

Family Values, Environmental Factors and Academic Motivation of Secondary School Students in Delta North Senatorial District

Agidy, Chukwuwike Gospel¹, Ugoji, Florence Ngozi²

Departmental of Guidance and Counselling Delta State University, Abraka.

DOI: <https://doi.org/10.47772/IJRISS.2026.100800697>

Received: 27 August 2026; Accepted: 1 September 2026; Published: 16 September 2026

ABSTRACT

This study investigated how family values and environmental factors relate to the academic motivation of secondary school students in Delta North Senatorial District. Two research questions and two null hypotheses guided the study. A correlational research design was used. The population consisted of 15,187 Senior Secondary School Two students in 159 public secondary schools, from which 375 students were selected through a multistage sampling procedure using Krejcie and Morgan's sample size guide. Data were collected with the Family Values, Environmental Factors, and Academic Motivation Questionnaire (FVEFAMQ). The instrument was validated by experts and further subjected to factor analysis, while Cronbach's alpha coefficients ranging from 0.71 to 0.82 confirmed its reliability. Pearson Product Moment Correlation and coefficient of determination were used to answer the research questions, while linear regression was used to test the hypotheses at the 0.05 level of significance. The results showed a positive moderate relationship between family values and academic motivation, with family values accounting for 27.6% of the variation in students' motivation. Environmental factors showed a positive high relationship with academic motivation and accounted for 57.9% of the variation. Both relationships were statistically significant. The study concluded that students are more likely to remain motivated when they receive positive support from home and learn in a safe, supportive, and conducive school environment. It therefore recommended stronger family support and improved learning conditions in schools.

Keywords: Family values, environmental factors, academic motivation, secondary school students.

INTRODUCTION

Academic motivation is central to students' willingness to learn, persist with difficult tasks and remain committed to educational goals. Çelik (2024) explained that adolescents' academic motivation is closely connected with the support they receive for autonomy, competence and self-control. In the Nigerian context, Adepoju and Pitan (2025) also reported that students' study behaviour is associated with their level of academic motivation. These findings suggest that motivation is not simply a personal trait but can be strengthened or weakened by the experiences surrounding the student. For secondary school students, this is especially important because the adolescent period often comes with increasing academic, social and emotional demands that may influence how seriously students approach their studies.

Family values may also shape the way students think about education and academic success. Zhao and Zhao (2022) found that the family environment, including parent-child interaction, family rules and educational expectations, plays an important role in adolescents' educational development. Similarly, Pinneo and Nolen (2024) showed that parental involvement and the value parents attach to education are related to students' academic motivation. This implies that when families encourage responsibility, discipline, hard work and commitment to schooling, students may be more likely to develop positive attitudes toward learning. Beyond the home, students are also influenced by their school and social environment through their relationships with teachers and peers, the learning atmosphere and the conditions under which teaching and learning take place.

Environmental factors are equally important because students spend a considerable part of their daily lives within school and peer settings. Verner-Filion et al. (2023) found that a positive school climate contributes to students' self-determined motivation and educational outcomes. In a related Nigerian study, Egbo et al. (2024) reported that family climate and peer pressure were associated with the academic achievement motivation of secondary school students. Although these studies show that family and environmental experiences matter, much of the existing literature has considered these factors separately or outside Delta North Senatorial District. This makes the present study necessary because examining family values and environmental factors together may provide a clearer understanding of the conditions that shape students' academic motivation in the area. The findings could also help parents, teachers, counsellors and school administrators develop more supportive home and school practices that encourage students to remain interested and committed to learning.

Statement of the Problem

Academic motivation is important to students' learning because it affects their interest in schoolwork, willingness to participate in academic activities and ability to remain focused when learning becomes difficult. Among secondary school students in Delta North Senatorial District, concerns may arise where students show low interest in their studies, weak commitment to assignments or reduced determination to achieve academically. Although such behaviour is sometimes seen as a personal issue, it may also be influenced by the values students receive from their families and the environment in which they live and learn. Family values such as discipline, responsibility, encouragement, educational expectations and respect for learning may shape how students view schooling, while environmental factors such as peer influence, teacher support, school climate and learning facilities may either strengthen or weaken their desire to learn. However, these factors are often considered separately, leaving a gap in understanding how they may jointly relate to students' academic motivation in Delta North Senatorial District. This study is therefore necessary and justified because it will provide a clearer understanding of these relationships and may help parents, teachers, counsellors and school administrators create conditions that encourage stronger interest, persistence and commitment to learning among students.

