

RELATIONSHIP BETWEEN PERSONALITY TRAITS AND ACADEMIC ACHIEVEMENT OF SENIOR SECONDARY SCHOOL STUDENTS IN ANAMBRA STATE

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Abstract

The study investigated the relationship between Personality Traits and Academic Achievement of Senior Secondary School Students in Anambra State. The study used a correlational research design. The sample size for the study was made up of 300 Senior Secondary Two Students (SS2). The instrument used for the study was the Big Five Inventory. Three research questions and three null hypotheses guided the study. Research questions were answered using Pearson Product Moment Correlation Coefficient while hypotheses were tested using multiple linear regression at .05 level of significance. The findings showed that there is no significant relationship between the selected personality traits of openness, conscientiousness, neuroticism and students' academic achievement in English Language and Mathematics. Based on the findings, the researcher recommends among others that teachers should create an enabling learning environment bearing in mind the individual differences of the learners and employ suitable teaching techniques that will accommodate all categories of learners given their personality traits.

Keywords: Personality Traits - Openness, Conscientiousness, Neuroticism, Academic Achievement.

Introduction

Academic achievement is an issue of major concern among students, teachers, parents, school administrators, and Nigeria as a nation. Researchers have made several attempts to unravel the complexities and intricacies surrounding academic achievement of students in secondary schools. Opinions differ as to why some students excel academically while others appear to be under-achieved. As a matter of fact, the low academic achievement of students at all levels in educational institutions in Nigeria has given room for much criticisms from all and sundry in recent time. It is pertinent to note that the results of the Nigerian students in most external examinations today are usually sub-optimal. Reports of students' West African Examination Council (WAEC) performance from 2009 to 2017 have indicated downside which is evident in mass failure recorded in the two basic subjects, English Language and Mathematics that form the foundation for good academic achievement in tertiary institutions, (Iyabo, 2018). Iyabo further stated that only 30 percent of the students who sat for the 2009 as well as 2010 WAEC examinations passed with five credits including English and Mathematics and made the success rate while the remaining others constituting 70 percent failed the success rate of students. In the May/June 2011 WAEC examinations, only 86,612 candidates representing 5.6 percent of the total number 1,540,250 candidates that participated in the examination got five credits in English language and Mathematics. In May/June 2012 WAEC, out of 1,672,224 candidates who sat for the examination, only 649,159 which represents just 38.81 percent got five credits and above including in the core subjects of English and Mathematics.

More so, in 2013 November/December WAEC examinations, only 29.17 percent of the candidates obtained five credits including English Language and Mathematics while 70 percent of the candidates failed. Iyabo added that in both 2017 and 2018 January/February private examinations, only 26.01 percent and 17.13 percent candidates had passed with five credits including English Language and Mathematics whereas the remaining over 70 percent candidates failed. This is a clear indication of students' decline in academic success and may jeopardise their future should such tend continue. The Nigerian minister of education, Adamu (2018) described the mass failure in WAEC exams as worrisome, disgraceful and sub-standard of education in Nigeria. The decline in students' academic success can as well destabilize the individual students' life course, affects the economic status of the state and nation at large, poses social problems and, as such merits further attention.

Academic achievement is the ability of the student to study and remember facts and being able to communicate his/her knowledge orally or in written form in an examination condition. It is also an important parameter for measuring students' success. Educators, researchers, and psychologists have been constantly searching for a set of variables and factors that constitute to students' academic achievement. Among others are motivational factors that are related to the quality of instruction in schools, the psychosocial climate of the classroom; Family factors such as family environment perception, family support perception; Socio-economic status such as parents' educational background and their occupation; Non-cognitive factors such as personality traits, identity styles, self-concept and self-esteem. But the major factor that is believed to be associated with the success or failure of students is their personality traits. Consequently, in trying to ensure better academic outcomes among students, it is important to examine some inherent individual characteristics of students that are associated with their school success or otherwise. Hogan & Chamorro-Premuzic (2015) believe that personality traits are based on a series of related components called facets.

