

## Perceived Social Support as a Correlate of Secondary School Students' Attitude to Biology in Federal Capital Territory (Fct) Abuja, Nigeria

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**Abstract:** The study examined perceived social support as a correlate of secondary school students' attitude to Biology in Federal Capital Territory (FCT) Abuja, Nigeria. Two research questions guided the study while two hypotheses were tested at 0.05 alpha level. A correlation survey design was adopted. The population of the study comprised 29,158 senior secondary school two (SS2) Biology students from the FCT, Abuja. From which a 2, 928 SS2 students offering Biology was drawn using proportionate sampling and stratified random sampling techniques. Students Social Support Questionnaire (SSSQ) adapted from "What is happening in the classroom questionnaire" (WIHICQ), by Cohen, Mermelstein, Kamarck, and Hoberman (1985) and Biology Students' Attitude Scale (BSAS) adapted from Students Attitude towards Biology (SAB) by Danilo (2019) were used as instruments for data collection. The instruments were validated by three experts from Faculty of Education Nnamdi Azikiwe University, Awka. The Cronbach alpha reliability coefficients of SSSQ and BSAS were found to be 0.79 and 0.81 respectively. The data were collected using SSSQ and BSAS with the help of the research assistants who were Biology teachers. Pearson product moment correlation  $r$  was used to answer the research questions and to test the hypotheses. The finding revealed that the relationship between secondary school students' perceived social support scores and attitude scores towards Biology is moderate and significant. Also, there is a low positive relationship between various dimensions of perceived social support scores and secondary school students' attitude scores in Biology but not significant. It was recommended that students' Biology teachers should monitor, changes in social support alongside the attitude of students to enable iterative refinement of interventions to sustain gains over time in Biology in secondary schools.

**Keywords:** *Biology, Social support, Attitude and Secondary school.*

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## Introduction

Biology is a branch of natural science that deals with the study of living organisms, structures, functions, evolution, distribution and interrelationships. It is the science that helps us understand animals, plants and even tiny organisms and how they stay alive. Omaka and Okigbo (2025) viewed Biology as the science of life or the study of living things. The authors further asserted that Biology covers all the life processes such as movement, respiration, nutrition, irritability, growth, excretion, ecological system and reproduction, which make it more important and useful to man. Ibeh and Okigbo (2024) also opined that the importance of Biology includes helping man in scientific research, development of new tools, exploration of new environments and environmental identification, such as ecology and techniques needed to improve the quality of lives. But in spite of all the importance of Biology to man, secondary school Biology students still experience weaknesses in the West African Examination Council (WAEC).

The WAEC Biology Chief Examiners' reports (2019–2023) consistently reveal recurring students' weaknesses: improper spelling of technical terms; weak explanations and misconceptions in genetics, ecology, evolution, and plant nutrients; unclear or missing diagram labeling, titles, and scales; poor diagram and graph drawing; incoherent sequencing and articulation of points; and difficulty interpreting questions. Across years, students This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license

struggle with conceptual clarity (e.g., hormone functions, photosynthesis, predator-prey dynamics, Punnett squares), accurate labelling of cellular structures, and differentiating related terms (somatic vs. reproductive cells; Schwann vs. Swann). Diagrams, labeling, and data presentation especially bar charts and ecosystems factors frequently lack precision. These deficiencies collectively contribute to subpar performance, underscoring the need for strengthened spelling discipline, structured reasoning, diagrammatic accuracy, and improved familiarity with core biological processes and terminology.

More so, numerous reasons have been discovered by researchers to be accountable for this low academic achievement of students in Biology. Some of the factors include but not limited to; poor teaching methods, poor usage of instructional materials in teaching and learning processes, abstract nature of several topics in Biology such as cell division, genetics, variation, evolution, etc, perceived social support, self-efficacy, cognitive development skills, motivation, gender and peer influence (Hassan et al., 2023, Kaur & Prajapati, 2022, Mbaegbu & Osuafor, 2023). For this study, social support was considered.

