

Academic and Environmental Stress as Predictors of Academic Achievement of Secondary School Students in Nsukka Education Zone of Enugu State, Nigeria

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ABSTRACT: *The study investigated Academic and Environmental Stress as Predictors of Academic Achievement of Secondary School Students in Nsukka Education Zone of Enugu State, Nigeria. The need for the study came as a result of increasing rate of poor academic achievement of secondary school students in the study area to which the researchers sought to find solutions. It was guided by two research questions and two corresponding null hypotheses tested at 0.05 level of significance. The research design used for the study was correlation survey design. The population of the study comprised the entire four hundred and sixty secondary school students identify from cumulative record folder of SSII students who have performed poor in English Language and Mathematics in the study area. The entire population of 460 students were used as sample. In this case, there was no sample. This is because the number can be managed. The instrument for data collection were three sets of questionnaire titled "Academic Stress Questionnaire (ASQ)", "Environmental Stress Questionnaire (ESQ)"; and Academic Achievement Proforma (AAP)". ASQ and ESQ were properly validated by experts in test development and the internal consistency reliability indices of the items estimated at 0.83 and 0.85 respectively using cronbach alpha method. The data collected were analyzed using coefficient of determination (R²) for research questions, while linear regression was used in testing the hypotheses at <0.05 level of significance. The findings of the study revealed that academic stress predicts positively academic achievement of secondary school students. Also, the study found out that environmental stress predicts positively academic achievement of students. The findings also revealed that there is a significant relationship between academic stress and academic achievement of SSII students in Nsukka Education Zone of Enugu State, Nigeria. Based on the findings, it was recommended among others that secondary school guidance counsellors should organize seminars on academic and environmental stress on academic achievement of students to help improve academic achievement of students.*

KEYWORDS: Academic stress, environmental stress, and academic achievement.

INTRODUCTION

In many parts of the world, education has come to stay as one of the most essential activities of government and society. The levels of development reached by many nations usually have connections with the levels of the education system. The major purpose of education is the development of individuals who would effectively participate in the process of national development (Okojie, 2017). The Federal Republic of Nigeria (FRN, 2014) adopted education as an instrument per excellence for promoting national development and social change. The author also noted that education is a strong means for eradicating ignorance, superstition and disease among the people and ensuring quick development of economic, political, sociological and human resources.

In Nigeria, education is in three categories, thus: primary education, secondary education and tertiary education. In this study, the researcher is interested in secondary education. Secondary education is the gateway to whatever individuals can achieve in the education. Secondary education is the education given in institutions for children aged 12-18 years plus (FRN, 2014). The author noted that secondary education prepares individuals for higher education in the society. In secondary education, the students are taught both academic and prevocational subjects that prepare individuals for useful living in the society (Ogbonnaya, 2019). The author also noted that secondary education prepares students not only for useful living but also for higher education. Unfortunately, despite all the importance of secondary education, students at this level are performing poor. This level of education in recent years has witnessed a continuous poor academic achievement of students in various school subjects. This falling standard of academic achievement of secondary school students in the public secondary schools both in internal and external examinations has been of serious concern to experts, parents and stakeholders in education.

In Nsukka Education Zone in Enugu State, it appears that academic achievement of students in public secondary schools is falling. This is true because in recent years, the achievement of students in the West African Senior School Certificate Examination (WASCE) released by West African Examination Council (WAEC) in Enugu State specifically in Nsukka education zone, the area of the study, were very poor. There are evident indices of poor academic achievement in secondary schools in Nsukka education zone as demonstrated by mass failure rates in both internal and external examinations. The data released from the statistics division of West African Examination Council, Enugu Office for the period of 2016, 2017, 2018, 2019 and 2020, show that secondary school students have performed poorly over the years (WAEC Chief Examiner's Report, 2021). Apart from 2016 and 2018, where 55.3% and 51% of the students respectively obtained credit scores in Mathematics and English, an assessment of their performances in other years revealed a very dismal performance where in less than 40% of the students obtained credits in both Mathematics and English. For instance, in 2017, 20% of the students had credit scores in English and Mathematics; 31.56% in Nov/Dec 2018; and 30.7% in 2019 (WAEC Chief Examiner's Report, 2021). This poor state of affairs with regards to students' academic achievement is worrisome because secondary school students of today are

expected to become leaders tomorrow. In spite of efforts severally made for the students to perform well, such as good and quality teaching, provision of learning materials, general counselling, among others, the poor achievement has continued. This is clear indication that public secondary school students in the study area are not achieving academically. In the support of the above assertion, Ncheke (2019) noted that public secondary school academic achievement is on the decrease below average. Also, Onyishi (2017) noted that secondary school students are performing poorly to the extent that many secondary school students feel that one cannot pass school certificate examination very well without one type of malpractice or the other.

