

ACADEMIC ACHIEVEMENTS OF EXTROVERTED AND INTROVERTED STUDENTS IN SENIOR SECONDARY SCHOOL BIOLOGY

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Abstract

The study investigated, using an ex-post facto research design, whether there is significant difference between the academic achievements of extroverted and introverted students in Oshimili North Local Government Area of Delta State. This study involved a population of 3,136 Senior School (SS2 and SS3) students from ten Public Secondary Schools. The population included 569 and 999 extroverted and introverted students respectively. The sample comprised 113 extroverted and 199 introverted students. Data were collected from 2006 promotion score sheets prepared by the teachers and endorsed by the Principals and Director of Examinations and standard of the Ministry of Education, Asaba. Data were analysed using t-test. Result indicated no significant academic achievement between the extroverted and introverted students. However, the introverted students scored a higher percentage mean score than the extroverted students. Implications of the findings of the study were discussed and recommendations made.

Introduction

Experienced teachers often observe that when they step into the classroom to teach, some students always want to show that they have the knowledge of the topic introduced. At the slightest attempt to know the entry behaviour of the students by the teachers, these students are often seen clearly raising their hands to answer questions. To them, any other questions raised by another group of students are regarded as unnecessary. They, in most times, appear to be very interested in what goes on in the classroom or their environment. They also seem to have won the hearts of the teachers, because in most cases, the appointment of class prefects, school prefects, etc is from this group of students. This category of students is called extroverts. According to Eysenck (1952), in Gray (1991), any person who seeks excitement in the external environment is called an extrovert.

On the other hand, there exist some students that appear not to know any thing about the topic introduced by the teachers in the classroom. When ever the teacher ask questions, these students appear calm and will never behave as if they can ever give solutions to the questions, until they are demanded by the teachers to do so. If an observer is not very careful, it will appear as if the teachers are not carrying these students along. They appear to the teachers as people who do not have interest in what ever goes on in the classroom. Therefore, they appear not to have won the hearts of the teachers. Consequently, some of the teachers may not take them very serious. This group of students is known as the introvert. Eysenck (1952), in Gray (1991), says that the person who avoids excitement in the external environment is regarded as an introvert.

Inexperienced teachers and at times experienced teachers find it difficult to cope in the process of teaching the two groups of students, in the same classroom. In most situations, teachers, especially the inexperienced ones, tend to work with the extroverted students because they feel that these students make their work easier and more interesting to the detriment of the introverted students, who in most cases, appear to be passive.

Eysenck and Eysenck (1985), believe that differences among people are determined by inherited physiological characteristics of the nervous system; they believe that differences in introversion - extroversion stem from differences in the arousability of the central nervous system (CNS) from sensory input. Eysenck (1982), proposed that everyone seeks a moderate degree of arousal, which is optimal for psychological functioning. Eysenck (1982), proposed further that introverts have easily aroused CNS, so, they avoid excess stimulation to prevent arousal from exceeding the optimal level, while extroverts have CNS that are not easily aroused, so, they seek excess stimulation to reach the optimal level. Supporting Eysenck (1982) and Eysenck and Esysenck (1985), Gray (1991), reported that introverts do react more strongly than do extroverts to various stimuli. Geen (1984), also reported that introverts show greater disruption in performance on a

learning task when loud noise is present and manifest a greater skin conductance response than the extroverts. Smith, Wilson and Davidson (1984) supporting Geen (1984) reported introverts sign of arousal to sudden noise.

Eysenck (1982), classified both introvert and extrovert persons into unstable and stable groups. He described an unstable introversion as being moody, anxious, rigid, sober, pessimistic, reserved, non-social and quiet, while the unstable extroversion is touchy, restless, aggressive, excitable, changeable, impulsive, optimistic and active. On the other hand, the stable introversion is passive, careful, thoughtful, peaceful, controlled, reliable, even-tempered and calm, while the stable extroversion is social, outgoing, talkative, responsive, easygoing, lively, carefree and leadership.

In recognition of the differences existing among different people and the diversity of the people of Nigeria, the Federal Government of Nigeria entrenched in the 1999 Constitution of the Federal Republic of Nigeria the policy towards ensuring equal and adequate educational opportunities at all levels (Federal Government of Nigeria (FGN), 1999). Also, the National Policy in Education provides for equal educational opportunities to all Nigerians irrespective of their differences (FRN, 2004).

Problem of the Study

Many studies (Eysenck, 1952 in Gray, 1991; Geen, 1984; Eysenck, 1982) abound on the relationships between the external environment and introversion-extroversion'. Also, there are studies (Eysenck and Eysenck, 1985; Eysenck, 1982; Gray, 1991) on the relationships between the degree of arousability of the CNS and physiological functioning of extroverts and introverts. Besides, studies (Eysenck, 1952 in Gray, 1991; Eysenck and Eysenck, 1985; Eysenck, 1982; Gray, 1991) on the characteristics and identifications of introverted and extroverted students in a classroom interactions are many. None of the above mentioned studies dealt with relationship between extrovertedness or introvertedness and academic achievement; none dealt with a comparative studies on the academic achievements of the extroverted and introverted students in science and mathematical subjects. Therefore, the need to carry out research on the comparative analysis on academic achievements of the extroverted and introverted students in biology, a science subject, gave birth to this study.

The problem of this study, therefore, is stated thus: what is the academic achievement of the extroverted students vis-a-vis the academic achievement of the introverted students in Senior School Biology?

