

Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

Assessment of Parental Support, Supervision and Encouragement on Performance in Biology among Secondary School Students in Sabon Gari, Kaduna State, Nigeria

SALISU, Zainab Ibrahim¹

zeesalis@gmail.com

08037065895,

OMONIWA, Oluwatope Olubunmi¹

alakeoluwatope@gmail.com

08038087252

WILLIAMS, Felicia¹

¹Department of Biology, Federal University of Education, Zaria Kaduna State, Nigeria

Abstract

The study was on Investigation on Parental Support, Supervision and Encouragement Influencing Students' Performance in Biology among Secondary Schools in Zaria. Three research objectives, three research questions, and three hypotheses guided the study. Correlational survey research design was adopted for the study. The sample for the study comprised of three hundred and seventeen (317) biology students drawn from the population of study using simple random sampling technique. The instruments for data collection in this study was a questionnaire and analyzed using mean, standard deviation, PPMC and t-test. The results revealed that there is a positive and statistically significant correlation between parental support and students' academic performance in Biology ($r = 0.32$, $p < 0.001$, $df = 315$), a statistically significant difference in academic performance in Biology between students who receive high parental encouragement and those with low parental encouragement ($p = 0.000 < 0.05$) and there is a statistically significant difference between male and female students in parental support, supervision, and encouragement towards academic performance in Biology ($p = 0.032 < 0.05$). This study recommends that workshops and seminars can be organized to educate parents on effective ways to provide academic support, particularly in challenging subjects like Biology, amongst others.

Keywords: Parental Support, Parental Supervision, Parental Encouragement, Academic Performance

Introduction

Parental involvement refers to the participation of parents in their children's educational processes and has been widely recognized as a vital contributor to academic success (Epstein, 2018). It is multifaceted, including parental support, supervision, and encouragement. Each of these dimensions plays a distinct role in shaping students' learning experiences, attitudes, and outcomes. Research has consistently shown that students whose parents are actively involved in their education tend to perform better academically, have improved attitudes toward learning, and exhibit higher levels of motivation and self-efficacy (Fan & Chen, 2020). Parental support encompasses the tangible and intangible resources parents provide to facilitate learning. These may include purchasing textbooks, providing internet access, creating quiet study environments, or assisting with assignments. In science subjects like Biology, parental support may also extend to providing materials for practicals, funding excursions, or encouraging participation in science fairs (Arowolo & Oduwole, 2021). When students feel adequately supported, they are more likely to engage with academic content, overcome challenges, and strive for academic excellence. Parental supervision, on the other hand, refers to the oversight, parents exercise over their children's academic activities. This includes monitoring school attendance, checking homework, reviewing test scores, and keeping in touch with teachers. Supervision helps keep students accountable, encourages discipline, and ensures that they adhere to routines that promote academic success (Yusuf & Adigun, 2020). In Biology, which combines theoretical knowledge with practical applications, consistent parental supervision can help ensure that students prepare adequately for both classwork and laboratory sessions. Parental encouragement involves the emotional and psychological reinforcement parents give their children. Encouragement may come in the form of verbal praise, motivational talks, expressions of high academic expectations, and emotional support during academic challenges. When students receive consistent encouragement from their parents, they often develop a positive self-concept, resilience, and a belief in their ability to succeed academically (Okon & Akpan, 2018). Encouragement is particularly important in subjects like Biology, which require sustained effort, concentration, and confidence to grasp complex concepts.

Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

Statement of the Problem

Despite the acknowledged significance of Biology within the secondary school curriculum and its critical role as a foundational subject for numerous science-oriented professions, student performance in Biology remains a major concern in Nigeria (WAEC, 2020; NECO, 2021). National examination results consistently show that a large proportion of students score below the credit level required for progression into tertiary science-related programs (Udu, Eze & Eya, 2022). This persistent trend of underachievement has sparked concerns among educators, parents, and education policymakers, prompting investigations into contributing factors. While previous researches have explored various determinants of academic performance, such as teaching methods, curriculum content, teacher quality, and school resources (Okoye & Okecha, 2021; Adebayo & Lawal, 2023). The role of parental involvement, especially in the context of Biology education, remains relatively underexplored in northern Nigeria. Specifically, dimensions such as parental support, supervision, and encouragement have not been sufficiently examined within the unique socio-cultural context of Sabon Gari Local Government Area, Kaduna State, where socioeconomic disparities and cultural expectations may influence the degree and nature of parental engagement (Aliyu & Salihu, 2020). This study therefore seeks to address these critical gaps by examining the relationship between specific components of parental involvement, namely support, supervision, encouragement, and students' academic performance in Biology at the senior secondary level in Sabon Gari Local Government Area. The findings aim to provide insight into effective strategies for enhancing parental participation in science education, particularly in socioeconomically diverse and culturally nuanced settings like northern Nigeria.

