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**PERCEIVED INFLUENCE OF TEACHER INTERPERSONAL TEACHING
BEHAVIOUR ON THE ACADEMIC PERFORMANCE OF BIOLOGY STUDENT IN
ODEDA LOCAL GOVERNMENT AREA OF OGUN STATE**

Joy Abiola Onipede¹, Yetunde Felicia Ogungbesan² & Kudirat Ajoke Akinsola³
**^{1&3}Biology Department, School of Secondary Education (Science), Federal College of
Education, Abeokuta.**

**²Integrated Science Department, School of Secondary Education (Science), Federal
College of Education, Abeokuta.**

Correspondence: joyonipede@yahoo.com/+2348060155009

Abstract

The study examined the perception of teacher interpersonal teaching behaviour influence on the academic performance of biology students in Odeda Local Government Area of Ogun State. This research utilized the descriptive survey methodology. To accomplish this objective, three research questions were formulated, alongside the establishment of two hypotheses. The study comprised a sample size of two hundred and fifty (250) participants, selected through the utilization of a multi-stage sampling technique. The instrument employed for data collection in the study was a self-designed questionnaire entitled “Students' Perceived Influence of Teachers' Interpersonal Teaching Behaviour Rating”. The instrument validity and reliability were done and a reliability coefficient of 0.71 was obtained. Data collected were subjected to analysis using descriptive statistics, Pearson Moment correlation coefficient and independent sample t-test. The results showed that students perceived their biology teachers had strong interpersonal teaching behaviour, which influenced their learning experience. Findings further revealed that interpersonal connections between teachers and students significantly influenced the academic performance of Biology students ($B=2.51$, $\beta= 0.341$, $t=5.20$; $p<0.05$). Similarly, findings revealed that female students had positive perception towards their teachers' interpersonal teaching behaviour than male students. The correlation between teacher

interpersonal teaching behaviour and academic performance of students and strength of prediction is shown by $p=.000$, showing a highly significant positive prediction. According to the findings presented in the study, the recommendation was made that the Government and other educational stakeholders should provide a medium of assisting teachers to improve their interpersonal teaching behaviour through various interactions in the school environment.

Keywords: *Perception, Teachers, Interpersonal, Behaviour, Student, Performance*

Introduction

Teachers' positive behaviour not only creates a vibrant classroom environment but also addresses students' requirements for emotional and interpersonal support (Wang *et al.*, 2023). Teachers, due to their knowledge and expertise in establishing a strong connection with their students, are considered one of the primary influencers in shaping the students' growth and progression (Ożańska-Ponikwia, 2017). As the nature of interactions between teachers and students is influenced by the teachers' behaviour to some extent, positive interpersonal behaviour can create an environment that is advantageous to students' advancement (Coterón *et al.*, 2020). Alzeebaree and Zebari (2021) found that supportive teachers who provide stimulating learning environments and inspire students to learn are key components of good teaching. Furthermore, it is commonly acknowledged that in school environments, students develop relationships with teachers and peers that support their personal, emotional, intellectual, and social development (Berliner & Calfee, 2013; Anderson and Graham, 2016; Heatly and Votruba-Drzal, 2017; Pakarinen *et al.*, 2018). The environment within the classroom plays a critical role in fostering the well-being of students; thus, it must cultivate a secure, all-encompassing, modest, and nurturing atmosphere (Schonert-Reichl, 2017). In the educational setting, students engage in questioning and responding to enhance the learning experience and through this interaction, grow physically, intellectually, and emotionally (Obiekwe and Uwaezuoke, 2021). Greater learning is facilitated by stronger interactions between students and their peers and teachers (Obiekwe and Uwaezuoke, 2021).

In the absence of strong interpersonal interactions, communication failures between teachers and students may lead to poor academic accomplishment (Cavazos, 2013). Interpersonal teaching behaviour is a broad concept that encompasses a variety of activities, including

controlling the classroom environment, encouraging positive relationships, communicating, providing emotional support, and adapting lesson plans to satisfy students' varying needs (Majid, 2017). A supportive and beneficial teacher-student relationship can benefit students and enhance the learning experience overall. The broad term "interpersonal teaching behaviour" encompasses a wide range of behaviours, such as managing classroom dynamics, fostering positive relationships, communicating, offering emotional support, and modifying instructional strategies to accommodate different student populations. Students' academic and personal development can be supported and the learning process itself can be improved when teachers and students have a friendly and encouraging relationship.