Achievement is a variable that is associated with success. It is the act of accomplishing a task successfully especially by effort, courage or skills (Ntegwung, 2017). According to Joyce, Showeres and Fullan (2017) achievement connotes final accomplishment of something noteworthy after much effort and effort in spite of obstacles and discouragements. It is the product of effort or series of efforts. Nworgu (2015) define achievement as a systematic and purposeful quantification of learning outcome. The author further explains that achievement involves the determination of the degree of attainment on individual's tasks, courses or programmes of which an individual is sufficiently exposed to.

Academic achievement is very essential because it tends to show students' level of productivity, efficiency, inefficiency, among others both in present and future time. Academic achievement has to do with what a learner is able to accomplish by execution of class work in the school setting (Ntegwung, 2017). Ewumi (2018) opined that academic achievement of students especially at the secondary school level is not only a pointer to the effectiveness of school but a major determinant of the future youth in particular and the nation at large. According to Adediwura and Tayo (2019), academic achievement is the display of knowledge attained or skills developed in school subjects as designated by tests and examination scores or marks assigned by the subject teacher. In the context of this study, therefore, academic achievement is the educational goal that is achieved by secondary school students over a certain period as measured either by examination or continuous assessment scores.

However, there has been a general understanding about the poor academic achievement among students in Nigeria and this has been of much concern to stakeholders in education. Aremu (2016) pointed out that low learning outcome (academic achievement) has become an important matter that concern many stakeholders like teachers, educational psychologists, school administrators, parents, counsellors among others. According to Nuthanap (2018), the academic achievement of students at different level of education system appears to be deteriorating every year despite plenty of moral and financial supports parents give to their children to enable them do well in schools. This concern about students' academic failure in schools has prompted some people to investigate the determinants of students' learning outcomes. For instance, Amudu and Ago (2019) identified some factors that lead to students' academic failure. According to the authors the factors included dwindling teacher's commitment, inadequate resources or poor socio-economic status, psychological factors, poor study habits and stress among others and according to the authors, stress form the major cause

of academic failure. Kagu (2017) found that academic stress leads to high academic failure of diploma students. In the same manner, Hart and Keller (2020) noted that students blamed their academic failure mainly on environment stress. This issue of academic and environment stress among students is very important because if the child is to gain something from the teacher's instruction, the child must be free from any kind of stress. Murian and Emanu (2019) pointed out that most secondary school students in Nigeria are daily confronted with challenges of coping with their academics due to academic and environmental stress.

In secondary schools, students experience considerable stress in their academic and this usually affect their performance. Dogra (2018) noted that students who perform low academically have greater level of academic stress. In addition, Stephenson and Quirk (2019) have shown significant association between academic stress and poor academic achievement of students. Rosick-Rosick and Kryszewska (2020) state that chronic stress has a stronger negative consequence on mental health among students. Stress is defined as the body's non-specific response to demands made upon it (Dogra, 2018). It is a response and a process by which an individual perceived and cope with challenges (Stephenson and Quirk, 2019).

Academic stress has become a persuasive problem across learning institutions in the world over. The major issue of concern about stress among students is its effects on learning. Academic stress is pressure or tension exerted on students concerning their academics (AKinede, 2017). It is a state of mental or emotional strain or tension resulting from adverse or demanding circumstance from academics (Dogara, 2018). In the context of this study, academic stress is a state of mental or emotional strain or tension on secondary school students resulting from demanding circumstance from academics.