Objectives of the Study

The objectives of the study are to:

1. Determine the relationship between parental support and students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State.
2. Examine the effect of parental encouragement on students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State.
3. Investigate gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State.

Research Questions

This study seeks to answer the following research questions:

1. What is the relationship between parental support and students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?
2. What is the effect of parental encouragement on students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?
3. Are there gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?

Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

- H₀₁: There is no significant relationship between parental support and students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State.
- H₀₂: There is no significant effect of parental encouragement on students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria.
- H₀₃: There are no significant gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria.

Theoretical Framework

Epstein's Framework of Six Types of Involvement (Epstein, 2001) provides a comprehensive model for understanding how parents engage with their children's education. The framework identifies six types of parental involvement: parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. According to Epstein (2001), effective parental involvement requires schools and families to work collaboratively to support student learning. The framework suggests that when parents provide appropriate home environments for learning (parenting), maintain effective two-way communication with schools (communicating), and support learning activities at home



Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

(learning at home), students demonstrate improved academic performance, attitudes, and behaviors. In the context of Biology education, Epstein's framework suggests that parents can support learning through providing resources for biology projects, supervising study habits, communicating with biology teachers about student progress, and encouraging interest in biological sciences. Studies applying this framework have consistently found positive relationships between various types of parental involvement and academic achievement across different subjects (Henderson & Mapp, 2002).

Methodology

This study employed a survey research design. This design was appropriate because the study aimed to investigate relationships between variables (parental support, supervision, encouragement, and academic performance in Biology) without manipulating any independent variables. The correlational approach allowed for examination of the direction and strength of relationships between these variables within their natural setting. The survey component of the design enabled systematic collection of data from a large number of participants using standardized instruments, facilitating quantitative analysis of relationships between variables across the target population. The target population for this study comprised all senior secondary school (SS II) Biology students in public schools within Sabon Gari Local Government Area of Kaduna State. According to data from the Kaduna State Ministry of Education (2023/2024 academic session), there were approximately 8 senior secondary schools in the Local Government Area, with an estimated total of 1,800 senior secondary students taking Biology as a subject. The researcher sampled three hundred and seventeen (317) from the total population as the sample size. The sample size was chosen in line with Krejcie and Morgan's (1970) Table for determining sample size. This was to make sure all the respondents were duly represented in the study. Simple random sampling was used to select the targeted number of respondents to eliminate bias. The primary instrument for data collection was a structured questionnaire titled "Parental Involvement and Biology Performance Questionnaire (PIBPQ)." The reliability of the questionnaire was established using the Cronbach's Alpha reliability method. A pilot test was conducted on a small sample of 20 students from a neighboring Local Government Area that was not included in the main study. The responses were analyzed using SPSS to calculate the internal consistency of the instrument. A reliability coefficient of 0.70 or higher was considered acceptable. The data collected from the questionnaire were analyzed using descriptive and inferential statistical methods such as frequencies, means, and standard deviations as well as Pearson Product Moment Correlation (PPMC) and independent t-tests at the 0.05 level of significance via the Statistical Package for the Social Sciences (SPSS) version 23.

Presentation of Results

Research Question One: What is the relationship between parental support and students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?

Table 1: The relationship between parental support and students' academic performance

Academic Performance Group	N	Mean Parental Support	SD	Mean Difference
High Performers	160	3.45	0.38	0.35
Low Performers	157	3.10	0.42	

The mean parental support score for high academic performers was 3.45 (SD = 0.38), while for low performers it was 3.10 (SD = 0.42). The mean difference of 0.35 suggests that students with higher academic performance in Biology perceived greater parental support compared to those with lower performance.

Research Question Two: What is the effect of parental encouragement on students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?

