

# Teacher Nomination of Gifted and Talented Children: A Study of Basic and Senior High Schools in the Central Region of Ghana

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## Abstract

This study sought to establish the level of relationship between teachers' nomination of gifted and talented children and their demographic variables; (gender, age, qualification, teaching experience and type of school). Four hundred teachers made up of 215 males and 185 females were selected from the Senior High and the Basic schools from the Central Region of Ghana through a multistage simple random sampling method. An Adapted and simplified version with a Chronbach reliability coefficient of .86 for the Scale for Rating Behavioral Characteristics of Superior Students (SRBCSS) was the instrument used for data collection. Multiple Regression analysis was utilized to analyze the research questions. The results revealed that the teachers' demographic variables such as gender, age, type of school, qualification and teaching experience were not good predictors of their nomination skills. It is recommended that teachers learn more about the characteristics of the gifted and talented through in-service education to enable them develop skills in recognizing these children.

**Key words:** gifted, talented, children, nomination, basic schools, senior high schools

## 1. Introduction

Educational arguments in support of identifying and providing special programming for the gifted and talented children continue to dominate special education debates. The debates are centered on the fact that gifted children represent a unique group of students, members of an objectively definable population that can and must be 'found' and labeled in order for their needs to be met (Sapon Shevin, 1996). Stainbach (1981) argues that a good programme for everyone else, by definition, could not be good for the gifted therefore, gifted children require qualitatively different kinds of educational experiences from those provided to average or typical students in the classroom. Indeed, the identification and education of the gifted and the talented has become crucial because their contributions to national development cannot be ignored.

Gifted and talented children are regarded as a minority group (Stenberg, 1996), and young gifted and talented children can be disadvantaged as other minority groups in the school system. Although gifted and talented children are less well investigated and defined compared to other regular children, it is widely agreed that early recognition and intervention of gifted and talented children is crucial (Pfeiffer & Petscher, 2008; Rotigel, 2003). Early identification and the provision of educational services are important to help young gifted and talented children during their primary school years (Worthman, 2008). Thus, teachers need to recognize the characteristics of young gifted children and recognize these children to provide them with optimal intervention and educational opportunities.

Traditionally, intelligence was associated with gifted and talentedness. However, with increased researches that have inundated special education literature the meaning of intelligence has changed dramatically. With this still emerging definition of intelligence and giftedness, identification of gifted children therefore is not a simple one. Nor, however, is it dispensable given that many of these children need appropriate educational response to ensure that they can cope with and succeed in education.

## 2. Conceptual Framework

Gifted and talented children can be defined as children 'who give evidence of high performance capabilities in areas such as intellectual, creative, artistic, leadership capacity, or specific fields and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities' (Clark, 1996 p. 57). This definition gives rise to a variety of ways in which intellectual abilities can be expressed. A critical look at this definition implies that children who are gifted and talented can be identified by observation and the use of other evaluative means. This is because gifted and talented children can exhibit different behavioral characteristics which express the power of their intellectual abilities.

Clark (1992) and Gardner (1983) were of the view that an acceptance of possible expression of intelligence is important for appropriate identification of gifted and talented individuals. Clark (1996) believed that the universe of intelligence must include at least four functional areas. These areas are (i) cognitive abilities, rational linear and spatial gestalt, (ii) affective abilities, both emotional and social, (iii) physical abilities, those involved in sensing and those involved in movement, and (iv) intuitive abilities, including those involved in creativity and altruistic. In fact, an understanding of these areas of intelligence must be considered in the definition of

intelligence and the quest to identify those who can perform at higher levels of intellectual functioning. It is obvious from this brief description of the areas of intelligence that identification of high levels of giftedness and talented cannot simply be made based on samples of school related tasks or rational, linear ability such as measured in intelligence tests (Clark, 1996).

Gagne (2005) distinguished between giftedness, or students' potential to succeed, and talent, or manifestation of high ability through accomplishment in one of many social relevant areas, including academic achievement in various subjects. In Gagne's model, high achievement is ultimately recognized due to a combination of intrapersonal characteristics such as motivation and personality, contextual factors and chance or luck. This consideration of contextual and motivational characteristics in Gagne's model is useful to this study, as it justifies teachers observing both characteristics of students commonly associated with giftedness (e.g. motivation) and characteristics that may result in bias against students (e.g., socioeconomic status). This suggests that it is important to consider how the three sets of factors may uniquely relate to the recognition of high achievement in specific subject areas.

