

Relationship between Parental Attitude and Parental Involvement on Students' Interest and Academic Achievement in Biology in Aguata Education Zone.

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Abstract

The study investigated the relationship between parental attitude and parental involvement on students' interest and academic achievement in biology in Aguata Education Zone. The design for the study was correlational survey design. Two research questions and two hypotheses were used for the study. The research was done in Aguata Education Zone in Anambra state. The population consisted of 2,072 (926 males and 1,146 females) Senior Secondary II students from all the 52 public secondary schools in Aguata Education Zone of Anambra state. The sample for the study consisted of 400 SS II Biology students obtained through multi stage sampling procedure. Three instruments titled Parental Attitude towards Biology Questionnaire (PATBQ), Parental Involvement in Biology Questionnaire (PIBQ) and Academic interest scale (AIS) were the instrument used for data collection. These instruments were validated and tested for reliability with reliability coefficient being .969, .981 and 0.981 for PATBQ, PIBQ and AIS respectively using Cronbach Alpha method. Students result for 2023/2024 academic session was also used as academic achievement scores for the study. The research questions were answered using Pearson Product Moment Correlation Coefficient while the hypotheses were tested at 0.05 level of significance using Simple linear regression. The findings of the study showed significant relationship between parental attitude and parental involvement on students' interest and academic achievement in biology in Aguata Education zone. This implies that parental attitude and parental involvement are capable of enhancing academic achievement and interest in Biology. It was recommended among others that parental attitude and involvement should be improved through academic seminars and workshop towards students' interest especially in Biology in senior secondary schools.

Keywords: Parental Attitude, Parental Involvement, Biology, Students Interest, Academic Achievement

Introduction

The technological development of any nation is hinged upon an educated society where Science education is basic and its importance cannot be overemphasized. Science education is of global importance to every developing nation and as a result, most nations value it because of its relevance in national development (Odeyemi, 2020). Science education has been tagged a major instrument needed for global competition. Science subjects include, Mathematics, Physics,

Chemistry, Biology, Agricultural Science, Engineering and other related science, but the core science subjects remained Mathematics, Physics, Chemistry and Biology. These subjects have remained as the platform through which every major technological courses or constructs are formed; hence, science subjects have remained indispensable to any child and to any nation. Industries and organizations also depend solely on these subjects in the development of their personnel.

Biology is an indispensable subject which is the basic and foundation for other science related courses. It is expected that, because of the importance of biology, many students will be willing to study biology; thereby exhibit high interest and perform creditably in biology. However, from the analysis of students' WAEC results (2021-2024) it shows fluctuation in the students' academic achievement in biology, what is obtainable in the classroom is different from what is published online. Therefore, the issue of poor academic achievement of secondary school students in biology is yet to be settled. This has become a major point of concern to students, teachers, parents, guardians, as well as other stakeholders in the field of education, including researchers. If this problem is not addressed, the issue of poor academic achievement especially in biology may grow worse. It is pertinent therefore that parents would also change their attitude and involvement towards their children academic achievement in the positive direction.

Parental attitude refers to the outlook/ mindset parents have towards their child(ren). It state parents' frame of mind and measures their involvement in a child's life. It is also the positive attitude parents have towards their children's education. It considers their influence on children's choices, actions, responses, behaviors and overall personality. Parental attitude towards school and the learning process is a wide-ranging factor that naturally affects the support they provide for students, the relationship they establish with school management, and the nature of their

communication with teachers. These attitudes also play an important role in students' academic development as well as in their social and emotional development, (Dahl, 2015). Parental attitude as determinant of interest towards learning, involve their contribution to children activities (home work, encouraging children to read), and promoting school and school based activities (such as attending parent teachers' association meetings, parent teachers conference and participating in fundraising activities), thus parents' attitude determines their children's success and commitment to academic achievement (Chinweuba-eze, 2021). Parental attitude has many positive effects on students other than academics, including increased motivation, self-esteem, and self-reliance, showing that parental involvement may lead to academic success regardless of economic background.