Environment stress affects people in many ways, how they feel, what they think and how they act. When the demands of the environment outweigh an individual's ability to deal with those demands, stress occurs. Taker and Inri (2017) noted that environmental stress leads to students' poor performance in schools. Also, Kagan (2018) noted that unconducive environment is responsible for low performance of students. Other findings that support the present study on environmental stress and performance include Ouru and Leo (2019); Alex, Obi and Peter (2020). Others include, Ewska (2020); Agu (2021); Ossai (2022). According to Bisht (2016) environmental stress refers to a negative subjective psychological response to an environmental stimulus. Environmental stress can be defined as the emotional, cognitive and behavioural responses to an environmental stimulus. Much of the research on environmental stress focuses on examining how different environmental stimuli affect such psychological consequences. In the context of this study therefore, environmental stress are the emotional, cognitive and behavioural responses of secondary school students to an environmental stimulus. Consequently, the study sought to determine the relationship between environmental stress and academic achievement of secondary school students.

However, this study sought to investigate whether academic and environmental stress predicts academic achievement of students in schools. This is because students in Nsukka Education Zone of Enugu State have continued to display poor academic achievement over the years

(Agboaku, 2020). It is against this background that the study investigated academic and environmental stress as predictors of academic achievement of students in Nsukka Education Zone of Enugu State.

The main purpose of this study was to investigate academic and environmental stress as predictors of academic achievement of secondary schools in Nsukka Education Zone of Enugu State, Nigeria. Specifically, the study sought to:

- (1) determine the relationship between academic stress and academic achievement of students.
- (2) determine the relationship between environmental stress and academic achievement of students.

Research Questions

The following research questions posed guided the study.

- (1) What is the relationship between academic stress and academic achievement of students?
- (2) What is the relationship between environmental stress and academic achievement of students?

Hypotheses

Ho1: There is no significant relationship between academic stress and academic achievement of students.

Ho2: There is no significant relationship between environmental stress and academic achievement of students.

METHODS

Design of the Study

The research design used for the study was a correlation survey design. The population for the study was all the 460 SSII students identified from cumulative record folder who have performed poor in English Language and Mathematics in the study area. The entire population of 460 SSII students were used as a sample. In this case, there was no sample. This is because the number can be managed. The instrument used for data collection were three sets of questionnaire titled: "Academic Stress Questionnaire (ASQ)", "Environmental Stress Questionnaire (ESQ)"; and Academic Achievement Proforma (AAP)". ASQ and ESQ were properly validated by experts in test development and the internal consistency reliability indices of the items estimated as 0.83 and 0.85 respectively using cronbach alpha method. The data collected were analyzed using coefficient of determination (R²) for research questions while linear regression was used in testing the hypotheses at <0.05 level of significance.

RESULTS

Table 1: Regression analysis on the relationship between academic stress and academic achievements of students

| Variables | R | R ² |
|--|------|----------------|
| Academic stress and academic achievement of students | 0.32 | 0.63 |

R² = Coefficient of Determination

The result on Table 1 shows that the coefficient between academic stress and academic achievement was 0.32. This implies that there exist a low negative relationship between academic stress and academic achievement of students. Table 1 also revealed that the coefficient of determination (R²) associated with the correlation coefficient of 0.32 was 0.63. This coefficient of determination (R²) indicates that 63% of variation in academic achievement of students is attributed to academic stress. Thus, academic stress predicts students' academic achievement negatively.

Table 2: Regression analysis on the relationship between environmental stress and academic achievements of students

| Variables | R | R ² |
|---|------|----------------|
| Environmental stress and academic achievement of students | 0.28 | 0.48 |

R² = Coefficient of Determination

The result on Table 2 shows that the coefficient between environmental stress and academic achievement of students was 0.28. This means that there exist a low negative relationship between environmental stress and academic achievement of students. Table two also revealed that the coefficient of determination (R²) associated with the correlation coefficient of 0.28 was 0.48. This coefficient of determination (R²) indicates that 48% of variation in academic achievement of students is attributed to environmental stress. Thus, environmental stress predicts academic achievement of students negatively.

Table 3: Regression analysis significant between academic stress and academic achievements of students

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| Model | Sum of square | df | Mean square | f | Sig. |
|--------------|---------------|------------|-------------|-------|-------------------|
| Regression | .212 | 1 | .214 | 1.000 | .002 ^a |
| Residual | 62.716 | 459 | .132 | | |
| Total | 62.516 | 460 | | | |

The result on Table 3 shows that an F-ratio of 1.000 with associated exact probability value of 0.002 is less than 0.05 the probability value set for the study. Thus the null hypothesis was rejected. The researchers therefore conclude that there is a significant relationship between academic stress and academic achievement of students.

