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Effect of Emotional Intelligence on Academic Achievement of Senior Secondary School Students in Biology in Wukari Metropolis

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Abstract

This study investigates the effect of emotional intelligence on the academic achievement of senior secondary school students in Biology within Wukari Metropolis, Nigeria. Specifically, the study examines the influence of emotional awareness, emotional management, socio-emotional awareness, and relationship management on students' academic performance. A descriptive research design was adopted, with a sample of 150 students selected through simple random sampling. Data were collected using a structured questionnaire and analyzed using mean and standard deviation. The findings reveal that emotional awareness significantly influences academic achievement in Biology, as students with higher emotional awareness tend to perform better academically. Additionally, students exhibited challenges in emotional management, which adversely impacted their academic performance. Socio-emotional awareness was also found to be a contributing factor, highlighting the importance of interpersonal understanding in academic contexts. Furthermore, relationship management skills, including help-seeking behavior and collaboration, positively influenced student achievement in Biology. The study concludes that emotional

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intelligence plays a vital role in academic success and recommends the integration of emotional intelligence training into the school curriculum. Such initiatives would support the development of self-awareness, emotional regulation, and interpersonal competencies, thereby fostering improved academic outcomes among secondary school students.

Keywords: Emotional Intelligence; Emotional Awareness; Socio-Emotional Awareness; Relationship Management; Academic Achievement; Biology Education

INTRODUCTION

The importance of education in any society is profound and far-reaching. It entails empowering individuals to think critically, solve problems, and make informed decisions that contribute to personal and collective progress. As a fundamental pillar of development, education plays a key role in reducing poverty, promoting social equality, and nurturing a culture of peace, innovation, and sustainable growth within a nation. Interestingly, science education occupies a central role in this transformative process. According to Umate, Ibrahim and Abubakar (2023), science education is the methodical teaching and study of scientific ideas, concepts, and procedures with the goal of developing students' comprehension, critical thinking, and problem-solving abilities. Among other subjects, it includes the study of Biology, Chemistry and Physics. Consequently, Uzoechi, Parsa, Mahmud, Alasqah, and Kabir (2023) noted that in educational settings, effective science education goes beyond the acquisition of theoretical knowledge. It involves hands-on experiments, collaborative projects, and the integration of technology to make learning dynamic and relevant and one of the important subject in science education is Biology.

On the other hand, Uzoechi, et al (2023) averred that Biology is one of the key subjects in scientific education, and it incorporates practical experiments, group projects, and technological integration to make learning engaging and active. It investigates basic ideas including genetics, ecology, physiology, and evolution, offering understanding of the intricacies of life on many scales, from cells and molecules amongst others. Therefore, in Nigeria, Biology appears to be a very popular subject among secondary school pupils. The majority of pupils give Biology as a general scientific subject in their School Certificate Examinations, which has been credited with the subject's popularity among students. More

so, Biology is required for admission to tertiary institutions in Nigeria, particularly in programs that focus on the pure and social sciences. It is also a part of general studies (science, technology, and society) for students in many different fields of study at Nigerian colleges, polytechnics, and universities.

However, despite Biology's potential benefits, research by Jonathan, Menchak, Donatus and King, (2021) revealed that majority of Nigerian students struggle with poor grades in the subject. In the same vein, the scholars attributed this drop to low student enthusiasm and commitment, instructors' inadequate subject-matter expertise, lack of resources and overburdened curriculum while Raiyegbemi, Osokoya, Taiwo, Adu, Nsofor, Adeniran and Ajani (2020) opined that sociocultural factors and negative attitude of students towards the subject are the major contributing factor for students' poor academic drop in performance. Beyond these factors, recent attention has turned to the role of **emotional intelligence** in shaping students' academic outcomes.