The low academic achievement in the Nigerian educational system has become worrying. To date, individuals concerned with biology education have not specifically connected the academic success of biology students to the interpersonal dynamics of their teachers. Due to the inadequate correlation between academic achievement and teacher-interpersonal relationships, it is impossible to fully comprehend the learning and academic accomplishment process (Petiot and Desbiens, 2022). To motivate biology students to learn and thrive, a biology teacher needs to have a wide range of teaching strategies and solid interpersonal skills. Empirical research has provided valuable insights into the impact of interpersonal actions of teachers on students' learning outcomes (Abbas *et al.*, 2020).

Most studies have focused on this approach when examining the effects of teachers' regulating and supportive behaviour on students' learning (Gan *et al.*, 2021). Several studies have demonstrated that the supportive actions perceived by teachers have a beneficial influence on students' motivation, positive emotions, behavioural engagement, physical activity, and various educational achievements (She and Fisher, 2002; Emeljanovas *et al.*, 2020; Van Doren *et al.*, 2021).

In biology classrooms, students are more likely to succeed when there is a good rapport between the teacher and them, clear communication, motivational strategies, and effective classroom management (Cakir and İskar, 2015). Creating a close relationship with students is one way that educators may boost motivation and engagement. Students are more likely to be motivated to learn biology when they receive connection and support from their teachers (Petiot & Desbiens, 2022). Students' attention may be piqued by biology teachers who radiate passion and excitement for the subject. A positive teacher's interpersonal teaching behaviour is

essential to comprehend complex biological processes. Researchers have looked at the complex and multifaceted effects of teachers' interpersonal teaching behaviour on students' performance within the fields of educational psychology and related sciences. The interpersonal teaching behaviour of biology teachers can affect students' performance in several ways. However, there is a dearth of research on how biology students' academic performance is affected by the interpersonal teaching behaviour of their teachers. Finding out how secondary school biology students in the study area perceive the importance of their teachers' interpersonal behaviour was the aim of this study.

Objectives of the study

- i. Examine student's perception of teachers' interpersonal teaching behaviour.
- ii. Examine students' perceptions of teachers' interpersonal teaching behaviour influences on the learning experience.
- iii. Examine the influence of interpersonal relationships between teacher and student on the academic performance of learners

Research Questions

1. What are the student's perceptions of teacher interpersonal teaching behaviour?
2. How do students view the impact of teachers' interpersonal teaching behaviours on the educational process?
3. What is the influence of interpersonal relationships between teacher-student on the academic performance of Biology students?

Hypotheses

H₀₁: There is no significant correlation between students' perceptions of their teacher's interpersonal behaviour and their academic performance in Biology.

H₀₂: There is no significant difference between male and female students' perceptions towards their teachers' interpersonal teaching behaviour.

Methodology

This study adopted the descriptive survey research design. Given that this study entails gathering a sizable amount of data at one time, it was judged appropriate. Students from Senior

Secondary School II (SSS II) in Ogun State's Odeda Local Government Area made up the study population. The sample was two hundred and fifty (250) participants using multi-stage sampling techniques. Proportionate sampling was used to select secondary schools that participated in the study. Students who participated in the study were selected using simple random sampling. A self-structured questionnaire titled "Students' Perceived Influence of Teachers' Interpersonal Teaching Behaviour Rating Scale" designed by the researcher was used to elicit the information. The instrument comprised three sections: Section A contained the personal data of the respondents such as Gender, Age, and School type. Section B elicited responses on students' perceptions of teachers' interpersonal teaching behaviour. Section C elicited information on the students' perceptions of how teachers' interpersonal teaching behaviour influences their learning experience and performance. The items were structured on a four-point Likert Scale of Strongly Agree, Agree, Disagree and Strongly Disagree. A weighted mean of 2.50 and above was considered as a level of agreement on the items, while a weighted mean of 2.49 and below was considered as disagreement in respect of the scales. Mark sheets were used to collect information on academic achievement in Biology.

