Average correlations	Significance
Learning traits	.86	.61	.91	.79	.296* .242**
Motivational traits	.72	.68	.73	.71	
Creativity traits	.62	.54	.66	.61	
Leadership traits	.88	.61	.92	.80	
Communication (precision)-traits	.69	.65	.75	.69	
Communication (expressive) traits	.67	.64	.83	.71	
Planning traits	.68	.66	.78	.71	
Sociability traits	.73	.67	.91	.77	
Psychophysical traits	.64	.52	.82	.66	
Average Correlations	.72	.62	.81		

* $P < .05$

** $P < .10$

Table XIX shows that correlation values between subtotal ratings of cognate characteristics and total SROTCY ratings of students' outstanding traits are generally positive. In addition, all correlational values are at significant levels.

On a general note, there were observed average correlation values of .81, .72 and .62 for peer, teacher and parent ratings respectively. The inference that can be drawn is that even though there are generally significant incidences of correlations in the cognate characteristic ratings and total ratings by peers, teachers and parents, there are demonstrable differences in levels of reliability for rating children and youths for traits of giftedness. This observation confirms findings from analysis of hypothesis three (see table XV). Again Correll's (1978) assertion that peers and teachers, more than their parents can rate better the character-

istics of children for purposes of identifying the gifred ones is supported.

Given observed average correlation values of ratings by teachers, parents, and peers on each cognate characteristic, there is an indication that leadership and learning traits (with .80 and .79 average values respectively) are the most homogeneously rated. Creativity and psychophysical traits, on the other hand (with .61 and .66 average values respectively) appear to be the most heterogenously rated by teachers, parents and peers of gifted children and youths. These observations are not readily at par with Renzulli et al (1976) findings that learning, rather than leadership characteristics tend to have the higher levels of stability coefficience and interjudge reliability. Indeed, Renzulli et al's findings show that leadership, more than creativity characteristics are least reliably rated. The seemingly sharp difference between the two findings can easily be attributed to differing environmental settings and the fact that teachers were exclusively used in Renzulli et al study.

HYPOTHESIS EIGHT:

There will be no significant inter-rater correlations between teacher, parent and peer ratings of characteristics of giftedness in outstanding students:

(a) no significant correlation between teacher and parent ratings;

(b) no significant correlation between teacher and peer ratings;

(c) no significant correlation between parent and peer ratings.

Analysis with regards to hypothesis eight was done by correlating the ratings of students who meet the set multiple criteria on an inter-rater basis between teachers, parents, and peers. Table XX summarises the coefficient values of ratings by teachers, parents and peers of the more gifted students on an inter-rater basis.

Table XX: Product Moment Coefficient Values of Inter-rater Correlations between Teachers, Parents and Peers

N = 234

SROTCY RATINGS	Teacher ratings	Parent ratings	Peer ratings	Significance
Teacher ratings				
Parent ratings	.66			* .296 ** .242
Peer ratings	.84	.63		

* $p < .05$

** $p < .10$

Again, a generally positive correlation each of which are at significant levels can be observed from table XX. The highest level of correlation was between peer and teacher ratings (at. .84). This observation buttresses the trend in results from this study indicating that teachers and peers of children rate better the outstanding traits in students in the process of identifying the gifted. Correll (1978) and Richert et al (1982), indeed, observed that in screening for gifted children from school settings, teachers and peers of students can hardly be ignored for nomination purposes. And given that teachers and students were exclusively used for nomination purposes in this study, such a high level of inter-rater correlation between ratings carried out by both groups cannot be suprising.

Again, where analysis involves parent ratings, a lesser level of correlation is observed (as indicated in table XX). The lowest level of inter-rater correlation observed from data analysis was between parents and peers. Factors such as the narcissistic desire of parents coming into play while rating their own children and the tendency for peers to more objectively observe and rate all manners of outstanding traits in gifted children may account for the little difference between the two sets of ratings.

SUMMARY:

Eight hypotheses were posited and tested for observed significant trends. None of the eight null hypotheses were accepted at any levels of significance. While the bivariate and trivariate null hypotheses were all rejected outright (indicating significant differences between the variables), none of the multivariate hypotheses tested indicated any levels of insignificant relationships or loadings.

On the whole, therefore, the significant trends observed, given analysis of data obtained from the multiple screening device attested to the potential usefulness of utilising the multiple critera approach in Nigeria's gifted education programme.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, RECOMMENDATIONS AND CONCLUSIONS

PREAMBLE:

This concluding chapter lays out a summary of the study and the report on Development of a Nomination Inventory and Rating Scale in a Multiple Criteria Approach for Identifying Gifted Children in Nigeria. A blow by blow summary of the context of the first four chapters is provided along with a brief prelude to the last chapter. Findings from the research study are discussed within the realm of research questions earlier posited to be addressed. In light of findings and discussions, recommendations are put forward with specific regards to identification procedures, and on a general note about the development of gifted education in Nigeria. The chapter concludes with a recap of major aspects of the entire research report.

SUMMARY:

In chapter one, introduction and background to the study is the main focus. The concept of giftedness is briefly examined, accepting preliminarily that gifted persons are those who possess potential or manifest abilities for outstanding performance in a variety of areas valued by modern society; such areas including among others, general intellectual abilities, specific academic aptitudes, psychosocial talents and creative production. An insight is then previded with regards to the effectivenss and efficiency of ratings - two technical terms used to describe the reliability of identification inventories and scales, as well as criteria for selection of the more or less gifted children and youths.

Chapter one goes further to examine briefly the background and theoretical framework for this study, drawing on the historical experience of gifted education in Nigeria with its attendant problems. The need for the present study is predicated upon the essence of developing and validating rating scales within a multiple criteria approach for identifying the more gifted students in Nigeria - identification issues largely yawning for research data and literature. Problems posed for this study were then extrapolated, highlighting in the main the question of utilisability or otherwise of rating scales and inventories administered to teachers, parents and peers of Nigerian secondary school students against the background of other criteria like intellectual potential, creative

output and academic achievement which constitute other forms of objective measures for identifying gifted children.

The first chapter also presents the broad and specific aims of the present study. Both broad and specific aims of the study centre around establishing the efficacy of utilising the multiple criteria approach, and in particular, the accuracy levels of developed rating scales. Given such an aim, a number of research questions and hypotheses are posed in a style capable of aiding the verification of data supporting or isolating a number of variables examined in the study.

Chapter one rounds off by stressing the significance of the present study in terms of data generated and analysed, proving the potentiality of utilising measures and criteria, other than achievement tests for identifying gifted children in Nigeria. A number of limitations linked to the present study are highlighted, the most important of which is the inherent drawbacks associated with using nominations, rating scales and adapted measures for identification purposes.

In chapter two, considerable literature is reviewed about the concept of giftedness and talent, highlighting prevalent and relatively current views or positions about giftedness: Such issues include: The definitional controversy; citations of weak and strong definitions of giftedness; characteristics and psychological needs of a variety of gifted persons; relevant examples of outstanding contributions by re-owned gifted individuals (indigenous and foriegn to Nigeria); the state of the art of gifted education in Nigeria, stressing in the main the need for a variety of gifted education programmes in the country.

Other issues examined in the review of literature include: The question of emerging paradigms in gifted education and particularly as they relate to Nigeria; processes of identifying gifted children and their presumed applicability or otherwise to Nigeria; stages of identification procedures ranging from nominations, screening and assessments, to evaluations; selection criteria for determining the more or less gifted children; and strategies for selecting gifted children into appropriate programmes.

Chapter three lays bare the design and procedure used for data collection and collation. The chapter first describes what is implied by the Multiple Criteria Approach (MCA), and attempts its justification for use in the present study as well as gifted identification programmes or screening exercises in general. All instruments used in the present study as they constitute measures and multiple criteria are described. Such instruments ranging from the Test G, Standard Progressive Matrices, (SPM), Gifted Education Programme Screening Examination (GEPSE: E & M), to the Adapted Torrance Circle Test as the standardized psychological tests are described in details. Researcher designed and validated Outstanding Students Nomination Inventory (OSNI) and the Scale for Rating Outstanding Traits in Children and Youths are also described with analysis for their reliability and validity explained. Also described along with the multiple criteria instruments are the Current Academic Achievement Sheet (CAAS) used for collating school examination scores of students, and the Identification Matrix Card (IMC) used for collating the categorisation of individual students scores and ratings from the variety of instruments.

Chapter three goes on to explain the population and sample utilised for the study as well as the four phases in which data was collected from the five zones of Kano, Abuja, Calabar, Ibadan and Minna. In each phase, the screening exercises in terms of either nominations, ratings, administration of tests, or data collation are described. The procedure for scoring all instruments and matrixing all variety of data collected is then described. The chapter winds up with a listing of problems encountered in the process of data collection.

In chapter four, the eight hypotheses examined and verified in the study are restated one after the other. A summary of analysis of data for each hypothesis is presented, explaining the results and commenting on observed trends as supported or disputed in the relevant literature. In all, hypotheses tested indicated significant trends in terms of relationships of variables examined.