Table 2: Effect of parental encouragement on students' academic performance in Biology

S/N	Questions	SA	A	SD	D	UN	Mean	Std. Dev.
1	Parents motivate you to perform well in Biology	170	100	30	17	0	3.33	0.85
2	Parents praise you when you perform well in Biology	160	110	30	17	0	3.30	0.86
3	Parents provide career guidance in Biology-related fields	140	120	37	20	0	3.20	0.89
4	Parents encourage participation in Biology-related activities outside school	130	110	47	30	0	3.07	0.95
5	Parents express high expectations regarding Biology performance	180	90	30	17	0	3.37	0.82



Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

Cumulative Mean	3.25	0.11
-----------------	------	------

The analysis of parental encouragement items in Table 2 indicates that students generally perceive a moderate to high level of encouragement from their parents regarding their academic performance in Biology. The cumulative mean score of 3.25 (SD = 0.11) suggests that on average, students agreed on receiving encouragement across the items. Specifically, the highest mean score (3.37) was for parents expressing high expectations regarding Biology performance, while the lowest mean (3.07) was for parents encouraging participation in Biology-related activities outside school. These findings imply that parental encouragement plays a positive role in motivating students in Biology, supporting the investigation of its effect on academic performance in this study.

Research Question Three: Are there gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State?

Table 3: Gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology

Gender	N	Mean (M)	SD	Mean Diff.
Male	160	3.21	0.42	-0.14
Female	157	3.35	0.39	

The results show that female students (M = 3.35, SD = 0.39) had slightly higher average scores on parental support, supervision, and encouragement in relation to academic performance in Biology compared to male students (M = 3.21, SD = 0.42). The mean difference of -0.14 suggests that females perceive slightly more parental involvement than males, although the magnitude of the difference is relatively small.

Hypotheses Testing

H₀: There is no significant relationship between parental support and students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State.

Table 4: Correlation between Parental Support and Students' Academic Performance

Variable	r	df	p-value	Decision
Parental Support Vs academic performance	0.32	315	<0.001	Significant

The results in Table 4 show a positive and statistically significant correlation between parental support and students' academic performance in Biology ($r = 0.32, p < 0.001, df = 315$). This implies that increased parental support is associated with improved academic performance in Biology, leading to the rejection of the null hypothesis.

H₀₂: There is no significant effect of parental encouragement on students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria.

Table 5: Independent Samples t-test on the Effect of Parental Encouragement on Students' Academic Performance in Biology

Group	N	Mean	SD	t	df	p-value	Decision
High Encouragement	180	3.42	0.41	4.27	315	0.000	Significant
Low Encouragement	137	3.15	0.38				

The results in Table 5 reveal a statistically significant difference in academic performance in Biology between students who receive high parental encouragement (M = 3.42, SD = 0.41) and those with low parental encouragement (M = 3.15, SD = 0.38), $t(315) = 4.27, p = 0.000 < 0.05$. This indicates that higher levels of parental encouragement are associated with better academic performance in Biology, leading to the rejection of the null hypothesis.

H₀₃: There are no significant gender differences in how parental support, supervision, and encouragement influence students' academic performance in Biology in senior secondary schools in Sabon Gari Local Government Area, Zaria.

Table 6: Independent Samples t-test on Gender Differences in Parental Support, Supervision, and Encouragement



Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

Gender	N	Mean	SD	t	df	p-value	Decision
Male	160	3.21	0.42	-2.15	315	0.032	Significant
Female	157	3.35	0.39				

The result of the independent samples t-test shows a statistically significant difference between male and female students in parental support, supervision, and encouragement towards academic performance in Biology, $t(315) = -2.15, p = 0.032$. Female students ($M = 3.35, SD = 0.39$) reported higher levels than male students ($M = 3.21, SD = 0.42$). Therefore, hypothesis three is rejected.

Discussion of Findings

The positive and statistically significant correlation found between parental support and students' academic performance in Biology underscores the critical role parents play in enhancing their children's educational outcomes. Parental support provides students with necessary learning materials, emotional backing, and a conducive home environment, all of which contribute to better engagement and understanding of complex subjects like Biology (Jeynes, 2018; Wang & Sheikh-Khalil, 2019). Recent studies have consistently shown that students whose parents are actively involved in their academic activities tend to perform better in science subjects (Yıldırım & Oğuz, 2021; Lwin et al., 2020). In Nigeria, Oluwole et al. (2023) confirmed that parental support significantly boosts students' motivation and academic achievements in Biology. Lastly, the finding of a statistically significant difference between male and female students regarding parental support, supervision, and encouragement reflects ongoing gender dynamics in educational support. Gender differences in parental involvement have been reported worldwide, often influenced by cultural norms and expectations (Wang et al., 2019; Ma et al., 2020). Research indicates that female students frequently receive more academic supervision and emotional support from parents, which can translate into higher academic performance in science subjects (Gupta & Kaur, 2021). Conversely, male students may experience more academic independence but less direct parental involvement (Tan & Lim, 2022).