The research instrument was tested for face and content validity to remove ambiguity. Twenty-five students who did not belong to the main sample but had similar features to the sample were used for the instrument pilot testing. To assess the instrument's reliability, Cronbach's Alpha was employed. A reliability coefficient of 0.71 was obtained. Questionnaire administration was done by the researcher with the help of the Vice-principal academic of each selected school. After the administration of the instrument, it was collected for analysis. Statistical Packaging for Social Sciences (SPSS, 20.0 version) was used to evaluate the data collected. Descriptive and inferential statistics were employed to answer the research questions. Mean scores more than 2.50 were deemed to agree, while values below 2.50 were deemed to be in disagreement. The hypothesis was tested using the t-test with Pearson Product Moment Corrections at the 0.05 level of significance.

Results

Table 1: Demographic information of the Respondents

Variables	Frequency	Percentage (%)
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Gender		
Male	118	47.2
Female	132	52.8
Age		
13-15 years	164	65.6
16-18 year	71	28.4
19 years & Above	15	6.0
School Type		
Private	148	59.2
Public	102	40.8

The gender analysis of the respondents revealed that 132 of them were female representing 52.8% while male was 118 representing 47.2% of the respondents. By implication, females were more in number. Also, the table further shows the distribution of respondents based on their age. 65.6% of the respondents were between the ages of 13-15 years, and 28.4% fell between the ages of 16-18 years. On the other hand, just 6% of the respondents are above 19 years of age.

Research Question One: What are the students' perceptions of teacher interpersonal teaching behaviour.

Table 2: Descriptive of student's perceptions of teacher interpersonal teaching behaviour

Items	SA	A	D	SD	Mean	SD
1 Our Biology teacher is approachable and easy to talk to and I feel comfortable asking questions and seeking help	141 (56.4%)	97 (38.8%)	8 (3.2%)	4 (1.6%)	3.50	.642
2 The teacher communicates respectfully with all students	123 (49.2%)	113 (45.2%)	11 (4.4%)	3 (1.2%)	3.42	.637

3	My teacher listens attentively to student questions and students' opinions are heard and considered	102 (40.8%)	119 (47.6%)	25 (10%)	4 (1.6%)	3.28	.706
4	Encourages and motivate students to participate and share their thought in class discussions.	109 (43.6%)	109 (43.6%)	23 (9.2%)	9 (3.6%)	3.27	.775
5	Treats all students fairly and consistently	106 (42.4%)	106 (42.4%)	31 (12.4%)	7 (2.8%)	3.24	.776
6	Creates a caring and supportive atmosphere in the classroom	129 (51.6%)	93 (37.2%)	26 (10.4%)	2 (0.8%)	3.40	.705
7	Provides constructive and helpful feedback on my work and performance	101 (40.4%)	117 (46.8%)	31 (12.4%)	1 (0.4%)	3.27	.687
8	Feedback helps me understand how to improve my performance	110 (44%)	113 (45.2%)	22 (8.8%)	5 (2.0%)	3.31	.716
9	My teacher is accessible for additional help or clarification outside of class	89 (35.6%)	117 (46.8%)	33 (13.2%)	11 (4.4%)	3.14	.805
10	The teacher handles conflicts or disagreements in a fair and constructive manner	111 (44.4%)	97 (38.8%)	23 (9.2%)	19 (7.6%)	3.20	.896

Weighted Mean =3.30

The results (table 2) above show biology student's perceptions of teacher interpersonal teaching behaviour. Through the data, it seemed that the students thought their biology teachers had excellent interpersonal teaching skills. The biology teacher is approachable and easy to talk to and we feel comfortable asking questions and seeking help with a mean of 3.50. Also, students perceived that their teachers communicated respectfully with all the students (3.42). The mean of 3.24 was reported that the teachers listen attentively to students' questions;

students' opinions are heard and considered. The students further reported a mean of 3.27 indicating that the teachers encourage and motivate students to participate and share their thought in class discussions. In addition, most of the respondents strongly conclude that the teacher creates a caring and supportive atmosphere in the classroom and provides constructive and helpful feedback on their work and performance having a mean value of 3.40 and 3.27 respectively. More importantly, the students reported that the feedback helps them understand how to improve their performance with a mean of 3.31. My teacher is accessible for additional help or clarification outside of class and the teacher handles conflicts or disagreements fairly and constructively. The ratings indicate that the interpersonal teaching behavior of educators elicits confidence and trust, establishes structure within the classroom environment, takes the lead, coordinates, supports, and demonstrates interest in the students. Hence, it can be deduced from the result that had a positive perception of their biology teachers' interpersonal teaching behaviour in secondary schools.