According to Davoudi, Nafchi and Khodabakhshi (2015), emotional intelligence entails the ability of an individual to recognize, understand, manage, and utilize emotions effectively in oneself and in others. It encompasses key components such as self-awareness, self-regulation, motivation, empathy, and social skills. Consequently, Shengyao, Xuefen, Jenatabadi, Samsudin, Chunchun, and Ishak (2024) averred that emotional intelligence involves self-awareness, understanding others, effective interpersonal interactions, and the ability to adapt to one's environment. Individuals with high emotional intelligence can recognize how emotions impact their thoughts, physical well-being, relationships, and overall ability to function effectively. In the same vein, Davoudi et al (2015) noted that emotional intelligence encompasses qualities such as self-awareness, emotional regulation, self-motivation, empathy, and interpersonal skills, which are vital for preserving personal harmony and confidence. Together, these skills form the foundation of emotional intelligence, empowering individuals to navigate life's complexities with confidence and authenticity and can enable students to navigate both life and academic challenges more effectively. However, despite the critical role emotional intelligence plays in academic and personal success, many students today struggle to develop these essential skills. A growing number of learners lack self-awareness, making it difficult for them to identify their emotions or understand how those emotions influence their behavior and academic engagement.

In Wukari Metropolis, preliminary investigations have shown that, similar to other regions in Nigeria, Senior Secondary School (SSS) students are experiencing low academic achievement in Biology. This decline may be attributed to various factors such as the pressures of globalization, academic stress, social expectations, and the challenge of adapting to an increasingly competitive educational environment. Additionally, personal interactions with some students revealed that many struggle to regulate their emotions, often resulting in impulsive behavior, emotional outbursts, or social withdrawal factors that can disrupt both their learning environment and relationships with peers and teachers. These emotional challenges, if not addressed, may significantly hinder students' focus, motivation, and resilience, thereby affecting their academic performance.

Furthermore, several studies such has being carried out on effect of emotional intelligence on the academic achievement of students. For instance, studies by Suleman, Hussain, Syed, Parveen, Lodhi and Mahmood (2019) revealed that there is strong positive relationship between emotional intelligence and the academic performance of undergraduate students in Pakistan. Similarly, studies by Nwankwo, Nwosu, Etele, Chigbu and Obi (2022), found a positive influence of emotional intelligence on the academic performance of undergraduate guidance and counseling students. Conversely, Pope, Roper and Qualter (2012)did not observe any effect of emotional intelligence on academic performance among undergraduate psychology students in the United Kingdom. A critical review of the literature indicates that these findings are inconsistent, and importantly little attention has been drawn to investigate the effect of emotional intelligence on the academic achievement of senior secondary school students in Biology in Wukari Metropolis.

Objectives of the Study

The broad objective of the study was to examine the effect of emotional intelligence on the academic achievement of senior secondary school students in Biology in Wukari Metropolis. The specific objectives are to:

i. ascertain the effect of emotional awareness on the academic achievement of senior secondary school students' in Biology in Wukari Metropolis
ii. determine the effect of emotional management on the academic achievement of senior secondary school students' in Biology in Wukari Metropolis
iii. assess the effect of social-emotional awareness on the academic achievement of senior secondary school students' in Biology in Wukari Metropolis

iv. ascertain effect of relationship-management on the academic achievement of senior secondary school students' in Biology in Wukari Metropolis

Literature Review

Conceptual Clarification

Emotional Intelligence

The term emotional intelligence has been defined in a variety of ways by several scholars. Emotional intelligence, according to Chin (2021), is the capacity to recognize, comprehend, communicate, and control emotions. Chin's description of emotional intelligence as the capacity to recognize, comprehend, communicate, and control emotions is quite comprehensive as it encompasses both the exterior knowledge of other people's emotions as well as the interior control of one's own. The concept goes beyond emotional awareness to highlight its practical relevance in social interaction and decision-making by incorporating the capacity to employ emotions to direct behavior and cognition. This comprehensive approach offers a comprehensive knowledge of what it means to be emotionally intelligent and fits in nicely with accepted ideas in the area.