Parental involvement implies the participatory role of the parents in their children education at home, school and in their lives. It also involves parental expectation of school performances and a deliberate effort by the home to reinforce improved academic performance; general academic guidance and support. It can also be seen as students' perceptions of the degree to which their parents' influence their plan for secondary school to monitor their daily activities and school progress. According to Thuba, Kathuri and Mariene (2017), Parental involvement refers to parents utilizing their resources to offer the needed support to their children's academic accomplishments. The concept of parental involvement is viewed as involving various activities in which parents participate either at home or at school, and either directly or indirectly, so as to support the learning of their children, in terms of their formal home-school relations, in relation to which both teachers and parents collaborate in supporting the interests of the child(ren) involved. Parents that demonstrate high aspirations commits themselves to be more involved in the education of the children so as to meet up with their desired goals and target for the family.

This also indicates that when parents get involved in their children's education, this can be predictive of the future academic achievement of their children (Odeyemi, 2019).

Academic achievement on the other hand is the actual outcome or attainment a student gets after schooling. It is said to be "the amount of knowledge derived from learning in educational institutions" (Otani, 2017). Academic achievement is regarded in this study as the grades acquired after a written examination. Academic achievement is an important factor that determines students' future career, social life and status. Academically successful individuals are more likely to be employed, be more productive and therefore have a higher salary and become active and happier citizens (Regier, 2015). Therefore, for every country, increasing the academic achievement of students is a priority in education. Of all variables that have attracted researchers in this area of educational achievement, parental attitude and parental involvement seems to be leading other variables. This study therefore examined the relationship between parental attitude and parental involvement on students' interest and academic achievement in biology in Aguata education zone of Anambra State. The main purpose of the study therefore, is to determine the relationship between: parental attitude and parental involvement and secondary school Biology students' academic achievement in Aguata Education Zone.

Research Questions

The following research questions guided the study:

- i. What is the relationship between parental attitude and students' academic achievement in biology in Aguata Education Zone?
- ii. What is the relationship between parental involvement and students' academic achievement in biology in Aguata Education Zone?

Hypotheses

The following null hypotheses guided the study.

- i. There is no significant relationship between parental attitude and students' academic achievement in biology in Aguata Education Zone.
- ii. There is no significant relationship between parental involvement and students' academic achievement in biology in Aguata Education Zone.

Method

The research design for this study was correlational research design. A correlation research design is considered appropriate for the study. Correlational studies seek to examine the relationship between two or more quantitative variables in order to explain the result. It was aimed at determining the relationship between parental attitude and parental involvement on students' interest and academic achievement in biology in Aguata education zone in Anambra state, Nigeria. The study was carried out using 2,072 (926 males and 1,146 females) Senior Secondary II students from all the 52 public secondary schools in Aguata education zone of Anambra state.

The sample which was selected using disproportionate stratified random sampling technique consisted of 400 SS II students' studying biology from nine secondary schools in Aguata education zone. Two instruments titled Parental Attitude towards Biology Questionnaire (PATBQ) and Parental Involvement in Biology Questionnaire (PIBQ) were adapted and used to collect data. The annual cumulative results of the students' were also used. PATBQ and PIBQ consist of 20-items structured on a four point likert scale. The total items in the questionnaire are 40-items and it is structured on a four- point scale ranging from strongly agreed (SA), Agree (A), Disagree (D) to Strongly Disagree (SD). It is scored in such a way that higher scores show higher interests in the subject. The instruments were validated by three experts; two from Science Education

Department and one from the Department of Educational Foundation, both in faculty of Education, Nnamdi Azikiwe University, Awka, Anambra State of Nigeria. To determine the measure of internal consistency of the instruments (PATBQ and PIBQ) Cronbach's alpha method was adopted, reliability co-efficient of .969 and .981 were obtained after pilot testing.

