



TEACHER-STUDENT RELATIONSHIP, AND BIOLOGY ACHIEVEMENT OF SENIOR SECONDARY SCHOOL STUDENTS IN IKOM EDUCATION ZONE OF CROSS RIVER STATE, NIGERIA.

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(Received 7 November 2024; Revision Accepted 5 December 2024)

ABSTRACT

The study was aimed at investigating teacher-student relationship, as related to Biology achievement of senior secondary school students in Ikom Education Zone of Cross River State, Nigeria. A hypothesis was formulated to direct the study. Literature review was done accordingly. Ex-post facto research design was adopted for the study. The population of the study consisted of all the 2346 senior secondary school two (SS2) students of 2018/2019 academic session offering Biology in the 93 public secondary schools in the Zone. The total number of public secondary schools in the zone was 93. The study adopted stratified and simple random sampling techniques. The sample consisted of 360 (SS2) biology students drawn from twelve public secondary schools using stratified and simple random sampling techniques. The research instruments were Teacher-Student Relationship Questionnaire (TSRQ) and Biology Achievement Test (BAT). The face and content validities were ensured in this study. Cronbach Alpha and Kuder Richardson formula 20 (KR-20) were the methods used for estimating reliability of instrument for the study. The reliability coefficients were 0.701 for teacher-student relationship, and 0.816 for BAT. Pearson Product Moment Correlation Coefficient was used to analyze the hypothesis at 358 degrees of freedom and 0.05 level of significance. The result indicated a significant relationship between teacher-student relationship, and academic achievement in Biology. Based on the findings, it was concluded that Teacher-student relationship in the class during teaching and learning processes influences students' academic achievement in biology. It was recommended among others that school administrators should promote a fair teacher-student relationship in the school.

KEYWORDS: Teacher-student relationship, Academic achievement, Biology

INTRODUCTION

There has been a continuous decline and underachievement in Biology in Nigeria schools over the years despite the increasing need of this subject for industrial development of the nation. Several factors have been associated with low academic achievement of students in Biology some of which include poor teacher quality, teaching method, social climate among others. This low achievement has become a major source of concern to parents, teachers, states and other educational stakeholders. Government and non-governmental organizations have tried to ensure that the teaching of Biology is promoted to instill the spirit of inquiry in the learner.

For example, laboratories in most schools have been equipped, periodic in-service training has also been organized for teachers to grow professionally, students are motivated through prizes for the best performing students in biology among others. Despite these laudable efforts to promote students' interest and academic performance in science generally and Biology in particular, the problem of poor academic performance still persists.

This present study is in an attempt away from the cognitive aspect of students' variables that may influence achievement in biology to investigating social factor of teacher-student relationship as possible cause of the deteriorating achievement of students in Biology.

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The teacher-student relationship is a fundamental aspect of education, characterized by the dynamic and interactions between an educator (the teacher) and a learner (the student) within an educational setting. This relationship encompasses various dimensions, including communication, trust, support, and guidance, and it plays a pivotal role in shaping students' learning experiences.

Effective communication is a central element of the teacher-student relationship (Smith & Johnson, 2018). Open and constructive communication allows students to ask questions, seek clarification, and actively engage in classroom discussions. It fosters an environment where students feel valued and heard, promoting their academic development.

Trust is another critical component of the teacher-student relationship (Brown, 2020). When students trust their teachers, they are more likely to take risks in their learning, share their thoughts and ideas, and seek guidance when needed. Trust is a two-way street, with teachers also needing to trust in their students' abilities and potential for growth.

Moreover, mutual respect is essential in cultivating a positive teacher-student relationship (Garcia & Rodriguez, 2019). Teachers should respect students' diverse backgrounds, perspectives, and individual needs, acknowledging and valuing their unique strengths and challenges. Simultaneously, students should respect teachers' expertise and authority in guiding their learning journey.

Teacher-student relationship encourages students' motivation and engagement in learning. A powerful weapon available to teachers who want to foster a favorable learning climate is a positive relationship with their students. Teachers who foster positive relationship with their students create more favorable classroom environment for learning and meet students' emotional and academic needs. Positive teacher-student relationship that is low conflict and a high degree of closeness and support contributes to their social skills and promote academic achievement (Oyedemi, 2018).