Furthermore, Bar-On, R. (2007) expanded the definition of emotional intelligence to encompass social, emotional, and personal skills that significantly influence an individual's total aptitude. It enables people to successfully manage stressors and challenges in both their personal and social lives.

Furthermore, Matthews, Zeidner and Roberts, (2012) noted that emotional intelligence encompasses the ability to recognize, communicate, use, and control one's own emotions as well as those of others. Matthews et al.'s definition of emotional intelligence, which includes evaluating, expressing, using, and controlling one's own emotions as well as those of others, is comprehensive since it extends the concept to encompass not only internal processes but also external emotional dynamics.

In this study, emotional intelligence will be defined as the ability to recognize, understand, manage, and effectively use emotions both one's own and those of others in a way that enhances thinking, behavior, and interpersonal relationships. It involves key skills such as emotional awareness, empathy, self-regulation, motivation, and social competence, enabling individuals to navigate social environments, make informed decisions, and respond to challenges with emotional insight.

Academic Achievement

Academic achievement or achievement in different subjects has always been an issue of great concern to students, teachers, parents, and specialists in education as well. Its definition has been defined by several scholars. According Omoniyi, Gamede and Uleanya,(2019), academic achievement is defined as the knowledge or abilities demonstrated in the course of study. Teachers award exam scores or marks to reflect such success. Omoniyi's et al definition of academic achievement is encompassing as it aligns with formal assessment practices used to evaluate student performance. In the same vein, Keneni (2022), defines academic achievement is the success of students in the disciplines they learn in school. The students' standing in the class is decided by this. Children may use this to hone their skills, raise their grades, and get ready for more difficult coursework. The definition by Keneni explains academic accomplishment as the level of success students achieve in their school subjects. It means how well a student performs in what they are taught. This performance helps to determine the student's position or ranking in the class.

Consequently. Akinyemi, Gbesoevi, and Afola (2024) defined academic accomplishment as the degree to which a student satisfies the requirements set by their school or educational institution and accomplishes their learning objectives. It is frequently assessed using a range of metrics, including grades, test results, engagement in class, and assignment completion. When taken as a whole, these metrics offer a thorough picture of a student's comprehension and proficiency of the material being studied. **Akinyemi, Gbesoevi, and Afola's** definition of academic accomplishment as the extent to which a student meets institutional standards and achieves learning objectives is notably thorough. It integrates both the **quantitative** aspects of academic success such as grades, test scores, and assignment completion and the **qualitative** dimensions, including classroom engagement and comprehension of subject matter.

In this study, academic achievement refers to the level of success a student reaches in their educational pursuits. It is typically measured through grades, test scores, and the completion of educational milestones, such as passing exams, graduating, or earning a degree.

Theoretical Framework

Self –Efficacy Theory

This study is anchored on self-efficacy theory which was propounded by Albert Bandura, propounded in 1977. The theory proposed that phobic behavior is influenced more by self-

efficacy judgments than by outcome expectations. Bandura argues that individuals hold beliefs about their own capabilities to successfully perform tasks and achieve desired outcomes. These beliefs influence the choices they make, the effort they expend, and their perseverance in the face of obstacles

In application, the theory argues that students who believe in their ability to succeed in biology are likely to approach learning with confidence. This self-belief enhances their emotional intelligence, enabling them to manage anxiety, stay focused during challenging tasks, and remain resilient in the face of poor grades or difficult concepts. The theory also posit that high self-efficacy leads students to set higher academic goals. Combined with emotional intelligence. Senior secondary school students in Wukari Metropolis, Taraba State can effectively plan, organize, and execute study strategies. They can also handle the emotional pressures of deadlines and exams, leading to better performance in Biology.