Research Question Two: How do students view the impact of teachers' interpersonal teaching behaviours on the educational process?

Table 3: Descriptive student's perceptions of teachers interpersonal teaching behaviour influence on educational process.

Items	SA	A	D	SD	Mean	SD
1 The teacher's interpersonal teaching behaviour motivates me to actively engage in learning	113 (45.2%)	104 (41.6%)	21 (8.4%)	12 (4.8%)	3.27	.810
2 I feel inspired to do my best in Biology class	109 (43.6%)	120 (48%)	19 (7.6%)	2 (0.8%)	3.34	.654
3 The teacher's approach to teaching makes me more interested in the subject	123 (49.2%)	95 (38%)	30 (12%)	2 (0.8%)	3.36	.721
4 The teachers' teaching style enhances my understanding of the materials	122 (48.8%)	102 (40.8%)	20 (8%)	6 (2.4%)	3.36	.732
5 The teacher's interactions make me feel a sense of belonging in the classroom	104 (41.6%)	109 (43.6%)	33 (13.2%)	4 (1.6%)	3.25	.742
6 The teacher's interpersonal teaching behavior positively	83 (33.2%)	138 (55.2%)	23 (9.2%)	6 (2.4%)	3.19	.696

	influences my attitude toward school						
7	Interactions with teachers help me apply knowledge to real-life situations	99 (39.6%)	104 (41.6%)	36 (14.4%)	11 (4.4%)	3.16	.832
8	My intrinsic motivation is increased through my teachers' interpersonal teaching behaviour	97 (38.8%)	106 (42.4%)	37 (14.8%)	10 (4%)	3.16	.820
9	The teacher's influences prepared me for future learning experiences	84 (33.6%)	123 (49.2%)	27 (10.8%)	16 (6.4%)	3.10	.832
10	The teacher's interpersonal teaching behaviour has a positive impact on my overall academic growth and performance	81 (32.4%)	119 (47.6%)	36 (14.4%)	14 (5.6%)	3.07	.831

Weighted Mean = 3.23

Results in Table 3 reveal the students' perceptions of teachers' interpersonal teaching behaviour influence on students' learning experience and academic performance. The students reported that the teacher's interpersonal teaching behaviour motivates them to actively engage in learning with a mean value of 3.27. The mean of 3.34 suggested that students feel inspired to do their best in Biology class. The teacher's approach to teaching makes them more interested in the subject and the teaching style enhances their understanding of the biological concepts with a mean of 3.36 respectively. the interactions initiated by the teacher generated a feeling of inclusivity among the students within the classroom, as indicated by a mean value of 3.25. In addition, the students reported that interactions with teachers help them apply knowledge to real-life situations and that intrinsic motivation is increased through their teachers' interpersonal teaching behaviour (3.16). More importantly, it was reported that the teacher's interpersonal behaviour influence prepared them for future learning experiences and had a positive impact on their overall academic growth and performance with a mean of 3.10

and 3.07 respectively. Typically, the findings presented rely on the weighted mean of 3.23 students' perceptions regarding the impact of teachers' interpersonal teaching behaviour on the learning process and academic performance in biology.

Research Question Three: What is the influence of the interpersonal relationship between teacher and student on the academic performance of Biology students?

Table 4: Regression and Pearson Correlation between Students' Perceptions of Teachers' Interpersonal Behaviour and Academic Performance in Biology

Model	Variable	B	Std. Error	β	T	P
Regression	Influence of Interpersonal Relationships	2.51	0.17	0.341	5.20	0.000
Pearson Correlation	Students' Perception TIB	Correlational Coefficient		0.661**		
		Sig. (2-tailed)		0.000		
		N		240		

The result presented in Table 4 (regression model) indicates that the influence of interpersonal relationships between teachers and students significantly predicts the academic performance of Biology students. It was observed that the influence of teachers' interpersonal relationships positively predictive students' academic performance in Biology (B=2.51, β = 0.341, t=5.20 and p=.000). The beta coefficient (B) =2.52 implies that for every unit increase in teachers' interpersonal relationship, academic performance increases by 2.52. The standardized beta β = .341 shows a moderate correlation between teachers' interpersonal relationships and the academic performance of students. The strength of prediction is shown by p=.000, showing a

highly significant positive prediction. Thus, there was a significant correlation between teachers' interpersonal relationships and students' academic performance in biology.