The foregoing summary, therefore, set the stage for discussion of findings obtained from this study based on which recommendations are made towards effective and efficient screening exerises and

identification of gifted children in Nigeria, as well as for further research in the related areas.

DISCUSSIONS:

The first research question (presented at the beginning of this study) was with regards to whether it will be more desirable to adapt or develop scales for rating behavioural characteristics of gifted Nigerian students. It is logically demonstrated in chapter three that, in spite of the availability of rating scales and inventories which can easily be adapted, it is better to develop and validate rating scales and inventories for the present study for teachnical reasons. In fact, data analysis in this study obviously point to the relative efficacy of the developed scales and inventories when compared to other instruments; demonstrating the validity and reliability of OSNI and SROTCY as powerful complementary devices for screening outstanding students for traits of giftedness.

Indeed, recommendations exist in the literature supporting the development and validation of rating scales and inventories as part of the approaches needed for screening for gifted children and youths in Nigeria (NPCEGTC 1986, Abang 1989, and Obanya 1989). Findings from this study lay credence to such assertions that rating scales and inventories can, indeed, be found useful for screening children for traits of giftedness in Nigeria. Tables XVI to XVIII, for instance demonstrate empirical evidence supporting the relative effectiveness, efficiency and efficacy of OSNI and SROTCY in a multiple criteria approach for determining the more and less gifted students. Tables XIX and XX also further demonstrate the reliability values of SROTCY based on internal and inter-rater correlations.

Of all rating scales and inventories available from the literature, SRBCSS appears to have been the most widely tried out, especially with teachers (Richert et al 1982). The Renzulli et al (1976) SRBCSS, indeed, has reliability and validity estimates which can be compared to SROTCY. The pilot study of SROTCY and its subsequent use for data collection in the present study indicates that it has construct and concurrent types of correlational validity and inter-rater as well as stability reliability for rating characteristics of outstanding students. The SRBCSS, on the other hand, demonstrate such validity and reliability indices through interjudge, stability and sociometric correlational values. The cultural and environmental differences

regarding the normative data of these scales obviously dictate the slight differences in types of reliability and validity for SRBCSS and SROTCY. Nevertheless, what is important is the demonstration of a significant level of reliability and validity by any instruments desired to be used for identifying gifted children and youths.

Also, the EIRC (1992) documentation of a variety of nomination inventories used in district programmes in the US serves as a pointer to the need to evolve our own inventories in Nigeria's gifted screening programmes. The production of OSNI for this study goes a long way to fill that gap. Furthermore, the desirability of developing an inventory (rather than adapt) has been demonstrated by the significant impact OSNI has made toward the rating exercises and subsequent multiple criteria utilised for determining the more and less gifted Nigerian students. Again summary of results on tables XVI to XVIII are pointers to the significant place of OSNI (as a researcher designed instrument) in an MCA framework for selecting more and less gifted children and youths.

One of the aims of this study in terms of developing and validating inventories and rating scales for use in Nigeria's gifted education programme seem to have been achieved. This is especially so, given that OSNI and SROTCY may have emerged for use in multiple criteria approaches adapted in Nigeria.

One noticeable trend in the efficacy of OSNI and SROTCY for selecting the more and less gifted students is what some may consider a high rate of proportion of students found eligible as the more gifted. This may be considered a serious issue, given that literature tends to assert that only about 1 - 5% of school populations are probably gifted (Correll 1978). As tables XVI to XVIII further indicate, up to 194 (apart from 40 already identified students from Suleja Adademy) were deemed eligible as gifted students from a sample of 351 outstanding students sampled in regular schools. Such a trend needs not be disturbing, considering that more variety of types of gifted children may have been nominated from the onset in preparations for the screening exercise. In otherwords, the sampling procedure was part of the screening exercise itself and not exclusive to it. Moreover, given that a multiple criteria appoach had been utilised for selection purposes, chances are that a considerable number of children with potential for

outstanding variety of abilities at gifted and talented levels may have been screened in, rather than screened out.

As Richert (undated) rightly observed, gifted screening programmes should seek to include more, rather than exclude considerable numbers of exceptional children. Ofcourse, when a multiple criteria approach has been used for selecting gifted students, chances are that the disadvantaged (for reasons of race, socio-economic or cultural backgrounds) gifted children will successfully get screened into the talent pool (Martinsion 1974, and Mercer & Lewis 1981). For this and other reasons, the number of children considered eligibly gifted in this study needs not be seen as alarming; not even as a dated study indicated some differences in the effectiveness and efficiency levels of multiple criteria used for selection purposes (Pegnato & Birch 1959). In that particular study, teacher judgements, achievement tests, honour rolls, creativity in art, and group intelligence tests yielded effective proportional values of 45%, 79%, 74%, 7%, and 22% respectively. The same analysis revealed that the similar criteria (as in this study) indicated efficiency proportion values of 27%, 21%, 18%, 9% and 56% respectively for selecting children with gifted potentials. Such differences in results may be attributable to specific types of instruments and procedure used as well as the number of citeria involved. One interesting trend generally, however, was that effectiveness indexes in the two sets of results (i.e. the present study as demonstrated in tables XVI & XVII and the Pegnato & Birch analysis) were generally higher than efficiency indicators in the multiple criteria approach.

This said, it can be confirmed from the present study that developed rating scales can be found efficacious for determining distinct outstanding characteristics of gifted children and youths of junior secondary school age in Nigeria. Hence, one of the aims by which this study was set out in terms of determining proportions of outstanding junior secondary school students who are gifted has been verified from the results hereto discussed.

Regards cognate characteristics of giftedness rated in children and youths, results generally are a pointer that outstanding convergent traits can obviously and precisely be rated by teachers, parents and peers. Table XIX shows that all the nine cognate

characteristics into which over 87 outstanding traits were converged in the rating exercise obtained significant internal correlation values. The table indicates that leadership, learning and sociability traits as cognate characteristics were most distinctly rated. Outstanding traits of motivation, planning and communication (expressive and precision) precisely rated high as well. And even though traits of creativity, and psychophysical characteristics rated lower, they were no doubt at significant levels to have been considered precisely rated.

As Adesokan (1989) pointed out, giftedness in its different dimensions should be considered more as cognate in nature. Clark C(1983) also believes that distinguishing a variety of dimensions of giftedness (i.e. creative, specific academic, psychosocial, artistic, psychomotor e.t.c.) may remain a mirage in developing appropriate special pregrammes for all types of gifted children. This may well explain why psychologists still engage in the far from settled controversy of types of giftedness and talent (Gardner 1983, for instance). Although data from this study is not analysed to put to rest such a controversy, results indicate that if cognate characteristics can be precisely rated, then a need is beginning to arise for broad ranged identifications which can pick out all gifted children of different dimensions; more so when a multiple criteria approach (as in this study) may have been the basis for screning

Given that evidence exists from this study indicating that stated cognate characteristics of giftedness can be precisely rated, researchers might want to know whether against direct measures, such characteristics can be precisely distinguished. For instance, it will be worthwhile knowing if tests of leadership or psychomotor skills directly administered to children and youths will be able to distinguish the more gifted ones from the average ones as done by the ratings. Or better still, one might wish to find out whether a battery of tests in different cognate characteristics will distinguish such abilities as precisely rated. Obviously, these are questions for further research, but indications from this study are that direct measures of creativity and intellectual ability may help in distingushing the respective cognate characteristics they measure, when administered to potentially gifted students.

Once more, the immediate discussion here has ended in the longstanding debate of levels of intellectual ability and creativity in the gifted population. As pointed out by Getzels & Jackson (1963) and Nwazuoke & Abosi (1992), gifted persons often exibit at least average levels of creativity and high levels of intelligence. Evidence supporting this findings may be inferred from this study as in table XVIII. The indication is that measures of potential for intellectual ability and creativity directly administered to outstanding students had the highest factor loadings compared to other direct measures like achievement tests in the MCA matrix. Unfortunately, the achievement tests administered in this study had the lowest matrix factor loadings in determining the more or less gifted students. This is just an indication that in selecting gifted students, achievement tests should not be the single or dominant criteria. And this is, in spite, of the fact that GEPSE's lower matrix factor loading may not be unconnected with the lowered cut off critereon for determining the more and less gifted in this study. It should be noted also that the lower level of GEPSE matrix factor loading (compared to Test G and SPM) is not synonimous to the prevalent view that tests of intelligence are good predictors of academic excellence. These two variables were not correlated in this study.

Going by the matrix approach used for data collation in this study, all measures and criteria utilised can be grouped into two; Cognitive and affective measures. While the cognitively based measures include the tests of intellectual potential (i.e. Test G and SPM), academic achievement (i.e. GEPSE: E & M) and school examination results collated, the affectively based measures include the nominaton inventory (i.e. OSNI) and the rating scale (i.e. SROTCY).