REVIEW OF RELATED LITERATURE

Concept of Academic Motivation

Academic motivation is more than a student's willingness to attend school or complete assignments. It reflects the energy, purpose, and persistence that students bring to learning, especially when academic tasks become difficult. In practical terms, motivation helps to explain why some students remain focused, participate actively, and continue working toward improvement, while others lose interest or withdraw when they encounter challenges. Okigbo and Onoshakpokaiye (2023) linked academic motivation with how students approach mathematics and academic performance in Delta State, while Urien and Courage (2024) showed that students' willingness to learn is also shaped by the environment in which learning takes place. Taken together, these studies suggest that motivation should not be viewed as a purely personal quality. Rather, it develops through the interaction between students' internal drive and the conditions that either encourage or weaken their engagement.

This broader view is important because students may be motivated for different reasons. Some are driven by genuine interest, curiosity, and the satisfaction that comes from mastering difficult tasks, while others respond more strongly to external rewards such as good grades, praise, parental approval, or future career opportunities. Egbo et al. (2024) showed that family and peer experiences can influence students' achievement motivation, while Çelik (2024) emphasized the importance of support, competence, and meaningful choice in sustaining adolescents' motivation. These findings point to an important distinction: motivation is strongest when students do not merely feel pressured to succeed but also see value in what they are doing and believe they are capable of succeeding. Academic motivation, therefore, is not simply about wanting high grades; it reflects the depth of students' interest, the effort they are willing to invest, and their ability to remain committed to learning over time. In this study, academic motivation refers to the extent to which secondary

school students are willing to engage meaningfully in learning, sustain effort, and continue pursuing academic goals despite difficulties.

Concept of Family Values

Family values refer to the beliefs, expectations, priorities, and patterns of behaviour that families communicate to children through both words and everyday practices. In the context of education, these values are often reflected in the importance parents attach to schooling, discipline, hard work, responsibility, persistence, and future achievement. However, family values are not simply instructions given to children. They are also expressed through the routines, expectations, support, and examples that shape the home environment. Nwanwukwu and Asiyai (2024) found that aspects of family background were related to students' academic experiences and achievement in Delta State, while Egbule and Joseph (2024) showed that parental involvement was important in the relationship between intrinsic motivation and academic performance. These findings suggest that what families value is often communicated indirectly through the way parents support, monitor, and respond to their children's academic experiences.

The influence of family values becomes clearer when these values are viewed as something students gradually absorb rather than simply obey. Egbo et al. (2024) found that family climate was related to academic achievement motivation, indicating that students' desire to succeed may be shaped by the emotional and behavioural atmosphere of the home. Similarly, Cecalupo et al. (2026) found that parents' educational values were associated with students' own educational values, self-beliefs, and expectations. This suggests that family values can become part of the student's internal academic orientation over time. Yet this influence is not always automatic. A family may value education strongly, but if those values are communicated mainly through pressure or unrealistic expectations, the effect may be different from a home where academic expectations are combined with encouragement and support. Family values are therefore best understood as a set of beliefs and practices that shape how students interpret education, effort, responsibility, and success. In this study, family values refer to the beliefs and practices within the home that promote discipline, hard work, responsibility, educational commitment, and positive expectations toward academic achievement.

Concept of Environmental Factors

Environmental factors refer to the physical, social, and instructional conditions that surround students and shape the way they experience learning. These factors include the quality of classrooms, availability of learning resources, teacher support, peer relationships, school safety, classroom organization, and the general climate of the school. Their influence is important because motivation and learning do not take place in isolation. Urien and Courage (2024) found that the learning environment was related to students' motivation to learn in Delta State, while Tibi et al. (2023) highlighted the importance of school climate in shaping students' academic experiences and outcomes. Together, these findings suggest that even highly motivated students may struggle when the environment is poorly organized, unsupportive, or lacking in basic learning resources.

At the same time, environmental factors should not be reduced to physical facilities alone. The quality of relationships within the school can be just as important as buildings or instructional materials. Owoyemi (2024) found that teacher support, classroom rules, and access to instructional resources contributed to students' motivation, showing that students respond not only to what is available in the school but also to how learning is organized and supported. Verner-Filion et al. (2023) similarly found that positive perceptions of school climate were associated with increases in self-determined academic motivation over time. These findings reinforce the idea that environmental factors operate through both structure and experience.

A well-equipped school may still fail to motivate students if relationships are poor, while a less-resourced school may still support motivation where students experience fairness, encouragement, and meaningful interaction. Environmental factors are therefore best understood as the combined physical, social, and instructional conditions that can either strengthen or weaken students' willingness to engage with learning. In this study, environmental factors refer to school climate, teacher support, peer relationships, classroom conditions, and access to learning resources that may influence students' academic motivation.