Furthermore, the concept of intelligence has recently been given broader and more differentiated meanings such as with the recognition of specific and non-traditional talent areas and the popularizing of concepts of "emotional intelligence" and "multiple intelligences" (Clark (1992; Gardner 1983). This is a positive movement away from the earlier unitary view of intelligence and giftedness (where a gifted child was considered to have superior aptitudes in all fields of intellectual endeavour). Multi-faceted definitions of giftedness now are common, which include children with exceptional capacity in one or more broad areas of skill. Some skill areas present difficult measurement issues, particularly of capacity rather than achievement, but within this constraint, the top 2-5% of the population in one of the fields is generally regarded as gifted (Clark, 1996).

Identification of gifted and talented children was initially based on the use of intelligence tests. The use of intelligence tests (IQ tests), as the sole criteria for identification has been out of favour with some professionals. Heward (1996) agreed that intelligence tests may be part of the identification process, but no single index or procedure can identify all gifted and talented children. Heward maintained that the current practice calls for a multifaceted assessment approach that uses information from a variety of sources including intelligence tests, creativity measures, achievement test, portfolios of student works, teacher nomination based on reports on student behavior in the classroom, parent nomination, self-nomination, and peer nomination.

Teacher nomination of the gifted and talented is one of the many forms of identification. This is usually based on the child's scores in class achievement tests and other school and class measures which indicate the child as possessing very superior abilities when compared to other children of his age and class. Although teacher nomination is very widely accepted and used as an assessment method, it is not quite objective.

Teacher nominations are favoured by schools (Danis & Rimm, 1989; Tuttle, Becker, & Sousa, (1888) based on the premise that a teacher's knowledge of each student's ability and potential is likely to be substantial. Renzulli (2004) was of the view that it is the thoughtful conclusion of knowledgeable professionals rather than instruments and cutoff score, which should guide selection.

Brown, Renzulli, Gubbins, Zhang, Siegle, & Chen (2005) highlighted particular issues which may impact upon teachers' abilities to identify gifted children:

- How the nature of student's interests influences classroom teachers.
- How unexpected interests produce unexpected behaviours that attract attention.
- How gender bias in gifted in gifted education that indicates that teachers are more likely to select profiles in which the students' behaviour did not match expected gender stereotypes.
- The fear educators have of misidentifying students and placing students in gifted and talented classes.
- The tendency of teachers to focus more on skills associated with academic performance and less of creativity, leadership, and motor skills.
- How extremely bright or the creative, curious, and questioning students, who may be stubborn, rule-breaking, egotistically, or otherwise high in nuisance value, may not be the teachers' favourites, but sometimes the most gifted.

Neber (2004) reported that teacher nomination of highly gifted students has been studied by Terman in 1925. According to the report, teachers often missed up to 25% of the students that were identified as being highly gifted according to standardized group intelligence tests (two standard units above the mean). Denis and Rimm (1989) supported this claim and explained that children from different ethnic groups and lower socio-economic background can actually be disadvantaged by teacher selection, since teachers may have lower expectations for these children. Other studies also showed poor indications for the diagnostic quality of teacher nomination (Hoge & Cudmore, 1986; Lowenstein, 1982; Pedulla, Airasian & Madaus, 1980; Pagnato & Birch 1959). Gear (1976) who summarized studies with up to 6000 teachers, indicated that the effectiveness ranges were between 40-50% and the efficiency of teachers' performance was between 30-50%. Jacobs (1971) found that, of the children