Psychologists who try to ease out the science of who we are define personality as "individual differences in characteristic patterns of thinking, feeling, and behaving" (American Psychological Association, 2017). There are numerous ways to measure personality. However, psychologists appear to have declined the idea of dividing humanity neatly into types. Instead, they focus now on personality traits. The most popular of these traits is the Big Five: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. These traits are easily differentiated from the other and are constant over a long period of time. Hence, they have been identified to correlate with methods, strategies and achievements. For example, individuals scoring high on the extraversion scale possess the narrower traits of sociability and assertiveness. Individuals high on the neuroticism scale tend to experience negative emotions such as guilt and pessimism, and are characterized by low self-esteem. Individuals with high scores on openness to experience tend to have intellectual curiosity, creativity, and preference for novelty; be open-minded, less conservative, and possess active imaginations. Individuals who score high on agreeableness are sympathetic, helpful and altruistic while those who score high on conscientiousness are responsible, persistent, trustworthy, and purposeful. Extraversion points to impulsiveness, ambitious, social, caring, optimistic, confident (I learn more through cooperating and discussing with my classmates). Agreeableness: friendly, helping, trusting, kind, cooperative, kindhearted, supportive. (I observe that I also benefit from being of help to my classmates). Conscientiousness: hardworking, motivated, well organized, dutiful, achievement-oriented (I make efforts to achieve success in all I do). Neuroticism: Nervous, Sensitive, disturbed, confused, distracted, (I cannot understand the imaginary concepts of the core subjects). Openness to Experience: Open-minded, inventive, curious, imaginative, innovative, (I am always willing to accept the new experiences of the basic subjects).

Recent studies show that the positive relationship between conscientiousness and overall academic achievement has been widely revealed (Ivcevic & Brackett, 2014; Trautwein, Ludtke, Nagy, Lenski, Niggli, & Schnuder, 2015). The beneficial features of conscientiousness (e.g., hard-working, disciplined and perseverant ways of learning) may as well apply to English learning outcomes, which is consistent with prior studies (Guo, Tong, Wang, Min & Tang, 2018; Ibrahim, Unaldi, Samancioglu & Baglibel, 2013).

Given that the big five encompasses five dimensions of openness, conscientiousness, extraversion, agreeableness and neuroticism, however the present study will focus on three selected dimensions which include openness, conscientiousness and neuroticism in relation to students' academic achievement.

Conceptual Review

Openness and Academic Achievement: Openness refers to the degree or level of one's imagination independent, and interested in variety vs. practical, conforming and interested in routine. It represents to personality characteristics as curiosity, novelty, cultivated, aesthetic, sensitivity, intellectual, creative (Schwaba, Luhmann, Denissen, Chung, & Bleidorn, 2017). Previous research has linked openness to experience to broad intellectual skills and knowledge which are likely to increase with age (Gatzka & Hell, 2017).

Conscientiousness and Academic Achievement: Conscientiousness refers to the degree with which an individual is reliable. It represents such sub-traits as being organized, dependable, responsible, conformity,

orderly, diligent, vigilant, attentive, cautious, logical, risk averter, thorough, comprehensive, reliable, determined and focused (Conrad & Patry, 2012). This factor has been linked to achievement, conformity, seeking out security, as well as relating negatively to placing a premium on stimulation and excitement (Trautwein et. al, 2015). Quite a number of researches demonstrate that conscientious students achieve higher levels of academic success both in high and secondary schools (Vedel, 2014; Nyarko, Kugbey, Amissah, Ansah-Nyarko & Dezdo, 2016)

Neuroticism and Academic Achievement: Neuroticism is the low level of emotional stability. McCrae, (2010) defined neuroticism as the variances of individual tendency to experience suffering which reflects in an uneven and emotional insecurity. Neuroticism is the tendency to be calm, secure, and self-satisfied vs. anxious, insecure and self-pitying. Paunonen and Ashton, (2013) found negative associations between neuroticism and academic achievement whereas Di Blas and Carraro, (2011) found neuroticism to be positively related to academic achievement.

Research Questions

The study was guided by the following research questions:

1. What is the relationship between openness and academic achievement of SSII students in English Language and Mathematics?
2. What is the relationship between conscientiousness and academic achievement of SSII students in English Language and Mathematics?
3. What is the relationship between neuroticism and academic achievement of SSII students in English Language and Mathematics?

Hypotheses

The following hypotheses were formulated and tested at .05 level of significance:

1. There is no significant relationship between openness and academic achievement of SSII students in English Language and Mathematics.
2. There is no significant relationship between conscientiousness and academic achievement of SSII students in English Language and Mathematics.
3. There is no significant relationship between neuroticism and academic achievement of SSII students in English Language and Mathematics.

Method

The study employed a correlational research method. Three education zones were selected from the six education zones in Anambra State using simple random sampling technique. Two schools from each of the three education zones were sampled totalling six schools. The study was carried out among SS2 students in order to ascertain the relationship between the selected personality traits of openness, conscientiousness, neuroticism and students' academic achievement in English Language and Mathematics.