Review of Related Empirical Studies

Umate et al (2023) investigated association between students' academic performance and emotional intelligence in Gombe State. Using a correlational research methodology. The study involved 113 NCE II and III Chemistry students from the Federal College of Education (Technical), Gombe, consisting of 34 female and 79 male participants. A validated Quick Emotional Intelligence Self-Assessment Questionnaire, which had a reliability value of 0.79, was used to gather data. The cumulative grade point average (CGPA) of the pupils was used to evaluate their academic success. The results showed that academic achievement in chemistry and emotional intelligence were positively correlated.

Nwadinigwe (2019) looked on how emotional intelligence affected senior secondary school pupils' academic performance in Lagos, Nigeria. Three senior secondary schools provided 156 randomly chosen volunteers for the study. The two treatment conditions (training methods for emotional intelligence) and the control group were allocated to the schools at random. To gather information for the study, a questionnaire and an achievement exam were used. To direct the investigation, two research hypotheses were developed. The descriptive statistical approach, analysis of covariance (ANCOVA), and Pearson product moment correlation coefficient statistics were used to assess the hypotheses. According to the study, pupils' academic success and their emotional intelligence abilities are positively correlated.

Waiswa, Baguma, and Oonyu (2020) examined the relationship between academic achievement (AA) and emotional intelligence (EI) among upgrading university teacher

students at Makerere University and Uganda Christian University. Using a mixed methods approach, the study included 434 participants who were purposefully chosen from both institutions. Academic achievement was measured using both objective academic records (end-of-semester results for semesters one and two) and subjective self-reports (a structured questionnaire). The results showed that academic achievement was positively correlated with academic success, and that emotional intelligence significantly improved students' cognitive abilities. As a result, the researchers suggested integrating and developing EI competencies throughout the educational process to support sustained academic achievement

METHODOLOGY

Research Design

The research design that was adopted for this study was a descriptive research design. This design was adopted because it enables a thorough investigation and comprehension of the current link between academic performance and emotional intelligence without changing the variables. Furthermore, this design provides a clear, accurate picture of the phenomena under investigation, offering detailed insights into the characteristics, behaviors, and patterns within the target population.

Population of the Study

The population of the study comprised of the total number of Biology students in public senior secondary schools in Wukari metropolis. According to Wukari Local Government Educational Board (2024), Wukari metropolis has a total of ten (10) public senior secondary schools with a total population of 2,782 Biology students. The reason why only public senior secondary schools were used for this study is because these schools represent the majority of educational institutions in Wukari Metropolis, catering to diverse socioeconomic groups. Also, by focusing on public schools, the study ensures a broader and more inclusive representation of the student population. On the other hand, Biology students were specifically chosen due to the subject's critical role in science education, which directly influences students' preparedness for careers in health sciences, agriculture, and environmental studies fields essential for national development.

Table 1: Population of the Study

S/N	School	Number of student Male	Number of student Female	Total
1	GSSS WUKARI EAST	156	120	276
2	GDSS LADAN WUKARI	123	98	363
3	GDSS CENTRAL WUKARI	177	186	363
4	GDSS WAPAN NGHAKU	178	155	333
5	GDSS WUKARI	177	89	266
6	GDSS MARMARA	88	49	137
7	YAKASEN GDSS WUKARI	99	69	168
8	GDSS KUMUTU WUKARI	81	60	141
9	GDSS WUKARI	155	122	277
10	MAMARA GGSS WUKARI	0	600	600
	Total	1234	1548	2,782

Source: Wukari Local Government Educational Board (2024)

Sample and Sampling Techniques

The sample size for this study was 150 respondents. The sampling technique that was adopted for this study was simple random sampling technique. According to Idi, Mathew and Ibrahim (2024) this sampling technique allows each member of the population to have an equal chance of being selected. On the basis of this sampling technique, 15 Biology students from each of the public senior schools in Wukari metropolis was selected randomly making it a total of 150 students offering Biology.