Students who experience positive relationship with their teachers are less likely to avoid school, appear more cooperative and more engaged in learning (Adeyeye and Yusuf 2012). Teacher-student relationships are believed to be necessary for effective teaching and learning to take place and yields good academic achievement in biology.

Achievement refers to performance outcomes in intellectual domains taught at school, college, and university (Simkins, 2008). Academic achievement refers to the level of success or performance that a student attains in their educational endeavors, typically measured by grades, standardized test scores, or other assessments. It reflects a student's ability to meet or exceed the academic expectations and objectives set by educational institutions.

Academic achievement is a multifaceted concept influenced by various factors and is a fundamental outcome in education (Hattie, 2009).

In the context of K-12 education, academic achievement is often measured through standardized tests that assess a student's knowledge and skills in subjects like mathematics, reading, and science (Hattie, 2009). These assessments provide a quantitative measure of a student's performance and are commonly used for educational accountability and to inform instructional decisions.

In higher education, academic achievement can be indicated by a student's GPA (Grade Point Average) based on their course grades (Kuh et al., 2008). A high GPA typically indicates that a student has successfully completed coursework and demonstrated a strong understanding of the material. Additionally, academic achievement in higher education may also be measured by research output, such as publications and presentations, particularly for graduate students and faculty (Graham, 2013). It's important to note that academic achievement can vary among individuals due to a wide range of factors, including personal motivation, study habits, access to resources, and the quality of instruction (Kuh et al., 2008). Educators and researchers often study these factors to better understand and support student success.

Science Teachers Association of Nigeria (STAN, 2012) sustained the case when it stated that academic achievement is the level of outcome of an individual in an examination, that is, how a person is able to show his or her abilities in an examination. STAN (2012) bulletin supported this argument when it reported that achievement is the level of attainment of a person in an examination, that is, how an individual is able to demonstrate his or her abilities in an examination. Jansen (2014) sees academic achievement as the process of developing the capacities and potentials of the individual student so as to train that individual to do well in a specific society or culture. From this point of view, education serves largely as individual development functions. The problem statement therefore is what relationship exists between teacher-student relationship and students' academic achievements in biology in Ikom education zone of cross river state Nigeria.

Theoretical Framework.

This work is anchored on attachment theory of John Bowlby (1958). This theory is concerned with human relationship and behaviour associated with attachment which is primarily the seeking of proximity to an attachment figure in stressful situations.

The theory presupposes that young children need to develop relationship with at least one primary caregiver for social and emotional development to occur normally. Infants become attached to adults who are sensitive and responsive in social interactions with them.

According to the theory, when adults provide emotional support in a predictable, consistent, and safe environment, it helps children become more self-reliant and learn better because they are sure that an adult will direct and help them. The theory proposes a motivational system that guides relational behaviour. The implication of this theory to this present study is that it will help teachers come to the awareness that their interaction and relationship with their students goes a long way to helping them actualize their educational goals.

Purpose of the study

1. The purpose of this study was to establish the relationship between teacher-student relationship and students' achievement in biology.

Research Question

1. To what extent does teacher-student relationship relate to students' achievement in biology?

Statement of Hypothesis

The null hypothesis states thus;
There is no significant difference in the relationship between teacher-student relationship and students' academic achievement in biology.

LITERATURE REVIEW

Teacher-student relationship and academic achievement in biology

Research has proven that the student-teacher relationship plays a significant role in students' success both in academics and social/emotional development. Knoell (2012) shared that students make learning a higher priority and perceive it as valuing. Also, Birch and Ladd (2018) reported that student-teacher relationship can influence students' future paths toward academic success and was positively linked with children's academic performance. Similarly, Miller (2010) found that student-teacher relationship plays an important role in helping to reduce the chances of future bad outcomes, such as dropping out of school.