Table XVI specifically outlines the effective indices of both categories of instruments in terms of their ratio and per centage indexes. A cursory observation of all cognitively and affectively based measures indicate no difference of any significance in terms of which one may have been more effective in the selection procedure. On the average, both categories of measures appear to have ratios ranging from 1:3 to 1:2 (except only for GEPSE:M which is estimated at 1:4). On the other hand, the cognitively based measures appear to indicate a slightly lower level of per centage effectiveness than the

affective measures. Ofcourse, GEPSE:M (which is cognitively based) has the lowest level of effectiveness.

These observations not withstanding, it still appears safer to conclude that since the levels of effectiveness attained by all insturments were significant, and since the effectiveness indices themselves were based on matrix data collation (hence ensuring complementary inputs into the multiple criteria used), both cognitively and affectively based measures are equally effective in determining the more or less gifted children and youths in Nigeria. Thus, the findings and conclusion reached lend support to the general caution that neither intelligence or achievement tests alone, nor even rating scales or inventories should be used in isolation for identifying gifted children (Martinson 1974, Renzulli et al 1976, Richert 1986 and Bireley & Genshaft 1991). Martinson (1974) indeed demonstrated that a variety of cognitively and affectively based measures (both of objective and subjective dimensions) can only be considered either as important or essential (and no less) as minimum criteria for identifying gifted and talented children.

In terms of efficiency of cognitively and affectively based approaches for identifying gifted children and youths, the same conclusions can be drawn with what has been said regarding the effectiveness of the two categories of instruments. Table XVII is a pointer that while intelligence, creativity, and academic achievement (i.e. cognitively based criteria) had an average ratio of 1:2 and average efficiency level of 33.41%, the affectively based criteria (i.e. teacher, parent and peer judgements) had estimated average ratio values also of 1:2 and average efficiency level of 33.07%. Obviously then, the two categories into which the six criteria listed in table XVII can be grouped are equally efficient in the identification of gifted children.

The results from this study, indicating that the sets of measures and criteria used are effective and efficient for indentifying gifted children, tends to further support the assertion that there is, indeed, no single most important criteria or instruments for identifying the gifted (Richert et al 1982, and Kitano & Kirby 1986).

This study did not actually analyse categorical variables like age, sex, qualifications and experience of ratees and raters in order to determine what salient factors directly contribute to the effective or efficient levels at which ratings were carried out. One thing was sure; the inventory and rating scale administered were validated and had their reliability values established. In addition, the fact that their further use for data collection and analysis (after the pilot study) proved all the more how reliable and efficient the rating scales could be, is also a pointer that other extraneous factors which may have influenced ratings can be considered to be of less significance.

In developing SRBCSS, little or no attention was paid to independent variables (i.e. sex, age, experience etc) that could constitute extraneous factors influencing ratings. In line with this, the present study has also not gone into such details regarded as another resesearch dimension of its own.

A cursory look at table XX shows that inter-rater correlation between teachers parents and peers were at significant levels. Despite the observed lower correlation values where parental ratings are involved, the conclusion that can be drawn is that there is a general level of concordance among raters about the characteristics of gifted children and youths. Relatively lower levels of correlation where parental ratings are involved may on the part of parents not be unconnected with what Rimm (1991) sees as special problems and special joys of parenting gifted youths.

Results summarised in tables XIII and XIV provide ample evidence for a general conclusion to be made about the relative efficacy of the MCA model in identifying gifted children in Nigeria. Table XIII, for instance, shows that out of a total of 391 outstanding students screened, 234 of them (which includes the 40 students from the Academy) were found eligible in terms of giftedness. A lower portion of the population (i.e. 157) were considered by the matrix data to be less gifted. Even though a considerable number were so identified as more gifted on the basis of matrix scores set at just the outstanding categorisation, table XIII further shows that a significant difference exists in the matrix scores obtained by the two groups.

The obvious conclusion from the above is that, with out doubts, the use of a minimum criteria for differentiating the eligible from the less eligible categories of outstanding students can be justified. Probably for high excellence programmes (Like that of Suleja Academy) a higher matrix score cut-off (i.e. equivalents of the very outstanding or even exceptionally outstanding levels) may be used. In which case, a lower incidence of eligible students may be observed. The point, however, still remains whether it is defensible to overemphasize higher cut-off criteria scores as in high excellence programmes. The obvious answer is that since programmes, rather than provisions are now more acceptable in gifted education, high excellence programmes needing higher matrix scores should be de-emphasasized. This will obviously be the better case for poineer gifted education programmes like that of Nigeria.

As Martinson (1974) pointed out, not all gifted individuals must indeed attain prolific outputs; adding that for most of them (i.e. the typically gifted), their abilities should be judged more by the fact that they are above what obtains in the average population. And that is why matrix scores considered average and below were regarded as not capable of identifying the more gifted children.

In any case, even with placements in high excellence provisions like the Suleja Academy, data from this study indicates that students selected using matrix scores at 'outstanding' levels can compare favourably with students selected at higher points. Analysis summarised in table XIV are a pointer to the fact that while students of Suleja Academy may have achieved higher matrix scores, their difference with the eligible category (about 194 of them) cannot be significant. It is rather the matrix scores obtained by the less gifted that constitute a significance in the three groups.

All the foregoing are a general confirmation that the multiple criteria approach as used here is capable of distinguishing between gifted students who can cope with provisions or high excellence programmes; those who can cope with generalized gifted education programmes and those who are obviously less gifed for any special programmes or provisions. One fact which cannot be ignored is that the MCA can identify many more 'more' gifted children even in narrow screening programmes as currently obtains. And above

all, those many more gifted who can be identified through MCA can be defensible, given the criteria used. As Martinson (1974) observed, even in states with the most highly developed gifted programmes in the U.S., not up to half the number of children expected on the programmes are identified. No doubt, MCA is not only desirable in Nigeria, but further experimentation with it in selection exercises will proof its efficacy.

CONCLUSIONS:

According to Abraham (1958), in which ever way a gifted child is defined, some authority to support ones' definition can be found. Conclusions from this study do not indicate that giftedness or the gifted child can be defined in a most agreable way. What is clear is that the gifted child may not necessarily be the mysterious or genius stereotype which some people may have in notion. Neither is the gifted child just anybody of high achievement in any field of human endeavour. As operationally defined in chapter one, giftedness is a psychological state of constellation of outstanding abilities which could be cognitively, behaviourally, socio-psychologically and even psychomotor based. The gifted child in this context, therefore, is one whose potential or manifest abilities are remarkable or outstanding in a variety of academic and non-academic endeavours, to the extent that such a child becomes noticeable for his or her positive astituteness or negative peculiarities.

This study has provided a paradigm for Nigeria's gifted education programme. A Multiple Criteria Approach was tried out inclusive of nominations and rating scales; a dispensation which demonstrated a significant level of efficacy for identifying the more gifted or less gifted children in Nigeria. However, as Richert (1985) opined, whichever approach is used for identifying gifted children and youths must be defensible, advocating, equitable, plural, pragmatic and comprehensive. Data analysis, results and discussion generated from this research indicated that rating and nomination exercises, and in particular the use of a multiple criteria approach in Nigeria can meet these principles set out by Richert.

The use of a pilot study to validate the researcher designed instruments and the official recommendation for the use of multiple criteria approach makes the use of the research based identification model defensible. Given the broad nature of nominations into talent pools as a prelude to cut-off screenings, advocacy, equity and pluralism were ensured in the model used in this research. Also, given the broad talent pool generated in the MCA model (and as utilised in this research) pragmatism was ensured in terms of screening for as many gifted leaners as possible. By the diverse number of measures and criteria utilised in the MCA model, some comprehensiveness was

ensured. By and large, therefore, the six principles recommended by Richert for ensuring a good identification approach were met to large extents.

In all, nine cognate characteristics collapsing into a varitey of traits of giftedness formed the basis of rating exercises in the MCA model utilised in this study. The effectiveness and efficiency of the researcher designed inventory and scale were demonstrated through the main findings of the present study. Findings also revealed the efficacy of utilising an MCA model for identifying gifted children in Nigeria. Such a model into which nominations and rating exercises are implanted along with other cognitively based measures are strongly recommended for identifying gifted children and youths in Nigeria. Without doubts, from outstanding Nigerian students, cognate characteristics and abilities of giftedness can be identifiable through nominations, ratings and a multiple criteria approach.

RECOMMENDATIONS FOR THE IDENTIFICATION OF GIFTED CHILDREN IN NIGERIA:

Putting into consideration the findings from this study and following conclusions reached from the discussion of those findings, a number of recommendations can be made for the identification of gifted children and the prospects of gifted education in Nigeria. This is more so given that gifted education in this country is not only new but faces a dilemma of lack of political commitment from Government within which to blossom with little or no hinderances. And above all, there is a general feeling of skepticism from members of the public about the essence of gifted education when the state of regular education itself is appalling. The following recommendations are, therefore, germane towards the development of gifted education in Nigeria.