Instrumentation

The instrument for data collection was a structured questionnaire titled "Emotional Intelligence and Students Academic Achievement Questionnaire (EISAAQ)". The questionnaire was in two sections which are section A and B. The section A contained item which measured the bio data of the respondents while the section B was made up of 20 items which assessed the effect of emotional awareness, emotional management, social emotional awareness, and relationship management on students' academic achievement. The items on the questionnaire were rated in a 4-point Likert scale of 1-never, 2- sometimes, 3-often, and 4-always.

Validity and Reliability of the Instruments

The instrument EISAAQ was subjected to both face and content validity. The validation of these instruments was carried out by three experts, one in the area of test and measurement and two experts from the Department of Science Education. The corrections made by these experts were put into consideration before and duly incorporated before administration. In order to determine the instruments' dependability. Ten (10) copies of the EISAAQ were sent to science students at GDSS Jibu Wukari. A Pearson Product Moment Correlation (PPMC) was used to gather and analyze the 10 surveys. An association of 0.7 was obtained and deemed reliable.

Method of Data Collection and Analysis

The instrument was personally administered by the researcher with the aid of a trained assistant to ensure consistency in administration, accurate clarification of instructions, and effective monitoring of respondents. This approach minimized misunderstandings, ensured adherence to guidelines, and safeguarded the authenticity of responses. Data for the study was analyzed through the use mean and standard deviation. The justification for using these statistical tools lies in their ability to provide a clear summary of the data. The mean was used to determine the average response for each item, providing an overall measure of the central tendency of the data. The standard deviation, on the other hand, offered insight into the variability or spread of the responses, helping to understand how consistent or varied the data is. Together, these measures are ideal for analyzing the research questions as they offer a straightforward way to interpret the relationship between emotional intelligence and academic achievement

RESULTS

Table 2: Effect of Emotional Awareness on Academic Achievement of Senior Secondary School Students' in Biology in Wukari Metropolis

(Key: 4 (Always); 3 (Often); 2 (Sometimes); 1 (Never)

S/N	Statement	4	3	2	1	Mean	Std. Dev	Remarks
1	I can describe how I feel when I am struggling to understand Biology concepts	17	70	10	45	2.42	1.06	Rejected
2	I can identify the emotions I feel before, during, and after exams	11	71	56	4	2.63	0.67	Accepted

3	I maintain my composure even during stressful times to improve my academic achievement	27	15	87	13	2.39	0.90	Rejected
4	I am aware of how my emotions affect my ability to concentrate in class	55	19	60	8	2.85	1.01	Accepted
5	I understand how my emotions impact my study habits and performance	19	66	21	36	2.48	1.01	Rejected
	Grand Mean					**2.55**		**Accepted**

Source Field Survey, 2025

Table 2 examines the effect of students' emotional awareness and their academic achievement in Biology within Wukari Metropolis. The first statement, "I can describe how I feel when I am struggling to understand biology concepts," had a mean score of 2.42, suggesting that students can articulate their feelings about academic challenges to a modest degree. The mean score for Statement 2, "Identifying emotions before, during, and after exams," was 2.63, indicating a somewhat better degree of self-awareness in identifying assessment-related emotions. With a mean score of 2.39 for Statement 3, "Maintaining composure during stressful academic periods," it appears that while some students are good at handling stress, many struggle to remain calm under pressure.

More so, "The highest mean score of 2.85 was recorded for the item 'Awareness of how emotions affect concentration in class,' indicating that students are relatively more conscious of the impact emotions have on their ability to focus. In contrast, the item 'Understanding how emotions influence study habits and performance' received a mean score of 2.48, reflecting a moderate level of awareness regarding the connection between emotions and study practices." The grand mean of 2.55 indicates a general agreement with the statement that emotional awareness affects the academic achievement of senior secondary school students in Biology in Wukari Metropolis. Most students recognize that their emotions affect their concentration, performance in examinations, and study habits.