The data collected were analyzed using Pearson product moment correlation coefficient (PPMC) and simple linear regression in the hypotheses testing, using SPSS Statistics 25.0 version. The Pearson Product Moment Correlation was used to answer all the research questions. The interpretation of the correlation coefficient was as follows: $r=.00$ no relationship, $r= \pm .01$ to ± 0.20 low relationship, $r=\pm .20$ to ± 0.50 slight to fair relationship, $r= \pm .50$ to ± 0.70 substantial relationship, $r= \pm .70$ to ± 0.99 high relationship and $r=\pm 1.00$ perfect relationship. Simple linear regression was used to test the null hypotheses at 0.05 level of significance in the hypotheses testing. Decision rule: reject a null hypotheses if the probability value (p-value) is less than or equal to 0.05 alpha level ($p \leq 0.05$), if otherwise do not reject.

Results and Discussion

Research Question 1. What is the relationship between parental attitude and students' academic achievement in biology in Aguata Education Zone?

Table 1: Table showing Pearson Correlation Coefficient between Parental Attitude and Students' Academic Achievement in Biology

Variables	N	Pearson correlation coefficient (r)	Sig.(1 tailed)
Parental Attitude and Students' Academic Achievement in Biology	400	0.252	0.000

Data presented in Table 1 shows the results of the correlation between parental attitude and students' academic achievement in biology. The correlation coefficient given as $r = 0.252$ indicates a low positive relationship between parental attitude towards biology and biology students' academic achievements in Aguata education zone.

Hypothesis 1. There is no significant relationship between parental attitude and students' academic achievement in biology in Aguata Education Zone.

Table 2. Simple Linear Regression on the relationship between parental attitude and students' academic achievement in biology in Aguata Education Zone.

Model	Sun of Square	Df	R ²	B	T	Mean Square	F	Sig	Decision
Regression	1698.503	1	.063	3.663	3.636	1698.503	13.420	.000	S
Residual	25060.492	198							
Total	26758.995	199							

Note. S = significant

Data presented in Table 2 depicts the linear regression to estimate the relationship between parental attitude and students' academic achievement in biology. The correlation coefficient given as $r = 0.252$ indicates a low positive relationship between parental attitude and students' academic achievement in biology in Aguata education zone. The R-square of 0.063 depict that parental attitude accounts for 6.3 percent variation in academic achievement to biology, $F = 13.420 > 1$ which is significant at 5%. At 5% level of significance, given that $p\text{-Value} = 0.000 < 0.05$, we conclude that the relationship between parental attitude towards biology and students' academic achievement in biology in Aguata Education Zone is statistically significant. In all, the null hypothesis is rejected. This means that there is a significant relationship between parental attitude and secondary school biology students' academic achievement in Aguata education zone. The

more positive parents' attitudes are towards their children, the more the academic achievement and vice versa.

Research question 2. What is the relationship between parental involvement and students' academic achievement in biology in Aguata Education Zone?

Table 3: Table showing Pearson Correlation Coefficient between Parental Involvement and students' academic achievement in biology.

Variable	N	Pearson Correlation Coefficient (r)	Sig.(1 tailed)
Parental involvement and students' academic achievement in biology	400	0.250	0.000

Data presented in Table 3 shows the results of the correlation between parental involvement and students' academic achievement in biology. The results show a low positive correlation between the dimensions of parental involvement and academic achievement. The overall data on parental involvement reveals a correlation ($r = 0.250$) with academic achievement in biology. This means that there is a low positive correlation between parental involvement and students' academic achievement in biology in Aguata education zone.

Hypothesis 2. There is no significant relationship between parental involvement and students' academic achievement in biology in Aguata Education Zone.

Table 4. Simple Linear Regression on the relationship between Parental Involvement and Biology Students' Academic Achievement in Aguata Education Zone.