Review of Empirical Studies

Yahya, et al., (2022) investigated the influence of parental support and achievement motivation on the academic performance of secondary school Islamic Studies students in Lagos State. The study was carried out in Lagos State Education District V, where the population consisted of 31,703 Islamic Religious Studies students drawn from 68 public senior secondary schools. From this population, 400 Senior Secondary Two students were selected from 10 randomly chosen schools, using simple random sampling and the Krejcie and Morgan sampling guide.

The study adopted a descriptive survey research design, while questionnaire served as the instrument for data collection. The data were analyzed using descriptive statistics and linear regression at the 0.05 level of significance. The findings revealed that students reported high levels of parental support and achievement motivation, although these variables did not significantly predict academic performance. This study is important to the present study because it suggests that family support may strongly exist in students' academic lives, even when its effect on performance may not always be direct or immediate.

Akindipe (2025) carried out a study on parental involvement intervention and its effect on students' self-efficacy and mathematics achievement among a Nigerian sample. The study was conducted in Lagos Educational District III, Nigeria, using two private elementary schools. The participants were 51 fifth-grade pupils between the ages of 9 and 14 who initially showed low parental involvement scores. The study adopted a quasi-experimental research design, with one school assigned as the intervention group and the other as the control group.

The instruments used for data collection included a parental involvement scale, a mathematics self-efficacy scale adapted from the Motivated Strategies for Learning Questionnaire, and a 20-item mathematics achievement test. Data were analyzed using ANCOVA and independent t-test. The findings showed that parental involvement intervention significantly improved pupils' mathematics achievement, although it did not significantly improve their self-efficacy. This study is relevant because it demonstrates that planned home support, parental supervision, and effective school-family communication can improve students' learning outcomes and strengthen the importance of family values in education.

Adesua (2023) examined how motivating factors contribute to the academic performance of senior secondary school students in South-West Nigeria. The study was carried out among senior secondary school students in the South-West region, with Osun, Ondo, and Ekiti States selected through simple random and multistage sampling procedures. The study adopted a descriptive survey research design. The instrument used for data collection was a questionnaire titled Motivation and Academic Performance of Students (MAPS), which had a reliability coefficient of 0.85. Data were analyzed using frequency counts, percentages, standard deviation, and multiple regression.

The findings showed that several environmental and motivational factors, including school climate, classroom environment, physical facilities, instructional materials, peer influence, principal leadership style, and parental support, were significantly related to students' academic performance. The study is relevant to the present study because it emphasizes that students' academic motivation and performance are shaped by the conditions surrounding them, not only by their personal ability.

Obodo and Ani (2025) carried out a study on environmental factors influencing the academic performance of Basic Science students in public secondary schools in Enugu North Local Government Area of Enugu State. The study was conducted in Enugu North LGA, Enugu State, Nigeria, and involved 300 Basic Science students selected from 10 public secondary schools.

The researchers adopted a survey research design. A structured self-administered questionnaire and an academic records extraction form were used to collect data. The instrument was validated by experts, while its reliability was established using Cronbach's alpha, with values of 0.70 and above for the subscales. The findings showed that classroom conditions, science facilities, home environment, and peer influence had

significant relationships with students' academic performance. This study is relevant to the present study because it confirms that both school-based and home-based environmental conditions can affect students' learning behaviour, interest, confidence, and academic engagement.

Research Questions

The following research questions guided the study:

1. What is the relationship between family values and students' academic motivation in secondary schools in Delta North Senatorial District?
2. What is the relationship between environmental factors and students' academic motivation in secondary schools in Delta North Senatorial District?

Hypotheses

The following null hypotheses were formulated for the study:

1. There is no significant relationship between family values and students' academic motivation in secondary schools in Delta North Senatorial District.
2. There is no significant relationship between environmental factors and students' academic motivation in secondary schools in Delta North Senatorial District.

RESEARCH METHODOLOGY

The study employed a correlational research design to determine how family values and environmental factors relate to the academic motivation of Senior Secondary School Two students in Delta North Senatorial District. The population consisted of 15,187 SSS2 students from 159 public secondary schools, from which a sample of 375 students was selected using Krejcie and Morgan's (1970) sample size guide and a multistage sampling technique. Data were gathered using the Family Values, Environmental Factors, and Academic Motivation Questionnaire (FVEFAMQ), which was adapted from established scales and structured on a four-point response format. The instrument was validated by experts and further examined through factor analysis, which yielded 78%, 82% and 72% respectively for the content validity. The reliability was established using Cronbach's alpha, with coefficients ranging from 0.71 to 0.82. Three trained research assistants supported the administration of the questionnaire. Pearson Product Moment Correlation and coefficient of determination were used to answer the research questions, while linear regression analyses tested the hypotheses at the 0.05 level of significance.