Social support encompasses the actual resources people receive from others, which could be in the form of emotional, instrumental, informational, and appraisal help. Abirin (2022) averred that social support refers to the experience of being valued,



respected, cared about and loved by others. Abubakar (2022) believed that social support is how individuals view family members, friends and others as available sources in providing social and psychological support during times of need. Social support, according to Apeh and Nteh (2021), is any resource that flows through and from social relationships. These relationships are based on social interactions and could be virtual, implied, imagined, real, momentary and or ongoing. From a health science perspective, social support is conceived as the available support for an individual through social ties with other people, groups or the community in general (Chih & Boqiang 2024). Again, the available support could be virtual, implied, imagined, real, transitory and or continuing.

There are many dimensions of social support, which include: emotional (love, affection, empathy), instrumental/tangible (concrete aid, financial assistance, services), informational (advice, guidance, information), and appraisal/esteem (validation, feedback, confirmation of worth). Emotional social support is the feeling that others care and understand, reducing stress and boosting well-being. It involves non-judgmental listening, validating feelings, and reassurance (Chen & Shao, 2019). The core elements of emotional social support are empathy, availability, and active engagement, which include comforting words, appropriate touch, and timely check-ins. It helps people process emotions, fight loneliness, and build resilience through belonging and self-worth (Weinstein & Palmer, 2022). Another dimension of social support is instrumental/tangible social support. Weinstein and Palmer (2022) reported that instrumental social support involves practical help, which eases daily tasks and stress. Examples: transportation, financial aid, childcare, meal delivery and help with chores. Park and Kim (2020) averred that it reduces burdens, enables participation in activities, and speeds recovery.

Additionally, informational social support provides guidance, advice, and factual information to help people navigate challenges. It includes explanations, recommendations, problem-solving tips and access to knowledge from others. It reduces uncertainty, informs decision-making, and increases perceived control (Park and Kim, 2020). Finally, appraisal/esteem social support focuses on affirming worth and capabilities; it helps people see value in themselves. It involves constructive feedback, encouragement, and recognition of strengths. Boosting self-efficacy and confidence enhances decision-making and resilience. This is to say that social support (emotional, instrumental/tangible, informational and appraisal/esteem) occurs in the presence of a social network; the concept is often used in a broad sense referring to any process through which social relationships might provide health and well-being (Heni-Nur et al., 2023). Heni-Nur et. al. (2023) continued that social support is understood from a subjective viewpoint, including emotional support, esteem support, social integration or network support, provision of information and feedback and tangible assistance. This implies that social support involves positive assistance from a network of friends, family and others. This assistance can either be actual/received or perceived, and when it is perceived, it is known as perceived social support (Chih & Boqiang, 2024).

Perceived social support is an individual's belief that help and resources are available when needed, regardless of actual usage. It acts as a psychological buffer against stress, promoting resilience, well-being and motivation. This perception hinges on trusted relationships, accessibility and the credibility of those

offering support. In schools and workplaces, high perceived support enhances engagement, persistence, performance and attitude, even when objective resources are limited. This fosters open communication, reliable mentorship, increases individual attitude and creates a welcoming climate which strengthens this perception and its positive outcomes (Gupta et al., 2022). Attitude is a person's personal way of thinking and feeling which affects how they act. It was one of the dependent variables considered in this study.

Attitude is the lens through which we interpret life's events. Abirin (2022) opined that attitude shapes resilience, motivation, and relationships more than mere circumstance. A positive attitude fuels curiosity, effort and adaptability, helping us turn setbacks into growth and it can elevate teammates or drag them down. It is a conscious choice, practiced daily, framing challenges as opportunities, recognizing progress and embracing gratitude (Mehmood, 2020). No wonder Karpudewan and Chong-Keat (2017) observed that attitude towards learning science is positively correlated with both classroom support for learning and science laboratory in Malaysian schools. Meanwhile some group of scholars reported that attitude moderately correlated positively with students' perception of social support in many science subjects (Fareo, 2019; Abirin, 2022). While Yadav and Sharma (2023) who reported low positive relationship between students' social support and their attitude in sciences.