1. Nominations, especially by teachers and students should be made an essential part of identification schemes. As seen in the present study, nominations can be used not only as the beginning of screening exercises, but also to create a talent pool of potentially gifted students. Such a pool will then form the target population at the local government level. In other words, the target population of top five per cent at local government level as recommended in the Blue Print will need reviewing.

2. Rating scales like SROTCY should be used to corroborate nominations and to serve as a bridge-head for further screening exercises. Once the rating exercises are also restricted to the local government levels, rating scales along with nomination inventories will provide the needed data about students, indicating their cognate characteristics - making it further possible to determine the kinds of tests or further inventories which will serve the purpose of identifying different types of talents and giftedness. In which case, the danger of overconcentration of screening for intellectually gifted children alone can be overcome.

3. Intelligence tests, rather than achievement tests should form one of the main basis of identification even in the present dispensation which is overdominated by GEPSE data. As this study reveals, tests of global intelligence and of intellectual potentiality have a greater impact in determining the more or less gifted in multiple criteria screening exercises. Individual and group intelligence tests, therefore, need to be developed and validated against Nigerian norms for the purpose of more efficient screening.

4. The practice of reviewing all achievement tests every year, needs to be continued. Even with other developed tests or scales, series of their alternate forms need to be provided in order to prevent violations when they become available after screening. Indeed, the present situation where screening instruments are found with unauthorized sources need to be checked and further spread of the tests checked.

5. Like tests of global intelligence, those of creativity are also urgently needed in future screening programmes. Ofcourse, the selection of creativity tests for use must be done with caution regarding their usability in Nigerian context. The Torrance Circle Test can serve such a purpose, but further evidence will be needed regarding its adoption in Nigeria.

6. If an expanded multiple criteria approach is desirable in the future, consideration should be given to the use, on an equal basis of both subjective and objective measures and criteria in identification programmes. In otherwords, subjective measures like self ratings and objective measures like group intelligence tests should be used complementarily. Ofcourse, it has already been cautioned that nomination inventories and rating scales like the ones used in this study should not be used as a single criteria for determining the more or less gifted.

7. As the Blue Print recommends, the process of continuous adaptation, adoption, and development of instruments for identification purposes should be a rule, rather than the exception. The present collaboration between the Academy and the National Board for Educational

Measurement (NBEM) is, indeed, too limited for this prescribed function. NBEM should either have a unit directly charged with research responsibilities geared specifically at enhancing screening and identification schemes, or the speical Education Unit of the Federal Ministry of Education should monitor this task.

8. As evident from the present study, the MCA can be found very usable for identification schemes in Nigeria. However, the use of MCA must be followed with flexible gifted education programmes into which screened children who satisfy given criteria can make entries or withdrawals. In short, if the MCA is to be utilised at all, gifted education in Nigeria must expand beyond provisions at Suleja Academy and its high excellence orientation. More broad based programmes in which a variety of gifted children can operate need to be developed. The abandoned centres of excellence approach, the use of magnet schools and summer programmes should be considered as the frameworks within which the MCA will operate efficiently.

RECOMMENDATIONS FOR FURTHER RESEARCH:

Considering the limitations of the present study as highlighted in chapter one, and in view of certain unverified aspects of the accompanying results, it is desirable to make the following recommendations for further research:

1. OSNI as presently constituted may need further approaches to enhance its' usability in the simplest forms. Future research can be undertaken inclusive of re-orginising OSNI. Caution must, however, be exercised about its broadness for allowing enough nominations to cover all kinds of giftedness.

2. Alternate forms of SROTCY need to be developed to enhance its usability over a period of time.

3. Self rating measures like the Ibadan Creativity Assessment Scale can be developed and validated for use in the MCA framework. Such scales will serve to further corroborate ratings of cognate characteristics of giftedness derivable from rating scales like SROTCY and also serve the purpose of further nominations for the creation of a talent pool.

4. Independent variables like sex, socio-economic background, types of schools attended and the influence of significant others can be examined in a future research involving the use of rating scales, nomination inventories or even the entire MCA dispensation.

5. The efficacy of utilising the MCA at Kindergaten, primary and even senior secondary levels can be researched into.

Appendix 1 a

OUTSTANDING STUDENTS NOMINATION INVENTORY - PEERS (OSNI - P)

Introduction

This inventory aims at identifying students who are clearly outstanding in activities they engage in. In all school activities carried out in the classroom, during lessons, in the dormitories, clubs and societies and in peer groups, outsanding students often distinguish themselves positively or negatively. In other words, outstanding students by the way they engage in most activities along with their peers often evidence strong abilities or a fondness for doing things in seemingly peculiar ways. Your cooperation is, therefore, being sought to nominate such outstanding students in your class, study group, subject group, social group, dormitory and the school as a whole.

Your name: _____ (not compulsory).

Please indicate with a tick (✓) the capacity or capacities in which you are nominating students with this Inventory:

As classmate of the outsanding student/s: ( )

As students offering the same subject/s: ( )

State which subjects/s: _____

_____

_____

As members of the same club/ society: ( )

Name the club/ society: _____

As a member of the same study group: ( )

As members of the same dormitory/house: ( )

House: _____

As members of the same peer group or friendship circle: ( )

Instruction

In the attached Nomination Form (NF:P) spaces have been provided for you to nominate as many outstanding students as possible. Three most outstanding students are expected to be nominated by you in your class, best subject group, study group, club/society, peer group or friendship circle, dormitory, and in the whole of JSS I or III of your school. Kindly nominate your classmates based on your judgement of how outstanding they are in terms of general intellectual ability, specific academic skills, creative or productive abilities, leadership qualities, artistic, dramatic or musical traits, psychomotor abilities and social qualities.

The nominations should be ordered from a higher to lower consideration (i.e. nomiation No 1 has higher consideration than Nos 2 and 3 in that order Feel free to nominate as many students as possible, but it is not compulsory that students must be nominated in all circumstances. A student may also be nominated as many times as possible and in any position as long as you consider him/her outstanding in several situations listed.

Now proceed to nominate students on the N.F.P. All information given will be treated as very strictly confidential.

NOMINATION FORM FOR PEERS (N.F:P)

Write in the spaces provided, the full names of outsanding students in school settings and ability areas described:

Ability areas	Most Outstanding Students in: Your class	Your study group	Your club or society	Your peer group or friendship circle	Your Dormitory	The entire JSS I and II
General intellectual ability	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Specific academic aptitude	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Creative or productive thinking abili ty	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Artistic ability e.g. painting and drawing	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Musical ability	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____

Dramatic Talent	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Leadership capability	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Social competence	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____
Performance in sport	1._____	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____	3._____

Thanking you for the co'operation

Signed _____

Date _____

Appendix 1 b

OUTSTANDING STUDENTS NOMINATION INVENTORY - TEACHERS (O S N I - T)

Introduction

This inventory aims at identifying students who are clearly outstanding in activities they engage in. Such outstanding students may or may not be easily noticeable from characteristics they manifest in school. In a class, subject group, the dormitory or even the whole school, outstanding students who may easily pass as superior children or youths can be identified. This inventory is a first step towards identifying such students. Your co'operation is, therefore, being sought to nominate outstanding students in your class, subject group, dormitory, and school.

Your name _____

(not compulsory)

Please indicate the capacity or capacities in which you are nominating students by using this inventory:

Tick (✓) as appropriate:

Classmaster/mistress ( )

Subject teacher ( )

Which subject? _____

Housemaster/mistress ( )

Which dormitory? _____

Club/society patron ( )

Which club/society? _____

Guidance counsellor ( )

Name any other capacities _____

_____

Instruction

In the attached Nomination Form (NF:T), spaces are provided onto which you are expected to nominate, by writing names of students in JSS 1 or 2 whom you consider outstanding, such that they may be regarded as gifted. Nominate as many students as possible based on school situations like classroom performance, specific subject ability, performance in clubs and societies, peer group activities, in the dormitory and JSS I & II as a whole. In each school situation, nominate three students in ability areas like general intellectual capability, specific academic aptitude, creative ability, leadership and social competence, abilities in artistic, musical and dramatic skills, and psychomotor abilities. The nominations should be in order - of the most considered to the less considered of the three in each group (i.e. first to third names in that order). It is not compulsory that all spaces must have students nominated, but as many names as possible should be considered. Any particular student may be nominated as many times as possible as long as in your reasoning, such a student is outstanding in several respects given in the NF.

Now proceed to nominate students on the NF:T.
All information provided will be treated as strictly confidential.