Table 3: Effect of Emotional Management on Academic Achievement of Senior Secondary School Students' in Biology in Wukari Metropolis
(Key: 4 (Always); 3 (Often); 2 (Sometimes); 1 (Never)

S/N	Statement	(A)	(O)	(S)	(N)	Mean	Std. Dev	Remarks
1	I can stay calm when I feel stressed or anxious about my studies.	26	39	70	7	2.59	0.84	Accepted
2	I can control my emotions when facing challenging Biology topics.	26	20	76	20	2.37	0.94	Rejected
3	I know how to manage my emotions during exams to avoid anxiety.	24	26	60	32	2.30	1.00	rejected
4	I am able to concentrate on my studies even when I am emotionally disturbed.	13	26	43	60	1.94	0.99	Rejected
5	I find ways to relax before tests to improve my performance.	30	32	64	16	2.54	0.95	Accepted
	Grand Mean					**2.35**		Rejected

Source Field Survey, 2025

Table 3 examines how well senior secondary school students in Wukari Metropolis manage their emotions in relation to their academic performance in Biology. The item 'I can stay calm when I feel stressed or anxious about my studies' received a mean score of 2.59, indicating that students generally demonstrate a moderate ability to remain calm under academic stress. While not exceptionally high, the score suggests that a fair number of respondents are able to manage stress effectively.

In contrast, the item 'I can control my emotions when facing challenging Biology topics' recorded a lower mean score of 2.37, falling below the acceptance threshold. This suggests that students commonly struggle with emotional regulation when confronted with difficult Biology content, highlighting the need for strategies to build resilience in academic settings. Similarly, the item 'I know how to manage my emotions during exams to avoid anxiety' had a mean score of 2.30, also below the acceptance threshold. This implies that many students experience difficulty in coping with exam-related anxiety, emphasizing the importance of targeted support to help them manage emotional responses during high-pressure situations."

"With a mean score of 1.94, the item 'I am able to focus on my studies even when I am emotionally upset' had the lowest score and was below the acceptability criterion. This suggests that many students find it difficult to concentrate when they are emotionally disturbed, highlighting a crucial area that need assistance and intervention. The question "I find ways to relax before tests to improve my performance," on the other hand, had a mean

score of 2.54, indicating that students somewhat agree that they use relaxation techniques before to tests, which probably helps them do better academically. The **Grand Mean of 2.35** falls below the acceptance threshold, it leads to the **rejection** of the overall assessment. This suggests that senior secondary school students in Wukari Metropolis generally struggle with managing their emotions in relation to their academic performance in Biology.

Table 4: Effect of Socio-Emotional Awareness on Academic Achievement of Senior Secondary School Students' in Biology in Wukari Metropolis

S/N	Statement	A	O	S	N	Mean	Std. Dev	Remarks
1	I am able to manage my stress or anxiety effectively when facing academic challenges.	11	19	74	38	2.02	0.84	Rejected
2	I can reflect on my emotional experiences to improve my learning strategies.	95	24	16	7	3.46	0.88	Accepted
3	I feel comfortable discussing my emotions with my teachers.	4	89	25	24	2.51	0.80	Accepted
4	I use social support from friends and family to help manage academic stress. (1st instance)	23	11	85	23	2.24	0.91	Rejected
5	I perform better when I am socially aware on issues surrounding me	65	22	44	11	2.99	1.04	Accepted
	Grand Mean						**2.65**	Accepted

Source Field Survey, 2025

With a mean score of 2.02, the item "I am able to manage my stress or anxiety effectively when facing academic challenges" suggests that students often struggle to handle academic stress. This finding implies that a sizable portion of respondents have trouble managing their stress, underscoring the necessity of focused intervention techniques. 'I can reflect on my emotional experiences to improve my learning techniques', on the other hand, had a high mean score of 3.46. This implies that a significant component of students' social-emotional awareness is their capacity to use their emotional experiences in a positive way to improve learning.