Similarly, Ayodele, et. al. (2014) carried out a research to examine the impact of teacher-student relationships: examining student perceptions of teacher support and positive student outcomes in southwest Nigeria. A sample of 3489 undergraduates was randomly selected for the study. The instruments used for data collection were Big Five Inventory, Achievement Goals Scale, Academic Motivation Scale and Student-Instructor Relationship Scale. The data collected were analyzed using mean, standard deviation and multiple regression. The result of the analysis shows that there is a significant relationship between students-lecturer relationship and academic achievement. In the same line, Omodan and Tsotetsi (2018) carried out an investigation on student-teacher relationships as a panacea for students' academic

performance in Nigeria secondary schools: An attachment perspective. A descriptive survey research design was adopted and 300 respondents were selected from the sampled schools. Student-Teacher Relationship Questionnaire (STRQ) and the Students' Academic Performance Questionnaire (SAPQ) were used to collect data from respondents. Data collected were analyzed using descriptive and inferential statistics. The findings of this study revealed that there is a significant correlation between student-teacher relationships and academic performance of students in secondary schools.

Jonas (2015) carried out a study to determine the influence of teacher-student relationship on students' achievement in Delta State, by examining empirical evidence and by adopting a social psychological theory. The result of the study revealed that student-teacher relationship plays a vital role in their academic performance. Varga (2017) carried out a study to determine the effect of teacher-student relationships on the academic achievement of students in Pakistan. The result of this study shows a significant correlation between teacher-student relationship and academic achievement of student. Hamre and Pianta (2019) carried out a study to examine the effect of early teacher-child relationships and the trajectory of children's school outcomes through grade eight. The results of the findings revealed that teacher-child relationships have implications on the determinants of school success.

Contrary, Jigede (2018) also carried out a study to investigate the impact of teacher-student relationship and academic performance in biology in Osun state. The sample used for this study comprised 300 students. The instrument used for data collection was a self-design questionnaire. Data collected were analyzed using Pearson Product Moment Correlation. The findings of this study indicated that there is a strong relationship between teacher-student relationship and students' academic performance as students who are loved by their teachers tends to perform better. In the same vein, Onyeka (2013) sought to determine the impact of teacher-student relationships and academic achievement in social studies in Ebonyi State. The study adopted survey research design. Data collected were analyzed using descriptive statistics. The findings of this study indicated that students who develop strong positive relationship with their teacher learn better in the classroom.

However, Buka (2013) investigated how positive relationships promote academic achievement reported that positive teacher-student relationship improved students' academic achievement. In the same vein Koca (2016) carried out a study on motivation to learn and teacher-student relationship. The result of this study showed that positive teacher-student relationships increases student motivation to learn and leads to improved academic performance of students in school.

Additionally, Gablinske (2014) carried out a case study on student-teacher relationship and the effect on student learning in China. The study explored the affective domain of teacher student relationships using a single case study design. The findings of this study showed that there is a positive correlation between student-teacher relationship and student learning outcomes. In the same vein, Alnasser (2017) in a study to investigate the impact of students-teacher relationship on learning reported that there is a positive relationship between student-teacher relationship as it influences students learning.

In the same line Kosir and Tement (2013) carried out a study on teacher-student relationship and academic achievement: A cross-longitudinal study on three different age groups in Hillsdale. The study sample was 816 students. The analysis was done using the cross-lagged panel correlation technique. The result revealed a strong relationship between teacher acceptance, teacher personal support and academic achievement.

In line with this, Fraide and Ronnel (2014) in a study to determine the influence of teacher-student relationship and science achievement, administered a standardized achievement test to a sample of 1694 students. The result indicated that students who perceived higher levels of social support from parents, teachers and peers were more engaged and had higher achievement scores. In the same line, Lee (2017) carried out a study on the effects of teacher-student relationship and academic press on student engagement and academic performance. The sample size comprised 3748 fifteen-year-old 9th and 10th graders from 147 schools. The findings of this study revealed that supportive teacher-student relationships and academic press were significantly related to their academic performance.

Similarly, Bilesanmi (2019) sought to explore the effect of teacher-student relationship on academic performance of biology student in senior secondary school in Ogun state. The study adopted survey research design. A sample size of 400 students was used as the study sample. A well-structured questionnaire was used for data collection. Data collected was analyzed using descriptive statistics. The result of the study revealed a positive relationship between teacher-student relationship and their classroom learning. Khaleduzzaman (2017) carried out a study to examine the impact of teaching on teacher-student relationship at secondary level in Bangladesh. A survey research design was adopted for the study. Data collected was analyzed using analysis of variance (ANOVA). The result of the

ANOVA revealed that teacher-student relationship has a great impact on students' achievement in school. Consequently, Oyedeji (2018) worked on the influence of teacher student relationship: Its role in the academic achievement of students in Mathematics in Ogun State. A descriptive survey design was used. A sample of 346 students was drawn using simple random sampling technique from the total population of 826 students. The data collected was analyzed using analysis of variance. The findings of this study shows that students perform better when loved by their teachers.