NOMINATION FORM FOR TEACHERS (NF - T)

Write in the spaces provided, the full names of outstanding students in school settings and ability areas described:

Ability areas	Most Outstanding Students in:				
	The entire class	Specific subject area	Clubs and societies	Dormitory	In JSS I and II
Ceneral intellectual Ability	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Specific academic aptitude	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Creative thinking ability	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Artistic abilities (e.g. painting, drawing, designing e.t.c.	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Musical ability	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____

Dramatic skills	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Leadership qualities	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Social competence	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____
Performance in sports	1._____	1._____	1._____	1._____	1._____
	2._____	2._____	2._____	2._____	2._____
	3._____	3._____	3._____	3._____	3._____

Thanking you for the co'operation

Signed _____

Date _____

Appendix I c

OUTSTANDING STUDENTS NOMINATION INVENTORY

(OSNI)

Nomination Frequency Form (NFF)

OSNI:- NFF

Frequency count by _____
(name)

Full address of school from which nominations were obtained:

_____

State: _____

Dates nominations were completed:

_____

_____

_____

S/N	Name of nominees	Frequency of nominations: Tick (✓) as often as nominated								Total	Gifted Rating Eligibility (indicate*)
Total											

Signed _____

Date _____

Appendix 1 d

NOMINATION FORM FOR TEACHERS (NF - T)

Write in the spaces provided, the full names of outstanding students in school settings and ability areas described:

Ability Areas	Most Outstanding Students in: The entire class	Specific subject area	Clubs and societies	Dormitory	In JSS I and II
General intellectual ability	1. Garba Mohammed	1.	1.	1.	1. Garba Mohammed
	2. Musa Kura	2.	2.	2.	2.
	3.	3.	3.	3.	3.
Specific academic aptitude	1.	1. Hauwa Ringim	1.	1.	1. Musa Kura
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
Creative thinking ability	1.	1.	1. Mohammed Musa	1.	1. Mohammed Musa
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
Artistic abilities (e.g. painting drawing, designing e.t.c)	1. Garba Mohammed	1.	1.	1.	1.
	2.	2.	2. Abdulmuminin Gwarzo	2.	2.
	3.	3.	3.	3.	3.
Musical ability	1.	1.	1. Dantala Musa	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.

Dramatic skills	1.	1. Garba Mohammed	1. Musa Kura	1.	1. Hauwa Ringim
	2.	2.	2.	2. Dantala Musa	2.
	3.	3.	3.	3.	3.
Leadership qualities	1. Garba Mohammed	1.	1.	1.	1.
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.
Social competence	1. Garba Mohammed	1.	1.	1.	1.
	2.	2.	2. Abdulmuminin Gwarzo	2.	2.
	3.	3.	3.	3.	3.
Performance in sports	1.	1. Muhammed Musa	1.	1.	1. Musa Kura
	2.	2.	2.	2.	2.
	3.	3.	3.	3.	3.

Thanking you for the co'operation

Signed (Signed)

Date 30/3/93

Appendix 1 e

OUTSTANDING STUDENTS NOMINATION INVENTORY

(OSNI)

Nomination Frequency Form (NFF)

OSNI - NFF

Frequency count by Mallam Isah Audu
(name)

Full address of school from which nominations were obtained:

Federal Government Girls College, Bida

State: Niger

Dates nominations were completed:

4/4/93

6/4/93

S/N	Name of Nominees	Frequency of nomination: Tick (✓) as often as nominated	Total	Gifted Rating Eligibility (indicate*)
1.	Blessing Nwadioha	✓✓✓✓✓	5	
2.	Amina Isah	✓✓	2	
3.	Hauwa Ibrahim	✓✓✓✓✓✓✓✓✓✓	10	*
4.	Irene Black	✓✓✓	3	
5.	Yemisi Adeyemi	✓✓✓✓✓✓✓✓✓✓✓✓	12	*
6.	Laraba Majin	✓✓✓✓✓✓	6	
7.	Ikani Bala	✓✓✓✓	4	
8.	Bukky James	✓✓	2	
9.	Agnes Iroha	✓✓✓✓✓✓✓✓✓	9	*
Total	9			3

Signed (Signed)

Date 6/4/93

Appendix II

STUDENTS BIODATA INVENTORY

(S B I)

Dear student,

You have been selected into a pool of students from whom it is intended to put together some vital information for the purpose of research. Kindly respond (in writing) to the questions in this inventory truthfully and accurately. No information provided will be used in any way against you as all of them will be kept completely confidential.

Your full name _____
(first name) (Midle name) (surname)

Other names _____

Sex _____

Date of birth: _____

Age at last birthday _____

Present class _____

Name of dormitory
(if a day student, specify): _____

Full postal address of
your present school _____

_____

_____

Full postal home adress: _____

_____

_____

List your three best subjects: (i) _____

(ii) _____

(iii) _____

Who are your closest
friends? (give their
full names and addresses) (i) _____

_____

(ii) _____

_____

_____

(iii) _____

_____

Which are the best clubs/
societies to which you belong? (i) _____

(ii) _____

Your hobbies or interests: (i) _____

(ii) _____

(iii) _____

Who is responsible for your
upbringing?
(tick one) (i) Own parents ( ) (ii) Gaurdians ( )

Names and postal addresses
of two of your parents or (i) _____
gaurdinans:

_____

_____

(i) _____

_____

_____

Thank you for the co'operation. You will be contacted for
further information.

Appendix III a

SCALE FOR RATING OUTSTANDING

TRAITS IN CHILDREN AND YOUTHS

S R O T C Y

Introduction

This scale is designed to help teachers, parents and peers of particular students or pupils consider and indicate the extent to which in their opinions, such students would be regarded as outstanding in terms of a number of their personality attributes. Outstanding students in the context of this scale refers to those whose abilities or capacities in a number of tasks they may be faced with is so unique that they are noticed for what they are or what they can do.

You are requested to objectively rate a particular student whose name is indicated herewith on a number of characteristics listed. Your responses will be treated as confidential, especially from the student or pupil rated.

(i) Your name _____
(not compulsory)

(ii) Full postal or contact address _____

_____

_____

_____

(iii) Name of student/pupil to be rated

_____

/ _____ /
(in capitals)

(iv) Please indicate by ticking (✓) against the length of period for which you have known this student:

Not known to me at all	( )	For less than a year	( )
For between 1-3 years	( )	For between 4-5 years	( )
For over 5 years	( )	All his life	( )

v) In what capacity are you rating this student: (Tick only one as appropriate)

As his or her -

Teacher	( )	Father	( )
Mother	( )	Guardian	( )
School mate	( )	Classmate	( )
Peer group mate	( )	Personal Friend	( )

Directions

Please proceed to rate the student based on your belief and general observation of his/her ability or capacity for being outstanding, given the characteristics so listed. For each characteristic or trait, a number of spaces are provided for you to indicate by ticking (✓) the extent to which you regard the student as either "Extremely Outstand" (E.O); or Not Outstanding (N O.). The nearer a student is rated towards either ends of the response scale marked E.O. and N.O., the more your opinion is considered to be exact or closer to describing the students ability or capacity to be Extremely Outstanding or Not Outstanding. Please feel free and be objective enough in rating the student concerned towards either ends of the response scale.

Example

	Extremely Outstanding (E.O)	Not Outstanding (N.O.)
(i) Risk taking behaviour:	-- ✓ -- -- -- -- -- -- -- --	
(ii) Cheerfulness	-- -- -- -- -- -- -- -- ✓ --	

In example (1), the rating is presumed to be much more nearer to describing the student as Extremely Outstanding in terms of risk taking attitudes. In example (ii), the rating is adjudged to be much closer to describing the student as Not Outstanding in terms the trait of cheerfulness.

Now proceed to rate /_____/

very precisely on as many characteristics as listed. It is not compulsory that you must rate the student on all characteristics listed since you may not know him or her in all aspects. Please do not rate the students twice on any particular trait.

The scale is not timed for you to complete. It is, however, desired that you respond to all the items at once with the guidance of the facilitator who went through the introduction and instructions with you. Remember that all ratings are strictly your own opinion and so other peoples' views (including that of the person you are rating) should be of no value to you.