overestimated by teachers two thirds were verbally adept, cooperative, and keen to please their teacher. In contrast, a more recent study by Reis and Purcell (1993), in which 470 teachers of children in grades 2-6 were asked to nominate children for whom curriculum compacting was necessary, concluded that the teachers were able to select the appropriate children. Investigations that are more recent confirmed these results, and were used as arguments for rejecting teacher nominations as identification instruments, at least, when they are used as the only source in identifying students for gifted programs (Neber, 2004; Wild, 1993). Previous research has also revealed potential problems concerning teacher nomination of gifted students including teachers' misconceptions concerning the characteristics of gifted students (Achenbach, 1997) and their bias against culturally diverse students (Kaufman & Harrison, 1986). Inadequate training of teachers may also lead to unreliable referral decisions (Ricovery, 2000). However, with the development of reliable and objective instruments, teachers can now be in a better position to provide information about the characteristics of gifted students (Peters, 2009). Betts and Neihart (1988) estimated that as many as 90% of children world-wide, nominated as gifted by untrained teachers, are likely to be high achieving conformists, teacher pleasers, who often become bored in school but learn to use the system to get by with as little effort as possible. Jacobs (1971) found that teachers who had received no training on the characteristics of gifted children, tended to overestimate the ability of children who were verbally articulate and cooperative in class, and who sought teacher approval. In Ghana, efforts for gifted education have not yet caught the attention of the education authorities. Even more disturbing is the fact that there are no institutional programmes for the identification of the gifted and talented children. In the prevailing circumstances, teachers depend on their own observation to nominate them for special services that schools might provide. The decision to offer any service for the gifted individual lays solely with the school teachers and at best, parents. For example, the nomination for the Science and Mathematics Clinics depended solely on teacher nomination strategies. Even in this circumstance, teachers relied on informal methods including achievement records and observation of certain behavioral characteristics such as creativity, motivation, learning and leadership to nominate these children for the programme. Even though, the Ghanaian teachers rely on informal identification measures, no studies have ever been carried out to explore the teachers' level of the nomination skills in the identification of the gifted and talented children.

### **3. The Purpose of the Study**

To determine the level of relationship between teachers nomination strategies and the five predictor variables (type of school, qualification, age, experience and gender)

To determine the combined contributions of the five predictor variables to the teachers nomination of the gifted and talented children

To determine the individuals contribution of each of the five predictor variables to the teachers' nomination strategies of the gifted and talented children

### **4. Research Questions**

- 1 Do each of the five predictor variables relate significantly with the teachers, nomination of gifted and talented children?
- 2 What is the composite effect of the five predictor variables to teachers' nomination of the gifted and talented children?
- 3 What are the relative effects of each of the five predictor variables to the teachers' nomination of the gifted and talented children?

## **5. Method**

### **5.1 Research Design**

The cross-sectional survey research method was used to investigate the research problem formulated in this study. This is because the researcher is interested in investigating possible relationships among variables without manipulating them. The independent variables were represented by the teacher's gender, age teaching experience, academic/professional qualification and type of school. The dependent variable which measured the level of the teachers' understanding of the characteristics of gifted and talented children were represented as learning characteristics, motivational characteristics, creativity characteristics and leadership characteristics.

### **5.2 Participants**

The sample consisted of four hundred teachers, made up of 215 males and 185 females selected from six Districts of the Central Regions in Ghana. The Districts and the Schools were purposively selected. The simple random sampling method was however, used to select the teachers from the schools. There were 129 teachers selected from the Primary Schools, 129 from the Junior High Schools and 142 were selected from the Senior High Schools with 165 (41.3% ) of them aged between 20 to 35 years while 235 (58.7%) aged above 35 years. The participants had as their educational qualification; SSCE 18 (4.5%), Cert 'A' 76 (18.8%), Diploma 148

(37%), Degree 144 (35.8%) and Masters Degree 14 (3.5%). Majority 330 (82.5%) taught below 20 years while 70 (17.5%) taught more than 20 years.

### 5.3 Instrument

An adapted and simplified version of the Scale for Rating Behavioral Characteristics of Superior Students (SRBCSS) (Renzulli, Smith, White, Callahan, Hartman, & Westberg, (1997) was used in collecting the data. The adapted scale has two main sections. The first section was designed to obtain the demographic data such as age, gender, length of teaching, type of school, and qualification. The second section contains 45 items describing the characteristics of gifted and talented children under four headings; learning characteristics, motivational characteristics, creativity characteristics and leadership characteristics. Participants were to rate the extent to which they agree or disagree with the statement on a 4-point Likert type scale ranging from strongly agree (4), agree (3), disagree (2), and strongly disagree (1). These responses gave each respondent a cumulative score. The Chronbach reliability coefficient for the adapted scale was .86

### 5.4 Procedure

The participants were contacted at their various schools after permission to carry out the research was granted by the District Directors of Education. The questionnaire distributions were personally done. The teachers who declined to participate were not included in the study. Four hundred and fifty questionnaires were sent out, however, four hundred were retrieved for the study representing 88.9% return rate.

### 5.5 Data Analysis

The data generated was coded and the scores obtained were analysed using the regression analysis. Multiple regressions provide estimates both of magnitude and statistical significance of relationships between variables. In this study, the interval level of the dependent variable teacher nomination was regressed against four predictor variables, gender, age, school type, qualification, and experience.