The data collection lasted four weeks and the students in the selected classes were enlightened on the big five personality traits and how to respond to each statement on the inventory that reflects the characteristics that apply to them as an individual. The instrument used for the study was the Big Five 44-Item Inventory (BFI) developed by John and Srivastava (1999). Copies of the instrument were administered on the sampled students by the researcher. The research questions were answered using Pearson Product Moment Correlation Coefficient (PPMCC) while the hypotheses were tested using multiple linear regression at .05 level of significance.

Results:

The results of the study are presented in Tables 1-3 in line with the Research questions and hypotheses.

Research Question 1: What is the relationship between openness and students' academic achievement in English Language and Mathematics?

Table 1: Pearson's r on the Relationship Between Openness and Students' Academic achievement in English and Mathematics.

Source of Variation	N	Openness	English	Mathematics	Remarks
Openness	300	1	.628	.436	
English		.628	1		Moderate Positive Relationship
Mathematics		.432		1	Moderate Positive Relationship

The data in Table 1 shows that there is a moderate positive relationship between openness and English Language ($r=.628$) and Mathematics ($r=.432$).

Research Question 2: What is the relationship between conscientiousness and students' academic achievement in English Language and Mathematics?

Table 2: Pearson's r on the Relationship between Conscientiousness and Students' Academic Achievement in English Language and Mathematics.

Source of Variation	N	Conscientiousness	English	Mathematics	Remarks
Conscientiousness	300	1	.677	.333	
English	300	.677	1		Moderate Positive Relationship
Mathematics	300	.333		1	Low Positive Relationship

The data in Table 2 indicates that there is a moderate positive relationship between conscientiousness and English Language ($r=.677$) and low positive relationship on Mathematics ($r=.333$).

Research Question 3: What is the relationship between neuroticism and students' academic achievement in English Language and Mathematics?

Table 3: Pearson's r on the Relationship between Neuroticism and Students' Academic Achievement in English Language and Mathematics.

Source of Variation	N	Neuroticism	English	Mathematics	Remarks
Neuroticism	300	1	-.615	.533	
English	300	-.615	1		Moderate Negative Relationship
Mathematics	300	.533		1	Moderate Positive Relationship

Results:

The data in Table 3 reveals that there is a moderate negative relationship of $-.615$ between neuroticism and English Language and moderate positive relationship of $.533$ on Mathematics.

Hypothesis 1: There is no significant relationship between openness and academic achievement of SSII students in English Language and Mathematics.

Table 4:

Summary of Pearson's Analysis on the relationship between openness and students' academic achievement in English Language and Mathematics

Variables	R	R ²	B	Beta	Cal. F	Df	P-Value	Remarks
Openness	.090	.008	.145	.019	.485	294	.787	Not Significant
and Academic Achievement	.047	.002	-.139	-.012	.130	294	.985	

The data in table 4 reveals that openness and students' academic achievement in English Language had R^2 of $.008$ (ie, a coefficient of determination is 0.8%). The findings indicated that the personality trait of openness has the relationship power of 0.8 percent of students' academic achievement in English Language. Secondly, at degree of freedom of 5 for numerator, 294 denominators and .05 level of significance, the Calculated F value is $.485$ with P-value of $.787$ which is greater than $.05$ alpha level. More so, openness and students' academic achievement in Mathematics had R^2 of $.002$ i.e. 0.2 percent. The Calculated F value of $.130$ at 5:294 degrees of freedom and $.05$ alpha level has a P-value of $.985$ which is greater than $.05$ alpha level. The null hypothesis is not rejected. Therefore, openness and students' academic achievement in English Language and Mathematics is not significantly related.

Hypothesis 2: There is no significant relationship between conscientiousness and academic achievement of SSII students in English Language and Mathematics.

Table 5:

Summary of Pearson's Analysis on the relationship between conscientiousness and students' academic achievement in English Language and Mathematics

Variables	R	R ²	B	Beta	Cal. F	Df	P-Value	Remarks
Conscientiousness	.090	.008	-.392	-.080	.485	294	.787	Not Significant
and Academic Achievement	.047	.002	.305	.042	.130	294	.985	

The above table shows that conscientiousness and students' academic achievement in English Language had R^2 of $.008$ (ie, a coefficient of determination is 0.8%). This indicates that conscientiousness has the relationship power of 0.8 percent of students' academic achievement in English Language. Secondly, at degree of freedom of 5 for numerator, 294 denominators and $.05$ level of significance, the Calculated F value is $.485$ with P-value of $.787$ which is greater than $.05$ alpha level. Also, Conscientiousness and students' academic achievement in Mathematics had R^2 of $.002$ i.e. 0.2 percent relationship. The Calculated F value of $.130$ at 5:294 degrees of freedom and $.05$ alpha level has a P-value of $.985$ which is greater than $.05$ alpha level. The null hypothesis is not rejected. Therefore, there is no significant relationship between conscientiousness and students' academic achievement in English Language and Mathematics.