Purpose of the Study

This study was meant to expose one of the major erroneous assumptions made by the practicing teachers during the teaching-learning activity in the classrooms. Specifically, this study was to find out the academic achievements of

- a. extroverted students in Senior School Biology and
- b. introverted students in Senior School Biology;
- c. whether the extroverted students have higher academic achievement than the introverted students in Senior Secondary Biology and
- d. whether teachers are justifiable in their preference to work with the extroverted students.

Significance of the Study

The significance of this study lies in providing insight about the academic achievements of both extroverted and introverted students in Senior School Biology in order to give the teachers better understanding of the students they are to teach in the classrooms from time to time. This study also assesses the present Senior School curriculum as to whether it is providing education for all as provided by the National Policy in Education and 1999 Constitution of the Federal Republic of Nigeria. This study provides base line data to the researchers wishing to work on this topic in another locality or on entirely another subject area.

Null Hypothesis

There is no significant difference in the mean scores (MS) of the extroverted and introverted students in Senior School Biology.

Methodology

The ex-post-facto research design was used in carrying out this study, since the events/variables had already occurred and the researchers cannot manipulate the independent variables. (Kerlinger, 1979; Nworgu, 1991; Maduabum, 2004).

The population consisted of 3,136 Senior School two and three (SS 2 and SS 3) students' 2006 promotion examination scores in Biology in Oshimili North Local Government Area of Delta State of Nigeria. During one-week classroom interactions among the researchers, four educational psychologists and the SS 2 and SS 3 students, it was observed that out of the 3,136 students, 569 students were extroverts, while 999 students were introverts. A simple random sampling technique was applied in selecting a total sample of 312 students. This sample consisted of 113 extroverted students and 199 introverted students. The 2006 promotion examination scores in Biology for SS 2 and SS 3 students formed the data used in this study.

The instruments for data collection were the 2006 promotion examination score sheets (2006PESS) for SS 2 and SS 3 prepared by Form Teachers and signed by the Principals and Director of Examinations and standard of Delta State Ministry of Education, Asaba. The instruments were validated by Science education experts. The Kuder-Richardson 21 (K-R 21) estimate was used to determine the reliability coefficients of 2006PESS for SS 2 and SS 3 which were 0.92 and 0.97 respectively and were said to be reliable. The promotion examination scores in Biology of both extroverted and introverted students that form the sample of this study were collected.

The mean scores (MS) for both extroverted and introverted students were calculated. The standard deviation (SD) for both categories of the students were also calculated. To test the only null hypothesis, the independent t-test statistics was used to analyse the data since two MS were compared in order to know whether the difference between them was significant (Owie, 1996: Olaitan, AH, Eyoh and Sowande, 2000). A 2-tailed test at 0.05 level of significance was used.

Results

The results of this study are summarized in table 1 according to the null hypothesis formulated.

Hoi: There is no significance difference in the mean scores (MS) of the extroverted and introverted students in Senior School Biology.

Table 1: Independent t-test results for Extroverted and Introverted students in Senior School Biology

Group	N	MS	SD	df	t-cal	t-crit	P
Extroverted students	113	46	10	310	0.077	1.960	>0.05
Introverted students	199	52	13				

Table 1 showed the result of t-test for independent samples of extroverted and introverted SS 2 and SS 3 students' mean scores in 2006 Promotion Examination scores in Biology from ten Public Secondary Schools in Oshimili North Local Government Area of Delta State, Nigeria. It was observed that the extroverted students had a mean score (MS) of 46%, while the introverted students had a mean score (MS) of 52%, a mean score difference of 6%. The t_{cal} was 0.077 at 0.05 level of significance for a 2-tailed test, while the t_{crit} was 1.960 at 0.05 level of significance for a 2-tailed test at the df of 310. The t_{cal} was less than the t_{crit} . Therefore, the null hypothesis that there is no significant difference between the academic achievements of the extroverted and introverted students was retained.

Discussion

The findings in this study showed that introverted students scored a higher percentage mean (MS) than the extroverted students. This may be probably because the introverted students, with their calm nature, take their time selecting and answering the questions they know best. The extroverted students, although equally good, unlike the introverted students simply on seeing familiar questions jump into conclusion that they can give solutions to them. This agrees with the finding of Eysenck (1982) that an introverted person is careful, reliable and calm, while the extroverted person is carefree, easygoing and a talkative. Further findings of no significant difference in the mean scores between the extroverted and the introverted students in biology showed that both students are equally good when they are given equal opportunity to learn in all respects. The outward or physical appearance of the

extroverted students should not win the hearts of teachers in detriment to the introverted students. The policy of education for all in the National Policy of Education (Federal Republic of Nigeria (FRN), 2004) should be strictly followed by teachers, since the findings of no significant difference in mean scores is in alignment with this study. Also, the provision in section (8), Sub-Section (1) of the 1999 Constitution of the Federal Republic of Nigeria that government shall direct its policy towards ensuring that there are equal and adequate educational opportunities at all levels (FRN, 1999) is in line with the findings of this study.

Recommendations

The following recommendations were made:

1. the curriculum of teacher's education in either colleges of Education or Faculties of Education in Nigerian Universities should have enough information on personality traits or human psychology;
2. the teacher should evenly distribute his/her questions to students in the classroom;
3. equal opportunities should be given to all the students in the classroom, irrespective of their external behaviours or characteristics.

Conclusion

The introverted students had higher MS than their extroverted counterparts in the 2006 Senior School Biology Promotion Examination. Besides, there was no significant difference in the MS between the introverted and extroverted students in 2006 Senior School Biology Promotion Examination.

This implies that teachers who believe that extroversion is a requirement for higher academic achievement should rescind such idea. It also implies that the external characters of students should not be used as pre-requisite for appointment of prefects or for giving undue advantages.

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