Model	Sun of Square	Df	R ²	B	T	Mean Square	F	Sig	Decision
Regression	1677.603	1	.063	3.393	3.636	1677.603	13.243	.000	S
Residual	25081.492	198							
Total	26758.995	199							

Note. S = significant

Table 4 shows the data on the linear regression to estimate the relationship between parental involvement and students' academic achievement in biology. While the data show a significant relationship between parental involvement and students' academic achievement in biology, the $F = 13.243 > 1$ is significant at 5%; the R-square of 0.063 depicts that parental involvement accounts for 6.3 percent variation in academic achievement in biology. At 5% level of significance, given that $p\text{-Value} = 0.000 < 0.05$, this shows that the relationship between parental involvement and students' academic achievements in biology in Aguata Education Zone is statistically significant. In all, the null hypothesis is rejected. This means that there is a significant relationship between parental involvement and students' academic achievement in biology in Aguata education zone. The more involved parents' are in their children academics the more achievement and vice versa.

Discussion of Findings

The relationship between parental attitude and students' academic achievement in biology

The finding showed a low positive correlation between parental attitude and students' academic achievement in biology in Aguata education zone. The findings from this study show that parental attitude significantly influence students' academic achievement. This implies that the level of students' academic achievement increases by the increase of parent's attitude and vice versa. As observed by the researcher, this could be because of functional library, well equipped biology laboratory, available classroom for learning, students being actively involved in class activities, qualified teachers, and students being given opportunity for questioning during biology class. This finding agrees with that of Aniekan (2022) which revealed that parents who place high premium on the education of their children will do everything possible for the success of their

children, but parents who put up indifferent attitude to their children's education will reap poor academic harvest from their children.

The corresponding hypothesis showed that there is significant relationship between parental attitude and students' academic achievement in biology. This means that notwithstanding the family background which may be bad and unpleasant, yet the students can still be having good academic achievement. This could be that beyond parental attitude, if teachers are teaching well and students are reading well, the students will continue to have good academic achievement.

The relationship between parental involvement and students' academic achievement in biology

The findings revealed a low positive correlation between parental involvement and students' academic achievement in biology in Aguata education zone. This finding is in line with that of Egalite (2016) that there exists a significant relationship between parental involvement and students' academic achievement in science subjects including mathematics. Odeyemi (2023) conducted a study to examine the assessment of parental involvement on secondary school adolescents' academic performance in sciences in senior secondary schools, in Mushin Local Government Area of Lagos State. The result showed significant relationship between parental involvement and academic performance.

The corresponding hypothesis showed that there is significant relationship between parental involvement and students' academic achievement in biology. The findings present that parental involvement have more potentials to promote positive academic achievement of students in sciences, this was asserted by Sibley and Dearing (2016).

Conclusion

In conclusion, the relationship among parental attitude, parental involvement and academic achievement in biology in Aguata education zone is a critical area of study in education. Recognizing and addressing these relationships can lead to improved outcomes and well-being for secondary school students in biology, but a nuanced and holistic approach is required to do so effectively. Based on the findings of the study, it was concluded that a low positive relationship among parental attitude, parental involvement and academic achievement in biology is statistically significant.

Recommendation

1. Parental education and awareness programs for illiterate parents: schools and community organizations should organize workshops, seminars and awareness campaigns to educate parents on the importance of their involvement in their children education and its impact on academic success. Positive parental attitude and conducive home learning environment should be encouraged to motivate children to value education.
2. Strengthening school-parent communication: schools should establish regular and effective communication channels such as newsletters, mobile apps or parent-teacher meetings to keep parents informed and engaged in their children academic progress.
3. Promote home-based learning support: parents should be guided on how to support their children biology learning at home by providing educational materials, discussing science related topics and encouraging curiosity about natural world. Schools can provide resources such as biology newsletters or digital platforms for parents to assist their children.

4. Strengthen parent-teacher collaboration in science education: schools should create structured opportunities for parents to engage with biology teachers through regular meetings, workshops and open communication. This will ensure parents understand the importance of their involvement and are equipped with strategies to encourage their children's interest in biology.
5. Government and NGO support programs: the government and non- governmental organizations should implement policies and initiatives that promote parental involvement, such as offering free parenting classes and community support networks.
6. Encouraging a positive home learning environment: parents should be encouraged to create a supportive home environment by setting study routines, monitoring homework and motivating their children to value education.

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