Presentation of Results

Research Question 1: What is the relationship between family values and students' academic motivation in secondary schools in Delta North Senatorial District?

Table 4.1: Pearson Product Moment Correlation Coefficient and Coefficient of Determination on family values and students' academic motivation.

Variable	N	r	r ²	r ² %	Decision
Family Values Academic Motivation	375	0.525	0.276	27.6	Positive Moderate Relationship

a. Dependent Variable: Academic Motivation

b. Predictor (constant): Family Values

The result in table 1, shows the r-value of 0.525 as the relationship between family values and students' academic motivation in secondary schools. The coefficient of determination was 0.276 and the amount of contribution of family values on academic motivation of secondary school students was 27.6%. This indicates a positive relationship.

Research Question 2: What is the relationship between environmental factors and students' academic motivation in secondary schools in Delta North Senatorial District?

Table 2: Pearson Product Moment Correlation Coefficient and Coefficient of Determination on environmental factors and students' academic motivation.

Variable	N	r	r ²	r ² %	Decision
Environmental Factors Academic Motivation	375	0.761	0.579	57.9	Positive High Relationship

a. Dependent Variable: Academic Motivation

b. Predictor (constant): Environmental Factors

The result in table 2, shows the r-value of 0.761 as the relationship between environmental factors and students' academic motivation in secondary schools. The coefficient of determination was 0.579 and the amount of contribution of environmental factors on academic motivation of secondary school students was 57.9%. This indicates a positive relationship.

Testing of Hypotheses

Hypothesis 1: There is no significant relationship between family values and students' academic motivation in secondary schools in Delta North Senatorial District.

Table 3: Linear regression analysis on family values and students' academic motivation in secondary schools

Model	Sum of Square	df	Mean Square	F	Sig
Regression	1901.368	1	1901.368	142.23	0.000
Residual	4986.632	373	13.369		
Total	6888.000	374			

$\alpha = 0.05$, $r = 0.525$, $r\text{-square} = 0.276$

a. Dependent Variable: Academic Motivation

b. Predictor (Constant): Family Values

Table 3 shows the F-value of 142.23 and a p-value of 0.000. Testing the null hypothesis at an alpha level of 0.05, the p-value of 0.000 was less than alpha level of 0.05. Thus, the null hypothesis was rejected. This revealed that there was a significant relationship between family values and students' academic motivation in secondary schools in Delta North Senatorial District.

Hypothesis 2: There is no significant relationship between environmental factors and students' academic motivation in secondary schools in Delta North Senatorial District.

Table 4: Linear regression analysis on environmental factors and students' academic motivation in secondary schools

Model	Sum of Square	df	Mean Square	F	Sig
Regression	1242.275	1	1242.275	512.99	0.000
Residual	5645.725	373	15.136		
Total	6888.000	374			

$\alpha = 0.05$, $r = 0.761$, $r\text{-square} = 0.579$

- a. Dependent Variable: Academic Motivation
- b. Predictor (Constant): Environmental Factors

Table 4, shows the F-value of 512.99 and a p-value of 0.000. Testing the null hypothesis at an alpha level of 0.05, the p-value of 0.000 was less than alpha level of 0.05. Thus, the null hypothesis was rejected. This revealed that there was a significant relationship between environmental factors and students' academic motivation in secondary schools in Delta North Senatorial District.

DISCUSSION OF FINDINGS

Family Values and Students' Academic Motivation in Secondary Schools

The finding from research question 1 showed a positive relationship between family values and students' academic motivation, while hypothesis 1 confirmed that the relationship was statistically significant among secondary school students in Delta North Senatorial District. This implies that students raised in homes where education, discipline, hard work, encouragement and respect are consistently emphasized are more likely to show greater interest and commitment to their studies. When parents pay attention to school activities, encourage their children to keep trying and communicate positive expectations about education, students may feel more supported and willing to put effort into learning. The finding agrees with Angwaomaodoko (2023), who reported that parental involvement contributed positively to students' motivation, confidence, attendance and attitude toward learning. In the same direction, Çelik (2024) found that parental autonomy support promoted adolescents' academic motivation by helping to satisfy their psychological needs and strengthen self-control. In contrast, Yahya et al. (2022) found that parental support and achievement motivation did not significantly predict students' academic performance. The difference may suggest that while positive family values can strengthen students' motivation to learn, such motivation may not always translate directly into higher academic performance, especially when other influences such as teacher support, peer relationships, school conditions and individual study habits are involved.