Table 4: Regression analysis significant between environmental stress and academic achievements of students

| Model | Sum of square | df | Mean square | f | Sig. |
|--------------|---------------|------------|-------------|-------|-------------------|
| Regression | .311 | 1 | .214 | 2.000 | .001 ^a |
| Residual | 51.422 | 459 | .142 | | |
| Total | 51.498 | 460 | | | |

The result on Table 4 shows that an F-ratio of 2.000 with associated exact probability value of 0.001 is less than 0.05 the probability value set for the study. Thus, the null hypothesis was rejected. The researchers therefore conclude that there is a significant relationship between environmental stress and academic achievement of students.

DISCUSSION OF RESULTS

The findings show that the correlation coefficient of students was low. This means that there exists a low negative relationship between academic stress and academic achievement of students. By implication, it means that the coefficient of determination with a low percentage variation in the academic achievement of students can be attributed to academic stress. It also showed that increase in the academic stress predicts low academic achievement of students.

Further analysis of the relationship between academic stress and academic achievement of students revealed that at the associated probability for the calculated value of F, is less than the level of significance, the null hypothesis was rejected. This implies that there is a significant relationship between academic stress and academic achievement of students.

The findings of this study is in support of the study of Dogra (2018) who carried out a study on academic stress and students' performance and found out that students who perform low academically have greater level of academic stress. In the same vein, Stephenson and Quirk (2019) noted that significant difference exists between academic stress and poor academic achievement of students. Equally, this finding is similar to the findings of Rosick-Rosick and Kryszewska (2020) who stated that chronic stress has a stronger negative consequence on mental health among students. Corroborating these findings are the findings of Kagu (2017); Hart and Keller (2020); Akinede (2017).

The findings also show that correlation coefficient between environmental stress and academic achievement of students was low. This means that there exist a low negative relationship between environmental stress and academic achievement of students. The finding of this study is in agreement with the study of Toker and Inri (2018), who noted that environmental stress leads to students' poor performance in schools. Also, Kagan (2018) noted that uncondusive

environment is responsible for low performance of students. Other findings that support the present study include: Duru and Leo (2019); Alex, Obi and Peter (2020); Ewska (2020); Agu (2021); and Ossai (2022). The above findings validated that academic and environmental stress predicts academic achievement of students negatively. The implication of these findings is that if secondary school students are not properly counseled, their poor academic achievement will continue to increase.

Strength of the Study

This study explored an area which addresses the contemporary problems among students in Nigerian public secondary schools. The investigation is considered timely, given the potential predication of poor academic achievement of students in public secondary schools. The investigation successfully validated the power of academic and environmental stress in predicting academic achievement of students. The use of correlation coefficient enabled the researchers to compare academic stress and environmental stress and academic achievement.

Limitations

Like other survey-based studies, this present study has some limiting factors. The study utilized data from the criterion-referenced point of view to investigate the power of academic and environmental stress on academic achievement of students without considering the moderating influences of demographic variables like gender, ethnicity and some personality traits. With these limitations the generalizability of the findings should be done with care. However, future studies should explore how those demographic variables could moderate the power of academic and environmental stress on reducing poor academic achievement among public secondary school students.

CONCLUSION

Based on the aforementioned findings of the study, the researchers concluded that academic and environmental stress predicts negatively academic achievement among public secondary school students.

Recommendations

Thus, it was recommended that:

- (1) Federal government or relevant education authorities should provide enough guidance counsellors in the various public secondary schools who will assist in the counselling of the students on the dangers of poor academic achievement predicted by academic and environmental stress.
- (2) Available guidance counsellors should organize workshops on academic and environmental stress on academic achievement of students to reduce poor academic achievement of students.

Compliance with Ethical Standard

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical Approval: Faculty of Education Ethical Committee on research at the University of Nigeria, Nsukka, granted approval to conduct this study. The authors adhered to the ethical

standard specification of the American Psychological Association APA (2017) and with that of the World Medical Association (2013).

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