More so, Abirin, (2022), Samuel and Mangoting (2021) indicated in their different studies that attitudes have a significant influence on the intention of the accounting students' perceived social support. While Effiong et.al. (2024) revealed that social support, test anxiety and motivation to study Biology not significantly relate to students' attitude in the subject. Furthermore Fareo (2019) posited that attitude towards Biology is influenced by the perception and beliefs about the subject, learning abilities and competence. While Réa et. al. (2021) observed that social support is a dynamic system in which adult support is an important resource for pupils' attitude towards science subjects in Finnish secondary schools and there is no significant difference in various dimensions of social support and student's attitude in Finnish secondary schools. From the available literature, many studies have been done independently on social support and attitude, and on social support and achievement, but have not been collectively studied or even done on perceived social support. This was the first gap the present study aimed to bridge. Moreover, most of the studies reviewed, though, conducted in Biology were done in different countries of the world aside from Nigeria. Thus, this study investigated perceived social support as a correlate of secondary school students' attitude to Biology in the Federal Capital Territory (FCT), Abuja, Nigeria.

### **Statement of the Problem**

#### **Purpose of the Study**

The purpose of this study was to investigate perceived social support as a correlate of secondary school students' attitude to Biology in FCT Abuja, Nigeria. Specifically, the study investigated the:

- relationship between secondary school students' perceived social support (PSS) and attitude towards Biology in FCT Abuja.
- relationship between various dimensions of perceived social support (Emotional dimension,

Instrumental/Tangible, Informational and Appraisal/Esteem) and secondary school students' attitude to Biology in FCT Abuja.

**Research Questions**

The following research questions guided the study:

- What is the relationship between secondary school students' perceived social support and attitude towards Biology scores in FCT Abuja?
- What is the relationship between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude towards Biology scores in FCT Abuja?

**Hypotheses**

The following null hypotheses were tested at 0.05 significance level.

- There is no significant relationship between secondary school students' perceived social support scores and attitude towards Biology scores in FCT Abuja.
- There is no significant relationship between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude towards Biology scores in FCT Abuja.

**Methodology**

This study adopted correlation research design. The study was done in Federal Capital Territory (FCT), Abuja, Nigeria. The population of the study was 29,158 senior secondary two (SS2) Biology students from the Federal Capital Territory (FCT), Abuja. The sample for this study comprised 2,928 senior secondary two (SS2) students offering Biology and drawn from twenty-four (24) secondary schools in the Federal Capital Territory, Abuja. According to Nworgu (2015), a sample size of about 10% to 50% of the population, depending on the population size, is adequate for survey research. Thus, 10.04 % of the population (29,158) was used for the study due to the targeted population in FCT. The sample was drawn through a two-stage sampling procedure involving the proportionate sampling technique and stratified random sampling technique.

**Results**

**Table 1: The Relationship between Students' Perceived Social Support and Attitude Towards Biology in FCT Abuja**

Variables	N	r	R <sup>2</sup>	Magnitude & Direction	Sig	Decision
PSS Attitude	2928	0.311	0.410	Moderate positive Relationship	.045	Significant

Table 1 reveals correlation coefficients of the relationship between secondary school students' perceived social support scores and attitude scores towards Biology in FCT Abuja as 0.311. This means there is a moderate positive relationship between secondary school students' perceived social support scores and attitude scores towards Biology. The coefficient of determination

In the first stage, the proportionate sampling technique was used to select 24 schools out of 88 public secondary schools in the FCT. Four schools were selected from each of the six Area Councils of FCT. The reason was that the proportionate sampling technique will help to create a sample that accurately reflects the demographic structure of the entire population, ensuring that subgroups are represented in the same ratio as in the total population. The second stage which is the stratified random technique was used to select 122 SS2 Biology students in all the 24 secondary schools that were selected from the FCT. The reason was that the stratified random technique helps to take care of a population with diverse subgroups or strata with different characteristics or outcomes. This also helps to reduce sampling bias, increase the precision of results and allow for specific comparisons and conclusions to be drawn about each subgroup rather than just the population as a whole.