Contrary, Kristic (2015) sought to find out how attachment in student-teacher relationship a factor of school achievement. A sample of 366 students was used as the sample of the study. The result of the study revealed that attachment to teacher affects students learning outcomes. In another study carried out by Bergeron, et. al. (2011) to investigate the impact of teacher-student relationships and academic achievement on students' intentions to dropout according to socio-economic status in the University of Montreal. The study sample was 2,360 French Canadian secondary school students. A questionnaire on teacher-student relationships and achievement motivation was administered to the participants. Data collected was analyzed using multiple regressions model. The result revealed that teacher-student relationships predict students' academic achievement.

Research Methodology

The research design adopted for the study was ex-post-facto research design. The population of the study comprised all the senior secondary school students (SS2) offering biology in the zone. Simple random sampling technique was used to select a sample of 360 students from 12 schools in Ikom education zone of Cross River State, Nigeria. Teacher-Student Relationship questionnaire (TSRQ) and Biology Achievement Test (BAT) was used for data collection. The questionnaire was divided into two parts; A&B. Section A covered demographic data of the respondents and section B was designed to guide responses. The biology achievement test (BAT) was a multiple choice test items comprising of 50 objective test questions. The reliability coefficient was 0.701 for (TSRQ) and 0.816 for (BAT). The questionnaire and achievement test were administered to the selected sample and their responses were coded and analyzed using Pearson Product Moment Correlation Coefficient.

Presentation of results

There is no significant difference in the relationship between teacher-student relationship and students' achievement in biology.

TABLE 1: Pearson product moment correlation coefficient of the relationship between teacher-student relationship and students' achievement in biology N = 360

Variables	N	\bar{x}	SD	r-cal.	Sig.
Teacher-student relationship	360	19.1806	2.8604	.171	.047
Students' achievement in biology	360	20.2806	2.0088		

Significant at 0.05, df = 358

The result in Table 1 indicated that teacher-student relationship had Mean=19.1806 and SD=2.8604 while students' achievement in biology had Mean=20.2806 and SD=2.0088 with an $r=.170$ and $P=.003$. The hypothesis was tested at 358 degrees of freedom and .05 level of significance. Since the P-value of .003 was less than the .05 level of significance, the null hypothesis was rejected. The conclusion was that teacher-student relationship significantly relate to students' academic achievements in biology.

DISCUSSION OF FINDINGS

The finding indicated that teacher-student relationship significantly influence academic achievement in Biology. The finding is in consonance with the finding of Ayodele, et. al. (2014) who carried out research to examined the interrelationship among personality factors, academic emphasis and students-lecturers' relationship and academic achievement orientation of Nigerian undergraduates in southwest Nigeria. The result of the analysis shows that there is a significant relationship between students-lecturer relationship and academic achievement. In the same line, Omodan and Tsotetsi (2018) carried out an investigation on student-teacher relationships as a panacea for students' academic performance in Nigeria secondary schools: An attachment perspective. The finding of this study revealed that there is a significant correlation between student-teacher relationships and academic performance of students in secondary schools.

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Teacher-student relationship may bring about students' motivation and engagement in teaching and learning activities and also help decline their performance. One of the most important weapons a teacher needs to foster a conducive learning climate is a positive teacher relationship with the students. This is because such student will be willing to learn and as such improve academically. Improving students' relationship with teachers has both positive and long-lasting implications for students' academic and social development in biology and other subjects. Teachers who promote a positive relationship with their students create a more complimentary classroom environment for effective teaching and learning. Such an environment may meet students' emotional and academic needs.

CONCLUSION

Based on the findings, it was concluded that Teacher-student relationship in the class during teaching and learning processes influences students' academic achievement in biology.

RECOMMENDATIONS

The following recommendations were made based on the findings.

- i. School administrators should promote a fair teacher-student relationship in the. This can be made possible by organizing in-service training for teachers.
- ii. Teachers should also inculcate positive relationship with students as regards their study habits, this will foster good outcomes in their performance in class and beyond.

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