A moderate degree of openness in student-teacher emotional communication was indicated by the item 'I feel comfortable sharing my emotions with my instructors', which got a mean score of. Even while some children feel at ease in these situations, more work might be done to foster emotional expressiveness and trust. The item "I use social support from friends and family to help manage academic stress" had a mean score of 2.24, suggesting a low

dependence on social support networks. This suggests a possible deficit in pupils' coping mechanisms that might use support and improvement.

In contrast, the item "I perform better when I am socially aware of issues surrounding me" had a mean score of 2.99, which is comparatively high. This shows that, when presented in more comprehensive, contextual terms, students are more likely to appreciate the importance of social awareness in improving academic success. Overall, there is broad consensus that socio-emotional awareness affects biology students' academic performance in senior secondary schools in Wukari Metropolis, as indicated by the grand mean score of 2.65.

Table 5: Effect of Relationship Management on Academic Achievement of Senior Secondary School Students' in Biology in Wukari Metropolis

S/N	Statement	(A)	(O)	(S)	(N)	Mean	Std. Dev	Remarks
1	I seek help from classmates when I don't understand Biology topics.	103	13	17	9	3.48	0.94	Accepted
2	I work well with classmates during group Biology projects.	93	9	22	18	3.25	1.12	Accepted
3	I maintain positive relationships with my teachers to enhance my learning.	47	8	55	32	2.49	1.17	Rejected
4	I can resolve conflicts with classmates in a constructive manner.	15	31	48	48	2.09	0.99	Rejected
5	I cooperate with my peers during Biology practical sessions.	25	43	67	7	2.61	0.83	Accepted
	Grand Mean					**2.78**		**Accepted**

Source Field Survey, 2025

The item 'I seek help from classmates when I don't understand Biology topics' recorded a high mean score of 3.48 with a standard deviation of 0.94. This indicates a strong tendency among students to seek peer assistance when facing difficulties in Biology, suggesting that peer support is a well-established and effective strategy contributing to their academic success. Similarly, 'I work well with classmates during group Biology projects' received a mean of 3.25 and a standard deviation of 1.12, showing that students generally collaborate effectively during group tasks. This reflects a positive dynamic in teamwork, which plays a vital role in enhancing understanding and academic performance.

The item 'I maintain positive relationships with my teachers to enhance my learning' had a mean score of 2.49 and a standard deviation of 1.17, indicating a moderate level of student-teacher rapport. While the score is acceptable, it points to an opportunity to strengthen these

relationships further to better support student learning. In contrast, 'I can resolve conflicts with classmates in a constructive manner' recorded the lowest mean of 2.09 with a standard deviation of 0.99, falling below the acceptance threshold. This result reveals that many students find it difficult to handle interpersonal conflicts constructively, highlighting a crucial area for development in relationship management skills. The item 'I cooperate with my peers during Biology practical sessions' had a mean score of 2.61 and a standard deviation of 0.83, suggesting a moderate level of cooperation during practical activities. While collaboration is present, reinforcing this behavior could further enrich the students' learning experience. Overall, the grand mean score of 2.78 reflects general agreement that relationship management influences the academic achievement of senior secondary school students in Biology in Wukari Metropolis. The data suggests particular strengths in peer collaboration and group activities, though areas like conflict resolution and teacher-student relationships still need improvement.

DISCUSSION

Findings from the study revealed that emotional awareness affects the academic achievement of senior secondary school students in Biology in Wukari Metropolis as most students recognize that their emotions affect their concentration, performance in examinations, and study habits. This finding is in line with Goleman (2020) who argued that students who are more aware of their emotions can better manage their reactions to academic stress, allowing them to stay focused and engaged in their studies. Similarly, Mayer and Salovey (2017) posited that emotional self-awareness is a foundational component of emotional intelligence, influencing how students perceive and respond to academic challenges. Their work suggests that students who understand their emotional responses are more likely to adopt effective coping strategies that enhance learning.