SCALE FOR RATING OUTSTANDING TRAITS IN

CHILDREN AND YOUTHS

S.R O T C.Y

		Extremely Outstanding (E.O)										Not Outstanding (N.O.)
1.	Understanding the meaning of things or situations experienced		—	—	—	—	—	—	—	—	—	
2.	Versatility (i.e. a tireless attitude toward achieving tasks involved in)		—	—	—	—	—	—	—	—	—	
3.	Curiosity (i.e. the urge to want to discover things quickly)		—	—	—	—	—	—	—	—	—	
4.	Perseverance (i.e. strong will in the face of difficulties)		—	—	—	—	—	—	—	—	—	
5.	Tendency for explanations in a sequential and orderly manner		—	—	—	—	—	—	—	—	—	
6.	Vocality (i.e. sound expression of feelings)		—	—	—	—	—	—	—	—	—	
7.	Capacity for planning tasks		—	—	—	—	—	—	—	—	—	
8.	Tendency for understanding reasons advanced for change in plans		—	—	—	—	—	—	—	—	—	
9.	Alertness in physical activities generally		—	—	—	—	—	—	—	—	—	

		Extremely Outstanding (E O.)										Not Outstanding (N O.)
10.	Fast and accurrate response to questions		—	—	—	—	—	—	—	—	—	
11.	Capacity for independence in resolving problems		—	—	—	—	—	—	—	—	—	
12.	Capacity for producing ideas which are original (i.e. thinking or doing things in completely new ways)		—	—	—	—	—	—	—	—	—	
13.	Zeal for pursuing every task to a logical conclusion		—	—	—	—	—	—	—	—	—	
14.	Selectiveness in expressing feelings and ideas		—	—	—	—	—	—	—	—	—	
15.	Ability for utilisation of body language i.e. effectiveness in conveying information to others through gestures and facial expressions		—	—	—	—	—	—	—	—	—	
16.	Organisational ability		—	—	—	—	—	—	—	—	—	
17.	Optimism toward new adventures		—	—	—	—	—	—	—	—	—	
18.	Active involvement in physical activities		—	—	—	—	—	—	—	—	—	

		Extremely Outstanding (E O)										Not Outstanding (N.O.)
19.	"Mr. Know all" attitude		—	—	—	—	—	—	—	—	—	
20.	Ingenuity (i.e. tendency for knowing or being able to find out when, where and how to seek for help in problem situations)		—	—	—	—	—	—	—	—	—	
21.	Alertness to possibilities (i.e. being very aware of what could happen next)		—	—	—	—	—	—	—	—	—	
22.	The will power to always succeed		—	—	—	—	—	—	—	—	—	
23.	Ability to be fluent in explanations		—	—	—	—	—	—	—	—	—	
24.	Insistent attitude for including strange ideas in group discussions		—	—	—	—	—	—	—	—	—	
25.	Ability for carrying out plans to the letter		—	—	—	—	—	—	—	—	—	
26.	Respect for self (i.e. knowledge of limitations and abilites of self)		—	—	—	—	—	—	—	—	—	
27.	Energetic approaches to physical activities		—	—	—	—	—	—	—	—	—	

	Extremely Oustanding (E.O.)										Not Outstanding (N.O.)
28. Critical questioning attitude	—	—	—	—	—	—	—	—	—	—	
29. Fondness for asking why things happen or occur	—	—	—	—	—	—	—	—	—	—	
30. Experimental tendency (i.e. fondness for wanting to find out how things will work out)	—	—	—	—	—	—	—	—	—	—	
31. Thrill and challenge in the face of new ideas	—	—	—	—	—	—	—	—	—	—	
32. Capability for explanations in precise and clear manner	—	—	—	—	—	—	—	—	—	—	
33. Penchent for story telling	—	—	—	—	—	—	—	—	—	—	
34. Sense of judgement	—	—	—	—	—	—	—	—	—	—	
35. Permanance of mood	—	—	—	—	—	—	—	—	—	—	
36. Proneness to nervoussness in physical activity competitions	—	—	—	—	—	—	—	—	—	—	

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
37. Capacity for transferring what is learnt to new knowledge situations	—	—	—	—	—	—	—	—	—	—
38. Tendency for easily becoming jealous of excellent performance in school activities by agemate or classmates	—	—	—	—	—	—	—	—	—	—
39. Fondness for using trial and error approaches in assigned tasks	—	—	—	—	—	—	—	—	—	—
40. Fondness for reinterpreting rules to cover up for disobedient acts	—	—	—	—	—	—	—	—	—	—
41. Capability for using words meaningfully and with a sense of glamour 'i.e. with pride and interestingly)	—	—	—	—	—	—	—	—	—	—
42. Penchant for constructing verbal sentences interestingly and with appropriate descriptive usage	—	—	—	—	—	—	—	—	—	—
43. Capacity for recognizing alternative approaches for achieving set tasks	—	—	—	—	—	—	—	—	—	—
44. Friendliness	—	—	—	—	—	—	—	—	—	—
45. Healthiness	—	—	—	—	—	—	—	—	—	—

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
46. Tendency for generalizing about Personal thoughts or opinions	—	—	—	—	—	—	—	—	—	—
47. Self criticism (i.e. tendency for showing signs of disaffection with personal performance)	—	—	—	—	—	—	—	—	—	—
48. Capacity for wonderful imaginations	—	—	—	—	—	—	—	—	—	—
49. Oratorical skills (i.e. ability to utilize verbal skills to convince others)	—	—	—	—	—	—	—	—	—	—
50. Frequency for use of idioms or proverbs in explanations	—	—	—	—	—	—	—	—	—	—
51. Fondness for talking in a difficult way to understand	—	—	—	—	—	—	—	—	—	—
52. Tendency for putting priorities right (i.e. doing first things first)	—	—	—	—	—	—	—	—	—	—
53. Tendency for helping others	—	—	—	—	—	—	—	—	—	—
54. Enthusiasm for participation in physical activities or games	—	—	—	—	—	—	—	—	—	—

		Extremely Outstanding (E.O.)										Not Outstanding (N.O.)
55.	Ability for sensing the relationship between cause and effect in learning experiences		—	—	—	—	—	—	—	—	—	
56.	Penchant for keen interest in adult-concerned issues like religion, sex and politics		—	—	—	—	—	—	—	—	—	
57.	Fondness for seemingly devilish thoughts		—	—	—	—	—	—	—	—	—	
58.	Willingness to allow others the use of personal possessions		—	—	—	—	—	—	—	—	—	
5 .	Sarcasm (i.e. tendency for being a noise maker especially about matters that appear trivial)		—	—	—	—	—	—	—	—	—	
60.	Fondness for starting arguments		—	—	—	—	—	—	—	—	—	
61.	Tendency for taking into consideration perceived limitations or obstacles when working towards set group objectives		—	—	—	—	—	—	—	—	—	
62.	Cooperative attitude		—	—	—	—	—	—	—	—	—	

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
63. Ability for recognising relationships between two or more facts of knowledge	—	—	—	—	—	—	—	—	—	—
64. Self assertiveness (i.e. attempts to portray personal beliefs in a strong way)	—	—	—	—	—	—	—	—	—	—
65. Risk taking attitudes	—	—	—	—	—	—	—	—	—	—
66. Constructive contribution to group discussions or activities	—	—	—	—	—	—	—	—	—	—
67. Sharp expressions about wrong ideas or wrong use of words	—	—	—	—	—	—	—	—	—	—
68. Consciousness of time factor in executing set tasks	—	—	—	—	—	—	—	—	—	—
69. Popularity amongst peers	—	—	—	—	—	—	—	—	—	—

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
70. Capacity for understanding and applying rules and regulations where they exist as guides	—	—	—	—	—	—	—	—	—	—
71. Concern for opposite issues e.g. right/wrong, good/bad; ethical/ unethical	—	—	—	—	—	—	—	—	—	—
72. Sense of humour (i.e. ability for creating fun to make people happy)	—	—	—	—	—	—	—	—	—	—
73. Continued positive growth in attitudes and behaviour	—	—	—	—	—	—	—	—	—	—
74. Concern for wrong happenings	—	—	—	—	—	—	—	—	—	—
75. Capacity for grasping or comprehending details required to meet the procedure of set plans	—	—	—	—	—	—	—	—	—	—
76. Popularity with elders	—	—	—	—	—	—	—	—	—	—

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
77. Ability for foreseeing new possibilities in problematic learning situations										
78. Sensitivity to beauty (i.e. being alert to beautiful things or situations)										
79. Conscientiousness and truthfullness										
80. Tendency for infuriating agemates (i,e. fondness for making them annoyed often)										

	Extremely Outstanding (E.O.)									Not Outstanding (N.O.)
81. Fondness for reading books presumed to be above his/her academic level	—	—	—	—	—	—	—	—	—	—
82. Fondness for influencing others with new ideas or thoughts	—	—	—	—	—	—	—	—	—	—
83. Fondness for resorting to non-conforming acts	—	—	—	—	—	—	—	—	—	—
84. Penchant for infuriating elders through behaviour and utterances	—	—	—	—	—	—	—	—	—	—
85. Tendency for attraction to complicated materials or issues	—	—	—	—	—	—	—	—	—	—
86. Urge to discuss seemingly strange dreams	—	—	—	—	—	—	—	—	—	—
87. Concern for personal appearance in public functions	—	—	—	—	—	—	—	—	—	—

Thank you for sparing your time

Please do not write below this line

— — — — — — — — — —

Total /_____

Rating /_____/

Appendix IIIb

SCALE FOR RATING OUTSTANDING TRAITS IN CHILDREN AND YOUTHS (S R O T C Y)