The data was checked for outliers. Hair, Anderson, Tatham, & Black (2005) recommended a standardized score of 2.5 or greater for 80 observations and 3 to 4 for large samples for univariate analysis and Mahalanobis D2 as the multidimensional position of each observation from multivariate perspective (Hair et al, 2005). Based on this analysis no outliers were observed from the dataset.

The correlation between the variables was examined using variance inflation factor (VIF) and Tolerance (T). The co-linearity index, that is the VIF and T were inspected. Tolerance looks at the accuracy of the computation due to rounding errors which may arise from collinear relationships. Variable with a large VIF (VIF 4 > or R2 > .75) and small Tolerance (Tolerance < .01) provide evidence of co-linearity problem and inaccurate computations (Pedhazur, 1997). Outliers and influential points were investigated by looking at the standardized residuals (ZRESID). Influence analysis which identify certain cases that have more influence on regression estimates than others were conducted using the Cook's analysis. The results showed that Cook's analysis indicated low values (> 0.04) for the scales meaning there were no undue influential cases.

## 6. Results

**6.1 Research question 1:** Do each of the five predictor variables relate significantly with the teachers, nomination of gifted and talented children?

To answer research question one a correlation matrix showing the correlation coefficients between the teachers' nomination strategies and the five predictor variables is presented in table 1.

**Table 1** Correlation matrix showing the relationship between teacher nomination and predictor Variables

Variables	Gender	Age	School type.	Qualification	Experience	Nomination
Gender	1					
Age	.153	1				
School type	-.159	.346	1			
Qualification	-.190	.283	.679	1		
Experience	.124	.672	.215	.163	1	
Nomination	.039	.424	.169	.131	.170	1

Table 1 shows the inter correlation coefficient between the independent variable and the predictor variables (gender (r = .039); length of teaching r = .170). (r=.169); age (r .424) and (qualification r = -.131) all indicating a positive relationship but not significant. Generally, the results showed low correlation and so they are weak. Again, reference to the results in table 1 showed that except for gender and type of school which correlated negatively with qualification, there is a positive relationship among the variables.

**6.2 Research question 2:** What is the composite effect of the four predictor variables to teachers' nomination of the gifted and talented children?

**Table 2** Multiple regressions of the predictor variables on teacher nomination

Parameter	Value
R-square	0.16
Adjusted R square	.003
Standard error of estimate	.519
Regression f ratio	1.248
p value	.286

The multiple regression correlation coefficient R showing the linear relationship between the predictor variables gender, age type of school qualification and teaching experience and teacher nomination as shown in Table two is 0.16. The adjusted R square is 0.003. This implies that that only .03% of the total variance of the ability of the teachers to nominate gifted and talented children has been accounted for. Further verification using the multiple regressions ANOVA, however, produced F ratio which is 1.248,  $p < .286$ . This means that there is no significant linear relationship between the predictor variables and the criterion variable.

**6.3 Research question 3:** What are the relative effects of each of the four predictor variables to the teachers' nomination of the gifted and talented children?

**Table 3** Coefficients indicating relative effects of predictor variables to teachers' nomination of gifted children

Predictors	$\beta$	Std. Error	Beta	t	P
Gender	-.082	.055	-.078	-1.495	.139
Age of respondents	-.040	.034	-.084	-1.180	.239
Type of school	.011	.044	.018	.254	.800
Qualification	.020	.039	.036	.522	.602
Teaching experience	.040	.026	.105	1.548	.122

From Table 3, each of the independent variables did not make any significant contribution to the prediction of teacher's identification strategies. Looking at the beta weights which represented the relative contribution of the independent variables to the prediction, were gender =  $-.078$ ,  $t = -1.495$ ,  $p < .139$ ; age =  $-.084$ ,  $t = -1.180$ ,  $p < .239$ ; type of school =  $.018$ ,  $t = .254$ ,  $p < .800$ ; qualification =  $.036$ ,  $t = .522$ ,  $p < .602$  and teaching experience =  $.105$ ,  $t = 1.548$ ,  $p < .122$  were relatively weak in the prediction. The coefficients for gender and type of school indicated an inverse relationship hence not a major determinant of factors that can predict teachers' nomination of gifted and talented children. The relative contributions of type of school, qualification of teacher, and teaching experience to the teachers' ability in the identification and were not significant therefore not potent enough in the prediction.