Conclusion

This study has highlighted the significant role that parental support, supervision, and encouragement play in influencing students' academic performance in Biology within senior secondary schools in Sabon Gari Local Government Area, Zaria, Kaduna State. The positive correlation between parental support and academic achievement confirms that active involvement of parents in their children's education creates a supportive learning environment that fosters understanding and engagement in complex scientific concepts. This finding reinforces the importance of considering the home environment and parental contributions when addressing academic challenges in Biology. Furthermore, the clear difference in academic outcomes between students who receive high levels of parental encouragement and those who do not underscores the motivational power that parental attitudes and behaviours exert on learners. Encouragement from parents not only enhances students' confidence but also promotes persistence and interest in the subject, which are crucial for success in Biology. The study thus affirms that parental encouragement is a key factor that educators and policymakers must consider when designing interventions to improve science education. The gender differences observed in parental support, supervision, and encouragement reveal ongoing disparities in how male and female students are supported academically. These differences may stem from cultural expectations and gender norms, which can shape parental behaviours and subsequently influence student performance. Addressing such gender-based discrepancies is essential to ensuring that both male and female students receive equitable support, which can ultimately improve academic outcomes across the board.

Recommendations

The following recommendations were made by the researcher:

1. Workshops and seminars can be organized to educate parents on effective ways to provide academic support, particularly in challenging subjects like Biology.
2. Educational stakeholders should encourage parents to provide balanced support and encouragement to both male and female students, thereby reducing gender disparities.
3. Policymakers should recognize parental involvement as a vital component of academic success and incorporate strategies to foster home-school partnerships within the Nigerian National Policy on Education.



Assessment of Parental Support ... Salisu, Z. I. Et. al., (2025)

References

- Adebayo, S. T., & Lawal, M. A. (2023). *Factors affecting student performance in Biology: A case study of selected public secondary schools*. Nigerian Journal of Science and Educational Research, 9(1), 55–66.
- Aliyu, H. A., & Salihu, M. A. (2020). *Socio-cultural barriers to parental involvement in secondary education in Northern Nigeria*. Journal of Educational Policy and Entrepreneurial Research, 7(4), 89–98.
- Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview Press.
- Epstein, J. L. (2018). *School, family, and community partnerships: Preparing educators and improving schools*. Routledge.
- Fan, W., & Chen, M. (2020). *Parental involvement and students' academic achievement: A meta-analysis*. Educational Psychology Review, 32(2), 219–246.
- Gupta, N., & Kaur, S. (2021). Gender differences in parental support and students' academic performance in science subjects: A cross-sectional study. *International Journal of Educational Research*, 105, 101715. <https://doi.org/10.1016/j.ijer.2020.101715>
- Henderson, A. T., & Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family, and community connections on student achievement*. Southwest Educational Development Laboratory.
- Jeynes, W. H. (2007). A meta-analysis: The relationship between parental involvement and secondary school students' academic achievement. *Educational Psychology Review*, 30(4), 439–464. <https://doi.org/10.1007/s10648-017-9416-9>
- Lwin, K. T., Suma, N., & Aung, T. T. (2020). Parental involvement and students' academic performance in science subjects: Evidence from Myanmar secondary schools. *Asia-Pacific Journal of Educational Research*, 6(1), 55-69.
- NECO. (2021). *Chief Examiners' Report on SSCE June/July Biology*. Minna, Nigeria.
- Okon, A. E., & Akpan, U. I. (2018). *Parental encouragement and student academic resilience in science subjects*. West African Journal of Education, 38(1), 92–100.
- Okoye, K. R., & Okecha, V. E. (2021). *The impact of instructional strategies on students' academic achievement in Biology*. African Journal of Science Education, 5(2), 44–57.
- Oluwole, T., Adeyemi, O., & Ajayi, B. (2023). Parental support and motivation as predictors of academic achievement in Biology among secondary school students in Nigeria. *Journal of Educational and Social Research*, 13(1), 50-59.
- Udu, A. A., Eze, M. A., & Eya, P. E. (2022). *Analysis of students' poor academic performance in science subjects in Nigerian secondary schools*. International Journal of Education and Evaluation, 8(1), 21–32.
- WAEC. (2020). *Chief Examiners' Report: SSCE Biology*. Lagos, Nigeria.
- Yusuf, A., & Adigun, J. T. (2020). *Parental supervision and academic discipline among secondary school students*. Journal of Educational Psychology and Counselling, 9(2), 44–53.