Test of Hypotheses

H₀₁: There is no significant correlation between students' perceptions of their teacher's interpersonal behaviour and their academic performance in Biology.

The result in Table 4 (Pearson Correlation Model) demonstrates the relationship between students' perceptions of their teachers' interpersonal behaviour and academic performance in biology. The results showed that there is a strong positive correlation ($r = 0.661$) between teachers' interpersonal behaviour and students' academic performance in biology. Furthermore, both variables exhibit statistical significance at $p < 0.05$ and $p = 0.000$. This shows that students' view of their teachers' interpersonal behaviour also exhibits high academic performance. Hence, the null hypothesis was rejected, and the alternate hypothesis was upheld. This indicates a positive correlation between teachers' interpersonal behaviour and students' academic performance in biology.

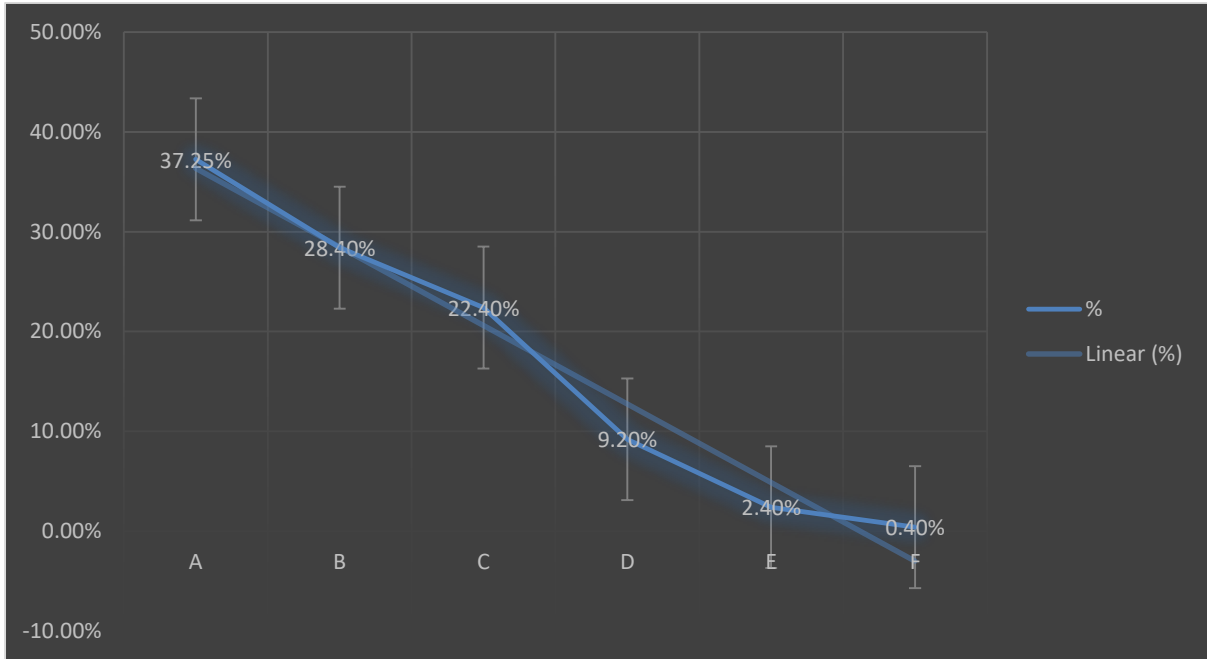


Figure 1: Students' Grades in Biology

The figure above reveals the academic grade level of students in Biology. It was observed from the figure that 37.25% performed excellently in biology by obtaining grade level A, 28.4% performed very well with grade level B and 22.4% performed at the credit level with grade C. This means most of the students performed well in Biology. However, 9.2% had grade level D and 2.4% had E indicating that they passed biology at D and E while 0.4% failed biology.