## 7. Discussion

The literature on the gifted and talented children validated that there are two generally accepted purposes of providing special education for the potential high growth. First, is to provide young people with opportunities for maximum cognitive growth and self-fulfillment through the development and expression of one or more combinations of areas where superior performance may be present. Second, is to increase society's reservoir of persons who will help to solve the problems of contemporary civilization by becoming producers of knowledge and art rather than consumers of existing information (Renzulli 1999). It is against these purposes that identification is crucial in order for the necessary services that would enhance their rapid development. This study was therefore set to explore the possibility of teachers' perceived ability to identify the behavioral characteristics of gifted and talented children within the school population. Variables such as place of school, gender, age, length of teaching and qualification were used as independent variables and learning characteristics, motivational characteristics, creativity characteristics and leadership characteristics were taken together as dependent variables to predict the extent to which teachers are likely to use these characteristics of the gifted and talented children to identify them.

The results of the study indicated that gender, age, type of school, length of teaching, and teachers' qualification collectively or separately were not effective predictors of teachers' ability to identify gifted and talented children. It was evident from Table 2 that the magnitude of the relationship among the independent variables in predicting teacher identification skills can be gleaned from the multiple regression analysis with the value (.016) and in multiple R-square adjusted (.003). The interpretation is that there is a confirmation that only .03% of the total variance in teachers' identification skills is accounted for by the combination of gender, age, type of school, length of teaching and teachers qualification. The p value of 0.286 which was found not to be significant at 0.05, further confirms the weakness of the predictive capacity of the independent variables. The negligible contributions of these measures taken together confirm the low efficiency of teachers' nominations and indicated that many gifted children may not be identified. This result confirms what Hoge and Cudmore (1986), Lowenstein (1982), Pedulla, Airasian & Madaus (1980) observed, that studies on teacher nomination resulted in rather poor indications for diagnoses. The implication of this is that the study provided information about the

quality of teacher nomination of the gifted for gifted programs. The caution for Ghana as a country is not to rely on this procedure as the only means by which the gifted and the talented children could be identified. Again, the findings from this study corroborates what Neber (2004) found in his studies of teacher nomination of students for gifted programs. This study revealed that teachers' nomination of gifted children was not effective since the children nominated for the program were only slightly above the mean.

In Ghana, to date, there has not been any effective means of identifying the gifted and talented children for special education services. The only means, by which individuals who are gifted and talented are identified, is through the use of achievement tests. In this regard, teachers play an important role in the identification of these children.

## 8. Conclusion

The results of the findings indicated that the identified demographic variables of the teachers have no significant relationship with the teachers' nomination skills. Taking a global look at the results, it can be seen that teachers surveyed showed less promise in the identification of the behavioral characteristics of the gifted and talented children. The results of this study provide evidence that the information gathered with teacher nominations show close corroboration of earlier findings of similar studies that teacher nomination strategies cannot be the sole criteria for identification and nomination for gifted programs.

Because early identification of potential giftedness is crucial to appropriate intellectual provisions as well as social and emotional support, teachers should realize the limitations of each assessment measures and use multiple measures in their efforts to identify children who are gifted and talented. More so, research is needed about how teacher characteristics influence their identification strategies.

## 9. Limitations

There are a number of limitations to this current study. The first involve the validity of the questionnaire measure of the teacher nomination. Although a validated scale was adapted the researcher did not pilot the questionnaire to establish a new reliability and validity measures. Second, the sample is limited to only Central Region Schools which were purposively selected. It is expected that a national survey should be conducted to include a fairly representative sample. Third, the regression statistical tool used could also affect the model fit since some extreme scores noted in the data. However, the conditions that are suitable for the use of regression analysis were considered and were found to be appropriate.

## 10. Recommendations

Teachers are the frontline professionals in any educational programs therefore their skills in identification of the gifted and talented children are worthwhile. For this reason, it is necessary for these teachers to learn more about the gifted and talented through in-service education to enable them develop skills in recognizing those children who may exhibit gifted characteristics in order that special education services can be extended to them to enhance their development.

The rather low effectiveness of the teacher nomination strategies as found in this study demands that the Ghana Education Service and the Ministry of Education must explore and encourage the use of multifaceted approaches in the identification of gifted and talented children in the schools.

This study has also provided information about the quality of teachers' nominations, and therefore, recommends that the use of teacher nomination as the sole criteria for identification of gifted and talented should not be used in isolation. Rather, other evaluative procedures must be considered if teacher nomination strategy is to be used. It is imperative that standardized assessment instruments must be developed to suit the cultural and linguistic environments of the Ghanaian child.

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