Rating Values

Items	Value Points									
1.	9	8	7	6	5	4	3	2	1	0
2.	9	8	7	6	5	4	3	2	1	0
3.	9	8	7	6	5	4	3	2	1	0
4.	9	8	7	6	5	4	3	2	1	0
5.	9	8	7	6	5	4	3	2	1	0
6.	5	4	3	2	1	1	2	3	4	5
7.	9	8	7	6	5	4	3	2	1	0
8.	5	4	3	2	1	1	2	3	4	5
9.	9	8	7	6	5	4	3	2	1	0
10.	9	8	7	6	5	4	3	2	1	0
11.	9	8	7	6	5	4	3	2	1	0
12.	9	8	7	6	5	4	3	2	1	0
13.	9	8	7	6	5	4	3	2	1	0
14.	5	4	3	2	1	1	2	3	4	5
15.	9	8	7	6	5	4	3	2	1	0
16.	9	8	7	6	5	4	3	2	1	0
17.	9	8	7	6	5	4	3	2	1	0
18.	9	8	7	6	5	4	3	2	1	0
19.	5	4	3	2	1	1	2	3	4	5
20.	9	8	7	6	5	4	3	2	1	0
21.	9	8	7	6	5	4	3	2	1	0
22.	9	8	7	6	5	4	3	2	1	0
23.	9	8	7	6	5	4	3	2	1	0
24.	4	4	3	3	2	2	1	1	0	0
25.	9	8	7	6	5	4	3	2	1	0
26.	9	8	7	6	5	4	3	2	1	0
27.	4	4	3	3	2	2	1	1	0	0
28.	9	8	7	6	5	4	3	2	1	0
29.	9	8	7	6	5	4	3	2	1	0
30.	9	8	7	6	5	4	3	2	1	0
31.	9	8	7	6	5	4	3	2	1	0

32.	9	8	7	6	5	4	3	2	1	0
33.	4	4	3	3	2	2	1	1	0	0
34.	9	8	7	6	5	4	3	2	1	0
35.	4	4	3	3	2	2	1	1	0	0
36.	5	4	3	2	1	1	2	3	4	5
37.	9	8	7	6	5	4	3	2	1	0
38.	4	4	3	3	2	2	1	1	0	0
39.	5	4	3	2	1	1	2	3	4	5
40.	5	4	3	2	1	1	2	3	4	5
41.	9	8	7	6	5	4	3	2	1	0
42.	9	8	7	6	5	4	3	2	1	0
43.	9	8	7	6	5	4	3	2	1	0
44.	4	4	3	3	2	2	1	1	0	0
45.	4	4	3	3	2	2	1	1	0	0
46.	0	1	2	3	4	4	3	2	1	0
47.	9	8	7	6	5	4	3	2	1	0
48.	9	8	7	6	5	4	3	2	1	0
49.	9	8	7	6	5	4	3	2	1	0
50.	9	8	7	6	5	4	3	2	1	0
51.	4	4	3	3	2	2	1	1	0	0
52.	9	8	7	6	5	4	3	2	1	0
53.	9	8	7	6	5	4	3	2	1	0
54.	9	8	7	6	5	4	3	2	1	0
55.	9	8	7	6	5	4	3	2	1	0
56.	9	8	7	6	5	4	3	2	1	0
57.	5	4	3	2	1	1	2	3	4	5
58.	4	4	3	3	2	2	1	1	0	0
59.	4	4	3	3	2	2	1	1	0	0
60.	4	4	3	3	2	2	1	1	0	0
61.	9	8	7	6	5	4	3	2	1	0
62.	5	4	3	2	1	1	2	3	4	5
63.	9	8	7	6	5	4	3	2	1	0
64.	4	4	3	3	2	2	1	1	0	0
65.	4	4	3	3	2	2	1	1	0	0
66.	9	8	7	6	5	4	3	2	1	0
67.	4	4	3	3	2	2	1	1	0	0
68.	4	4	3	3	2	2	1	1	0	0
69.	9	8	7	6	5	4	3	2	1	0
70.	4	4	3	3	2	2	1	1	0	0

71.	9	8	7	6	5	4	3	2	1	0
72.	9	8	7	6	5	4	3	2	1	0
73.	9	8	7	6	5	4	3	2	1	0
74.	9	8	7	6	5	4	3	2	1	0
75.	9	8	7	6	5	4	3	2	1	0
76.	9	8	7	6	5	4	3	2	1	0
77.	9	8	7	6	5	4	3	2	1	0
78.	9	8	7	6	5	4	3	2	1	0
79.	9	8	7	6	5	4	3	2	1	0
80.	5	4	3	2	1	1	2	3	4	5
81.	9	8	7	6	5	4	3	2	1	0
82.	9	8	7	6	5	4	3	2	1	0
83.	4	4	3	3	2	2	1	1	0	0
84.	4	4	3	3	2	2	1	1	0	0
85.	9	8	7	6	5	4	3	2	1	0
86.	4	4	3	3	2	2	1	1	0	0
87.	4	4	3	3	2	2	1	1	0	0

Highest possible rating value = 634

Appendix IIIc

Stanine Coversion of Rating Values on Cognate Characteristics Rated from SROTCY.

Cognate Characteristics	Stanine value: 9	8	7	6	5	4	3	2	1
Learning	76-85	67-75	57-66	48-56	39-47	29-38	19-28	10-18	0-9
Motivation	64-71	56-63	48-55	40-47	34-39	26-33	17-23	9-16	0-8
Creativity	94-99	85-93	73-84	62-72	50-61	38-49	26-34	14-25	0-13
Leadership	76-85	67-75	57-66	48-56	39-47	29-38	19-28	10-18	0-9
Communication (p)	49-54	43-48	37-42	31-36	25-30	19-24	13-18	7-12	0-6
Communication (E)	39-43	34-38	30-33	26-29	21-25	15-20	10-14	5-9	0-4
Planning	70-76	62-69	54-61	44-53	34-43	27-36	18-26	10-17	0-9
Sociability	70-76	62-69	54-61	44-53	37-43	27-36	18-26	10-17	0-9
Psychophysical	30-35	26-29	23-25	19-22	16-18	11-15	8-10	4-7	0-3

Stanine Conversion of Total Rating Values on SROTCY

Rating Value Range	Stanine Value
0 - 30	1
31 - 100	2
101 - 156	3
157 - 221	4
222 - 272	5
273 - 316	6
317 - 373	7
374 - 413	8
414 - 634	9

Appendix IV a

ADAPTED TORRANCE CIRCLE TEST

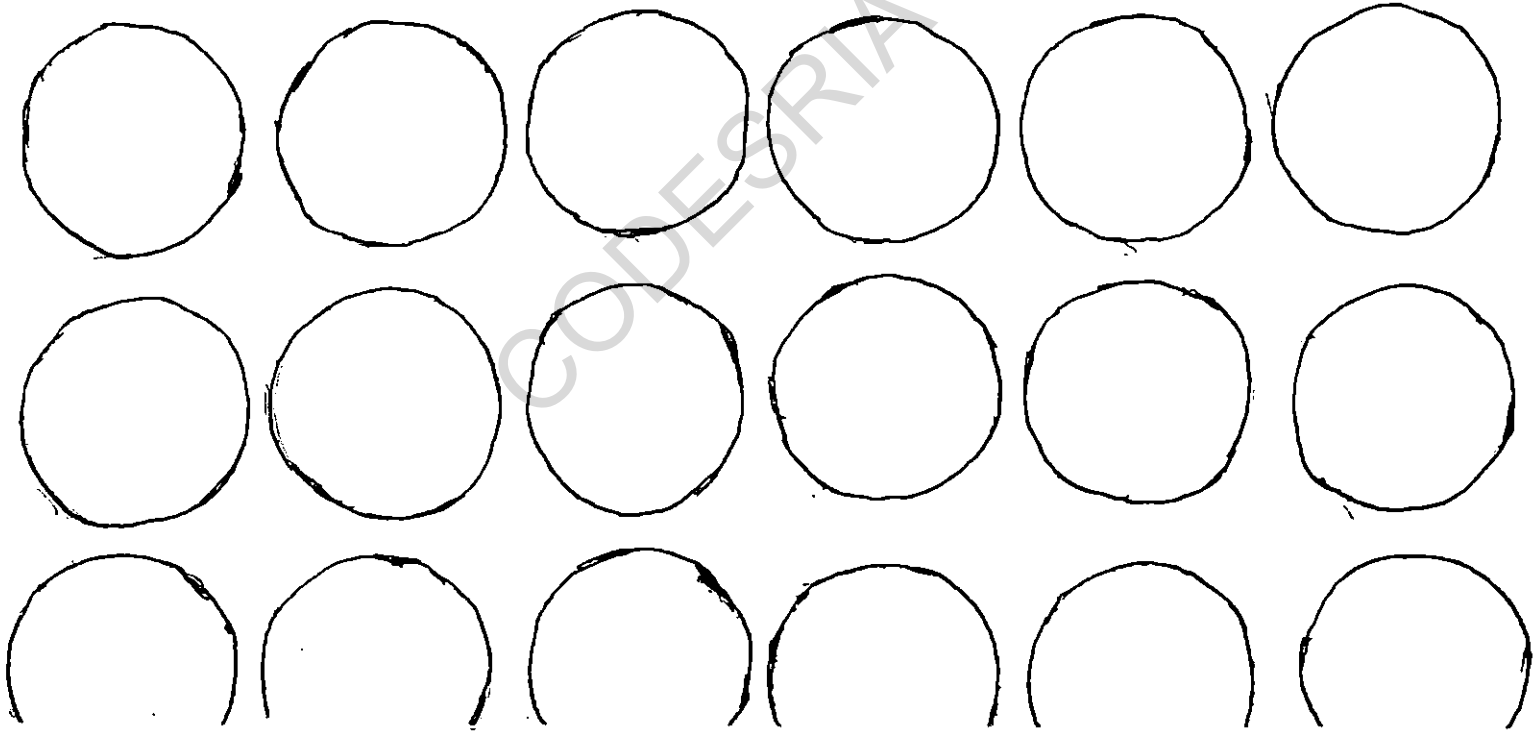
((ATCT)

Name _____ 8chool _____

State _____ Age _____ Sex _____

Instruction:

Use the circle lines below to draw and paint pictures of different things you know about. Make your drawings using the circle lines inside, outside or by joining them. Think of drawing things which many people in the class may not be thinking of drawing also. Draw as many different things as possible which you think truly exists but may not have been seen by many people. Name everything you draw or paint below the circles.