H₀₂: There is no significant difference between male and female students' perception towards their teachers' interpersonal teaching behaviour.

Table 5: Independent t-test showing students' gender and perceptions of their teachers' interpersonal teaching behaviour.

Gender	N	Mean	Std.D	df	t	Sig.	Remark
Male	118	31.051	4.710	248	4.046	.000	S
Female	132	33.356	4.246				

The results in table 6 reveals a significant difference between students' gender and perceptions of their teachers' interpersonal teaching behaviour. The results showed that female students had a mean score of 33.356 in teachers' interpersonal teaching behaviour, while male students had a mean score of 31.051. Hence, the hypothesis was therefore rejected. It could be concluded that female students had higher perceptions of their teachers' interpersonal teaching behaviour than their male counterparts.

Discussion

The results of research question one showed that students rated their biology teachers as having strong interpersonal teaching behaviours, and strongly reported that teachers created a caring and supportive environment in the classroom and gave positive and helpful feedback that positively impacted their academic performance in biology. This corroborates the findings of Coterón et al. (2020), that teacher-student interaction is influenced by the teachers' behaviour to some extent, positive interpersonal behaviour can create an environment that is advantageous to students' advancement. Similarly, Alzeebaree and Zebari (2021) found that supportive teachers who provide stimulating learning environments and inspire students to learn are key components of good teaching. Findings from research question two revealed that students' perceptions of teachers' interpersonal teaching behaviour influenced their learning experience. This result is in line with the findings of Tian & Shen (2023) that teachers' interpersonal behaviour had a positive effect on the learning emotions of students, and perceiving teachers' supportive behaviour can trigger students' positive learning emotions. This could also motivate the students to actively engage in learning. This supports Petiot and Desbiens' (2022) findings that students' emotional experiences and their perceptions of teachers' interpersonal behaviour helped in improving their socio-cognitive skills. According to Liu et al. (2017), students' perception of autonomy-supportive teaching behaviours had a major impact on their subjective vitality, which was mediated by need satisfaction and reflected psychological well-being. The findings from research question three that teacher-student interpersonal relationships had a positive influence on the student's academic performance in biology corroborate the study of Aldridge et al. (2000), which established that favourable teacher-student interactions and a conducive learning atmosphere enhance academic performance

among students in science classrooms. A significant correlation between teacher-student interpersonal behaviour and academic performance was also in agreement with the findings of Telli et al. (2009); den Brok et al. (2010); Ekici (2022). The research hypothesis one, posited that a significant relationship does not exist between students' perceptions of their teachers' interpersonal teaching behaviour and their performance in Biology, was not supported. Findings revealed a significant relationship between students' perceptions of teacher interpersonal behaviour and academic performance in Biology. The findings outlined in the study align with the research by Maulana *et al.* (2012) and Abate-Demissie (2019), revealing various agreements and disagreements in the perceptions of students and teachers regarding teacher interpersonal behaviour. They revealed that teachers' interpersonal behaviour has a significant influence on students' academic performance.

The results of the second research hypothesis showed a significant difference in how students perceived their teachers' interpersonal teaching behaviour based on gender. The study indicated that female students exhibited greater perceptions of their teachers' interpersonal teaching behaviour compared to male students (Wubbels *et al.*, 2006).

Conclusion

The present investigation explored the perceived impact of teachers' interpersonal teaching behaviour on the academic achievement of biology students in Secondary Schools within Odeda Local Government Area, Ogun State. In sum, it can be concluded that all the objectives of the study were successfully addressed. Based on the findings, it was ascertained that students expressed a positive perception towards the interpersonal teaching behaviour demonstrated by their biology teachers. Students' perception of teacher interpersonal teaching behaviour has been found to have a significant impact on their learning experience and academic performance in biology. Results also indicated that a notable disparity exists in students' perceptions of their teacher's interpersonal behaviour based on gender. The research identified a robust association between teacher interpersonal teaching behaviour and academic performance of students in biology.

Recommendations

Based on the findings of this study, the subsequent suggestions are posited herein:

- i. Government and other educational stakeholders should provide the medium of assisting teachers to improve their interpersonal teaching behaviour through various interactions in the school environment.
- ii. Teachers should improve their interpersonal behaviour towards male students.

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