Findings from the study revealed that senior secondary school students in Wukari Metropolis generally struggle with managing their emotions in relation to their academic performance in Biology. This finding is in line with Pekru. (2022) who revealed that students who struggle with emotional management are more likely to experience academic stress, which negatively affects their motivation and learning efficiency. Their study found that students with high emotional regulation skills perform better in subjects requiring problem-solving and conceptual understanding, such as Biology. A study conducted by Zeidner (2017) on test

anxiety and academic achievement found that students with poor emotional regulation skills often experience heightened anxiety before and during exams, leading to reduced performance in science subjects, including Biology.

Findings from the study also revealed that there is socio-emotional awareness affects the academic achievement of Biology students in senior secondary schools in Wukari Metropolis. This finding is in line with Goleman (2015) who emphasized that social-emotional competence is a critical factor in student success, as it enables learners to manage stress, regulate emotions, and interact effectively with their academic environment. Similarly, Mayer and Salovey (2017) argued that students with higher social-emotional awareness are better at problem-solving and decision-making, which positively impacts their academic performance. MacCann et al. (2020) further highlighted the importance of social-emotional awareness by demonstrating its connection to academic resilience. Their study found that students who are socially and emotionally aware are more likely to seek help from teachers and classmates, engage in collaborative learning, and manage academic challenges effectively. This aligns with the current study's findings, as students in Wukari exhibit a moderate level of social-emotional awareness, suggesting they possess some ability to use emotional intelligence to support their learning.

Findings from the study also revealed that **r**elationship management affects academic achievement of senior secondary school students' in Biology in Wukari Metropolis as majority of students agree to demonstrate strengths in seeking help and group collaboration. This finding is in line with Wafa (2019) who emphasized that students with strong interpersonal skills tend to perform better academically because they are more likely to engage in collaborative learning, seek help from teachers, and receive support from peers. Similarly, Adebayo and Yusuf (2021) argued that relationship management is critical to academic success because it enables students to work effectively in groups, exchange knowledge, and build supportive networks. Their study demonstrated that students who actively engage in positive social interactions tend to have higher academic motivation and better performance compared to those who struggle with interpersonal relationships. A study by Olayemi et al. (2020) further reinforced the link between relationship management and academic success. Their research found that students with high emotional intelligence, particularly in relationship management, performed better academically due to their ability to collaborate with others, manage conflicts, and communicate effectively. Similarly, Oberle et al. (2024) demonstrated that students who participate in social-emotional learning programs,

which focus on improving interpersonal skills, exhibit better classroom behavior, higher engagement, and improved academic performance.

CONCLUSION

This study examined the effect of emotional intelligence on the academic achievement of senior secondary school students in Biology in Wukari Metropolis. The study found that senior secondary school Biology students in Wukari Metropolis have a strong correlation between their academic performance and emotional intelligence. Emotionally intelligent students are better able to focus, control their academic stress, and form productive study routines. But a lot of children have trouble controlling their emotions, which makes them more anxious and perform worse in school. Additionally, important is socio-emotional awareness, since resilient and motivated children are more likely to comprehend and control their emotions and social relationships. Additionally, students who possess good relationship management abilities are better able to work together, ask for assistance when necessary, and create networks of support, all of which enhance academic.

Recommendations

Based on the findings of this study, the following recommendations are made:

i. Schools should introduce emotional intelligence training as part of their curriculum to help students develop self-awareness, emotional regulation, and relationship management skills, which can enhance their academic performance.
ii. School administrators should strengthen guidance and counseling services to provide students with strategies for managing stress, handling academic pressure, and improving their social-emotional skills.
iii. Teachers should adopt interactive teaching methods that encourage open communication and emotional support, helping students to express their feelings and seek academic assistance when needed.
iv. Schools should encourage group activities and peer mentoring programs that promote teamwork and relationship management, enabling students to seek academic support from classmates and build positive learning experiences.

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