**Instrument**

Two instruments were used for data collection, namely Students Social Support Questionnaire (SSSQ) and Biology Students' Attitude Scale (BSAS). The SSSQ and BSAS were validated by three experts, two from Department of Science Education and one from Department of Educational Foundation all from Nnamdi Azikiwe University, Awka. SSSQ and BSAS generated 0.79 and 0.81 consistency values after try testing the instruments in another area that is not the place of the study using Cronbach alpha.

Data generated from the study were analysed using r and R<sup>2</sup> to answer research questions and Pearson moment r was used to test the hypothesis at 0.50 level of significance. In interpreting the correlation coefficients, the rule posited by Nworgu (2015) about the interpretation was adopted for the interpretation of the study using the range of scores as thus: ±0.80 to ± 1.00 was assigned to high positive or negative relationship value, ±0.31 to ± 0.79 was assigned to moderate positive or negative relationship value, ±0.00 to ± 0.30 was assigned to low positive or negative relationship value. In interpreting the null hypothesis, the decision rule is that when P-value is less than or equal to 0.05 (P ≤ 0.05) the null hypothesis was rejected. On the other hand, when P-value is greater than the alpha level of 0.05 (P ≥ 0.05), the null hypothesis was not rejected.

(0.410) also known as the relationship value means that 41% of students' perceived social support accounted for the variation in attitude of students towards Biology. This is an indication that 59% of variation in students' attitude towards Biology is attributed to other factors other than students' perceived social support.

Table 1 further revealed the Pearson correlation coefficient for the relationship between secondary school students' perceived social support scores and attitude scores towards Biology in FCT Abuja. A moderate positive correlation was found;  $r(2928) = 0.045, p=0.00 < 0.05$  indicating a significant relationship between the two variables. The null hypothesis which stated that there is no

significant relationship between secondary school students' perceived social support scores and attitude scores towards Biology in FCT Abuja is therefore rejected. The inference drawn is that the higher the students perceived social support, the more positive attitude they develop towards Biology.

**Table 2: Relationship between Various Dimensions of Perceived Social Support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and Attitude Score towards Biology**

Variables	N	r	R <sup>2</sup>	Magnitude & Direction
2628				
Emotional dimension		0.097	0.011	low
Instrumental/Tangible		0.067	0.015	positive
Informational		0.264	0.000	relationship
Appraisal/Esteem	0.106	0.003		

Table 2 reveals correlation coefficients of the relationship between various dimensions of perceived social support (emotional dimension, instrumental/tangible, informational and appraisal/esteem) scores and attitude score towards Biology. The r and R<sup>2</sup> values in the table, shows the relationship values and relative contributions of the four dimensions of perceived social support to students' attitude towards Biology as thus: The analysis shows low positive relationship between perceived social support

and Biology attitudes among FCT Abuja students. Perceived social support correlates positively with Biology attitude ( $r = 0.097$ ), with only 1.1% of attitude variation explained by emotional dimension. Instrumental support shows a 0.067 correlation, explaining 1.5% of variance. Informational support yields a higher, yet still modest,  $r = 0.264$ , explaining 0% of attitude variance, implying other factors dominate. Appraisal/esteem relates weakly ( $r = 0.106$ ), explaining 0.3% of variance, leaving 99.7% due to other factors.

**Table 3: Relationship between Various Dimensions of Perceived Social Support scores and Students' Attitude Score towards Biology Scores**

Model	r	R <sup>2</sup>	Adjusted R Square	Std. Error of the Estimate	Sig	Decision
1	0.173 <sup>a</sup>	0.037	-0.014	7.52932	0.729 <sup>b</sup>	NS

a: (Constant), Appraisal/Esteem, Instrumental/Tangible, Emotional Dimension, Informational

Table 3 revealed the pearson correlation coefficient for the relationship between various dimensions of perceived social support scores and attitude score towards Biology A low positive correlation was found  $r(2928) = 0.173, p=0.729 > 0.05$  indicating a no significant relationship between the various dimensions of perceived social support and students attitude. The null hypothesis which stated that there is no significant relationship between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude scores in Biology in FCT Abuja is therefore upheld. The inference drawn is that there is no significant relationship between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude scores in Biology in FCT Abuja.