Appendix VI b

SCORING GUIDE FOR TORRANCE CIRCLE TEST

FLUENCY: The score for fluency is determined simply by counting the number of responses that the subject made; i.e., the number of objects drawn. Do not count the number of circles used as soon as objects may have required two or more circles.

ORIGINALITY: The score for originality is made by counting all of the responses with the exception of these;

Baloons (only toy ballons)
Balls
Buttons
Donuts
Earth, Moon, or Sun (excluding models, globes, etc,)
Fruits
Human faces (excluding definitely expressive or fantasy faces)
Pans (excluding pans with some contents such as fried eggs)
Tyres
Wheels
The two examples of glasses and jack-o-lanterns

In the case that an original category of response (bicycles, tables, number, hats, etc.) is repeated with little or no modification, all repeated responses are not scored. An example would be the use of circles in constructing the letters, "p", "q", and "b"; the category of response, letters, is repeated--thus, only the first response "p", would be regarded as original. However, if there is a shift in script style, or a change to capitalization, then all the responses are scored.

ELABORATION: The score for elaboration is determined by giving a point for each extra line added to the picture that means a new and significant detail. Thus, and apple might be elaborated to include a stem, leaves, a rotten spot, a worm coming out of the apple, a pitted shape, or mixed colouration. One point would be added for each of these. An illustration of how several lines might count only one point would be that of a clock. You would give one point each for the hour hand, the minute hand, the pin which these hands would be attached to, all of the numbers, a stand, an alarm bell at the top, and a handle, for a total of seven points, even though the number of lines and extra figures would number possibly 20 or more. A point should be added for each new idea or significant detail but not for repeatition of the detail needed to complete it, such as the numbers of the hours. The marks for the minutes and seconds, however, would count as one new idea or an extra point beyond the hour figures.

Again, consider for scoring only the significant features of the object response and not significant details of those features. For example, if a coin is drawn, points are given for the personage's image, date, mint symbol, etc. However, features of the facial image are not to be considered.

FLEXIBILITY: Give one point for each category referred to by a response (if a category appears twice or more - still count one point for it). If a response fits two categories give points for each such category.

1. Animals
2. Animal faces
3. Animal parts
4. Buildings
5. Building parts

26. Human faces
27. Human faces - fantasy
28. Human faces - parts
29. Jewelry
30. Kitchen utensils

6. Candy
7. Clocks and watches
8. Coins
9. Containers
10. Cooking untensils
11. Covers of any kind
12. Decorations
13. Designs
14. Devices - Audio Visual
15. Dial instruments
16. Flowers
17. Fruits
18. Furniture
19. Games - parts of
20. Heavenly bodies - artificials
21. Heavenly bodies - natural
22. Household items
23. Humans
24. Humans-fantasy
25. Humans - parts
31. Letters
32. Mechanical equipment
33. Musical instruments
34. Nails, nuts, bolts, etc.
35. Numbers
36. Optical instruments
37. Pastry
38. Plants - other than flowers and trees
39. School supplies
40. Signs
41. Sports equipment
42. Symbols
43. Tableware
44. Tools
45. Toys
46. Transportation - means of
47. Transportation - means of (parts)
48. Trees, parts of trees
49. Vegetables
50. Weapons

Appendix V a

IDENTIFICATION MATIX CARD

(IMC)

Student's Name: _____

School: _____

State of origin: _____ Local Government Area: _____

Age: _____ Class _____

Sex: _____

Data Source	Score Categorisation: Extremely outstanding	Very outstanding	Just outstanding	Average	Below Average
Standard progressive Matrices (S.P.M)					
GEPSE: E (Gifted Education programme screening Examination)					
GEPSE: M					
Adapted Torrance Circle Test (ATCT)					
Current mean class achievement score					
OSNI: T					
OSNI: P					
SROTCY: Ts					
SROTCY: Pts					
SROTCY: Prs					
Column Tally (CT.) of data sources checked					
(Multiplied by .....) Weight (W)	x5	x4	x3	x2	x1
CT. X.W					

Signed _____

Name of signitory _____

Date _____

Appendix V b

INDENTIFICATION MATRIX CARD

(COLLATED I.M.C.):

Student's name: Abdul-Ganiyu Fola-Bello

School: Olivet Baptist High School, Oyo

State of origin: Osun Local Government Area: OSHOGBO

Age: 14 Class JSS 2 A

Sex: M

Score Categorisation

Data Source	Extremely outstanding	Very outstanding	Just outstanding	average	Below Average
Test G	42				
Standard Progressive Matrices (SPM)		B			
GEPSE: E (Gifted Education programma screening Exaination)		33			
GESPSE: M			25		
Adapted Torrance Circle Test (ATCT)				51st%ile	
Current Mean Class Achieve ment score	Stanine 9				
OSNI: T	13				
OSNI: P	15				
SROTOY Ts		Stanine 8			
SROTCY: Pts	Stanine 9				
SROTGY: Prs			Staine 7		
Column Tally (C.T.) of data sources checked	x5	3	2	1	-
(Multiplied by ....) Weight (W)	x5	x4	x3	x2	x1
CTXW	25	12	6	2	0
Addition (CA)	45				

Signed (Signed)

Name of signitory Mrs Dupe Aina

Date 18/5/93

Appendix V c

IDETIFICATION MATRIX CARD

(COLLATED IMC) ii

Student's name: Halima Isah

School: Government Day Secondary School, Minna

State of origin: Niger Local Government Area: Minna

Age: 13 Class JSS 1 C

Sex: F

Data Sources	Score Categorisation: Extremely outstanding	Very outstanding	Just outstanding	average	Below Average
Test G				16	
Standard progressive Matrices (SPM)					E
GEPSE: E (Gifted Education programme screening Exaination)				13	
GEPSE: M					8
Adapted Turrance Circle Test			62nd % ile		
Current Mean Class achiement score			Stanine 7		
OSNI: T.			8		
OSNI: P		12			
SROTCY: Ts				Stanine 6	
SROTCY: PTs			Stanine 7		
SROTCY: Prs			Stanine 7		
Column Tally (C.T) of data sources checked	0	1	5	3	2
(Multiplied by .....) Weight (W)	x5	x4	x3	x2	x1
C.T X.W	0	4	15	6	2
Cross Addition (CA)	28				

Signed (Signed)

Name of signifory Jibrin Abdullahi

Date 19/5/93

Appendix VI a

CURRENT ACADEMIC ACHIEVEMENT SHEET

(CAAS)

Name of School _____

Screening Zone _____

Name of Data Collator _____

Date of Data Collation _____

S/N	Names of Nominee students	CORE SUBJECTS				Extra Subject of interest			
		English	Math	S/Studie	Integrated Science	Subjecte of Interest (I)	Subject of Interest (II)	Mean Achievement	Stanine

Signed _____

Date _____

Appendix VI b

CURRENT ACADEMIC ACHIEVEMENT SHEET

CAAS (Example)

Name of School: Community Secondary School Ikot-Abasi

Screening Zone: Calabar

Name of Data Collator: Mr. Ntukidem Edem-Edem

Date of Data Collation: 29/4/93

S/N	Names of Nominee students	CORE SUBJECT				Extra Subject of Interest			
		English	Math	S/Studie	Intergated Science	Subject of Interest (I)	Subject of Interest (II)	Mean Achievement Score	Stanine
1.	Ekpe-Ekpe Ndiyo	88	76	92	82	–	–	84.5	9
2.	Ekaete Ndem	50	49	77	60	69	69	52.83	7
3.	Akanimo Joseph	55	61	83	56	73	60	64.66	8
4.	Boniface Ekong	74	70	80	93	75	–	78.4	9
5.	Ariet Christian	71	70	63	80	72	72	71.33	9
6.	Achibong Paul	48	53	56	63	60	–	56	7
7.	Paul Uko	80	70	65	80	–	–	73.75	9

Signed (Signed)

Date 30/4/93

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