Hypothesis 3: There is no significant relationship between neuroticism and academic achievement of SSII students in English Language and Mathematics.

Table 6:

Summary of Pearson's Analysis on the relationship between neuroticism and students' academic achievement in English Language and Mathematics

Variables	R	R ²	B	Beta	Cal. F	Df	P-Value	Remarks
Neuroticism	.090	.008	-.171	-.023	.485	294	.787	Not Significant
and Academic Achievement	.047	.002	.560	.050	.130	294	.985	

As revealed in table 6, neuroticism and students' academic achievement in English Language had R² of .008 (ie, a coefficient of determination is 0.8%). This indicates neuroticism has the relationship power of 0.8 percent of students' academic achievement in English Language. Secondly, at degree of freedom of 5 for numerator, 294 denominators and .05 level of significance, the Calculated F value is .485 with P-value of .787 which is greater than .05 alpha level. Neuroticism and students' academic achievement in Mathematics had R² of .002 i.e. 0.2 percent relationship. The Calculated F value of .130 at 5:294 degrees of freedom and .05 alpha level has a P-value of .985 which is greater than .05 alpha level. The null hypothesis is not rejected. Therefore, there is no significant relationship between neuroticism and students' academic achievement in English Language and Mathematics.

In summary, there is no relationship between the selected personality traits of openness, conscientiousness, neuroticism and students' academic achievement in English Language and Mathematics.

Discussion

The statistical analysis reflects the facts of the study as follows: Moderate positive relationship between openness, conscientiousness, neuroticism and English Language/Mathematics; Low positive relationship between conscientiousness and Mathematics; Moderate negative relationship between neuroticism and English Language. By implication, there is no significant relationship between the dimensions of openness, conscientiousness, neuroticism and students' academic achievement. Students who are high in openness tend to have a broad range of interests, are curious, eager to learn new things and creative. In contrast, students who are low in this trait as could be seen in the findings dislike change, do not enjoy new things, resist new ideas, not very imaginative and may struggle with abstract thinking or theoretical concepts. Conscientiousness is associated with hard work and achievement-oriented. Conscientious students are careful to cross their t's and dot their i's whether in classroom work or in the examination room, plan for success and discipline themselves to achieve it. Neuroticism is accompanied by anxiety, fears, doubts and other problems which weaken academic achievement in students suffering these disorders. Such undesirable outcomes can impede learners' path towards actualizing their educational potentials. Nonetheless, the findings reveal that the students' personality traits to an extent affect their academic performance.

The result of the present study is consistent with previous studies conducted by Olowookere, Alao, Adekeye and Ayorinde, 2017; Goetz, Nett, Martiny, Hall, Pekrun, Dettmers, & Trautwein, 2012; Von Stumm, Hell & Chamorro-Premuzic, 2011) who reported that conscientiousness positively correlated with academic achievement and that neuroticism negatively contributed to academic achievement while openness to experience was found to be unrelated to academic achievement. From the study, personality does influence academic achievement of secondary school students. The present findings in a way imply that there is need for family, social and educational settings to create an enabling environment for learners bearing in mind their individual differences in relation to their academic accomplishment. The study revealed that personality traits play a significant role in students' academic pursuit which forms an essential ingredient of academic success.

Conclusion

In conclusion, personality traits play a vital role in predicting students' academic success. The study provided answer to the question why some individuals are academically inclined and others are not in spite

of studying in the same environment and receiving the same instructions from the same teacher. It is therefore important for teachers to have a detailed knowledge of personality traits so as to understand the varied individual differences of learners, so as to accommodate each person and possibly employ suitable teaching and learning styles that will enhance optimum result. This will in turn produce well-trained students with self-awareness as useful citizens for a better functioning society.

Recommendations

Teachers should create an enabling learning environment bearing in mind the individual differences of the learners and employ suitable teaching techniques that will accommodate all categories of learners. It is also imperative for school administrators to organize seminars and workshops on personality development for students in order to give them clearer insight on the influence of personality traits on their academic achievement. Government should as well establish counselling units in all the secondary schools within the state which will help to properly guide students' behaviours and the factors associated with their learning in order to achieve a better outcome.

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