## Discussion

### The correlation between perceived social support and students' attitude to Biology

The findings of the study revealed that a moderate positive relationship exist between secondary school students' perceived

social support scores and attitude scores towards Biology. Further analysis showed that there is a significant relationship between secondary school students' perceived social support scores and attitude scores towards Biology in FCT Abuja. This implies that perceived social support meaningfully shapes Biology attitudes, boosting motivation, reducing anxiety, and reinforcing positive experiences influencing students' views. These findings are in agreement with that of Karpudewan and Chong-Keat (2017) who observed that attitude towards learning science is positively correlated with both classroom support for learning and science laboratory in Malaysian schools. The finding is also in line with group of scholars who reported that attitude moderately correlated positively with students' perception of social support in many science subjects (Fareo, 2019; Sundawa, Ratimaning and Anggraini, 2020; Samuel and Mangoting, 2021; Abirin, 2022; Chih and Boqiang, 2024). The finding is not in agreement with Yadav and Sharma (2023) who reported low positive relationship between students' social support and their attitude in sciences.

More so, the finding aligned with that of Abirin, (2022), Samuel and Mangoting (2021) indicated in their different studies that attitudes have a significant influence on the intention of the accounting students' perceived social support. But the finding do not aligned with the report of Effiong, Imong and Ajah (2024) who revealed that social support, test anxiety and motivation to study Biology not significantly relate to students' attitude in the subject.

By virtue of this finding, this study has joined the group of scholars that observed that the relationship between secondary school students' perceived social support scores and attitude scores towards Biology is moderate and significant.

### **The Correlation between various dimensions of perceived social support and students' attitude to Biology**

The findings of the study revealed that a low positive relationship exist between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude scores in Biology in FCT Abuja. Further analysis indicated that there is no significant relationship between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude scores in Biology in FCT Abuja. This implies that perceived social support across dimensions does not meaningfully shape secondary Biology attitudes; school context and intrinsic motivation likely dominate. This finding is in line with Fareo (2019) who posited that attitude towards Biology is influenced by the perception and beliefs about the subject, learning abilities and competence. But the finding is not in line with Réa, Tiina, Janne and Kirsi (2021) who observed that social support is a dynamic system in which adult support is an important resource for pupils' attitude towards science subjects in Finnish secondary schools and there is no significant difference in various dimensions of social support and student's attitude in Finnish secondary schools. By the reason of this study, the study has joined the group of scholars that observed that there is a low positive relationship exist between various dimensions of perceived social support (Emotional dimension, Instrumental/Tangible, Informational and Appraisal/Esteem) scores and secondary school students' attitude scores in Biology which is not significant.

### **Conclusion**

Based on the investigation into perceived social support as a correlate of secondary school students' attitude to Biology in FCT Abuja, Nigeria, the following conclusions were drawn: The study finds that overall perceived social support modestly and positively relates to students' attitudes toward Biology, suggesting a supportive environment can heighten interest and persistence. When examining support by dimension (emotional, instrumental, informational, appraisal), each shows only low positive relationship, non-significant associations with attitude and achievement, indicating no single type of support reliably drives attitudes or grades. The strongest takeaway is that the combined effect of perceived support and attitude is a small but significant positive relationship, implying that support influences attitudes which, alongside effective cognitive engagement and instruction, can contribute to better attitude to Biology.

### **Recommendations**

Based on the findings of the study, and the conclusion drawn, the following recommendations are made:

- Students should cultivate a daily supportive study routine and seek constructive feedback to strengthen attitudes and persistence in Biology.
- Guidance counselors should foster a holistic support network and coordinate resources to translate support

into concrete study practices especially in secondary school science subjects like Biology.

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