Environmental Factors and Students' Academic Motivation in Secondary Schools

The findings from research question 2 and hypothesis 2 revealed that environmental factors had a positive and significant relationship with students' academic motivation in secondary schools in Delta North Senatorial District. This suggests that students are more likely to develop interest and remain committed to learning when they study in an environment that is safe, supportive, orderly and reasonably provided with the resources needed for learning. When classrooms are comfortable, teachers are supportive, peer relationships are healthy and students feel a sense of belonging, participating in academic activities may become easier and more meaningful. This finding agrees with Urien and Courage (2024), who found a significant relationship between the learning environment and students' motivation to learn among secondary school students in Delta State. Similarly, Cuenca and Genuba (2026) reported that classroom learning environment was significantly related to students' academic motivation, showing that positive classroom experiences can support students' willingness to learn. In contrast, Schweder and Raufelder (2023) showed that the motivational benefits of a learning environment may depend on how well that environment supports students' autonomy, competence and

relatedness. Their finding suggests that merely placing students in a particular instructional environment may not automatically improve motivation. Rather, the quality of support, participation and sense of belonging available within the environment may determine how motivated students become.

Findings

The summary of the findings is as presented below:

- i. There is a significant relationship between family values and students' academic motivation in Secondary Schools in Delta North Senatorial District.
- ii. There is a significant relationship between environmental factors and students' academic motivation in Secondary Schools in Delta North Senatorial District.

CONCLUSION

The study concluded that both family values and environmental factors are important in shaping the academic motivation of secondary school students in Delta North Senatorial District. Students who come from homes where education, discipline, encouragement and hard work are valued are more likely to show greater interest, confidence and commitment to their studies. In the same way, students tend to be more motivated when they learn in school environments that are safe, supportive, orderly and provided with the basic resources needed for meaningful learning. These findings show that academic motivation is not influenced by the student alone but also by the quality of support and experiences available at home and in school. Therefore, improving students' motivation requires a shared effort from parents, teachers and school administrators. When families promote positive educational values and schools provide supportive learning environments, students are more likely to remain engaged, persistent and focused on achieving their academic goals.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Parents should encourage hard work, discipline, and interest in schoolwork. Since family values were significantly related to academic motivation, supportive home practices may help students stay focused and committed.
2. Teachers should create a supportive classroom where students feel respected and encouraged to participate. Positive classroom experiences may help strengthen students' interest and persistence in learning.
3. School administrators should provide safe, comfortable classrooms with basic learning resources. Better school conditions may support stronger academic motivation among students.

Contributions to Knowledge

1. The study has affirmed that family values related to students' academic motivation, indicating that students are motivated through the support of the home.
2. The study has established that environmental factors related to the academic motivation of students through establishment of conducive, quiet and clean learning environment.

Ethical Consideration

Letter of introduction was submitted to the principals of the selected schools after the purpose of the research was discussed with the managements. The students were informed immediately and allowed to participate voluntarily without filling their names on the questionnaire to ensure anonymity and privacy of participants. Students were assured that their responses were purely for research purpose.

Limitation of the Study

The study was limited to SSS2 students in public secondary schools in Delta North Senatorial District, so the findings may not fully reflect students in private schools or other areas. It also relied on questionnaire responses, which may have been influenced by students' personal opinions. In addition, the correlational design only showed relationships among the variables and could not establish cause and effect. Despite these limitations, the study still provides useful insight into the factors linked with students' academic motivation.

REFERENCES

1. Adepoju, A. A., & Pitan, O. S. (2025). Study habit as a predictor of academic motivation among senior secondary school students in Southwest Nigeria. *African Journal of Educational Management*, 26(1), 272–286.
2. Adesua, V. O. (2023). Contribution of motivating factors on academic performance of senior secondary school students in South-West Nigeria. *International Journal of Social Science and Human Research*, 6(6). <https://doi.org/10.47191/ijsshr/v6-i6-28>
3. Akindipe, O. O. (2025). Parental involvement intervention: Effect on students' self-efficacy and math achievement among a Nigerian sample. *Frontiers in Psychology*, 16, 1589069. <https://doi.org/10.3389/fpsyg.2025.1589069>
4. Angwaomadoko, E. A. (2023). The impact of parental involvement on students' academic achievement in Nigeria: A case study of parents in Asaba, Delta State. *International Journal of Education*, 15(4), 37–56. <https://doi.org/10.5296/ije.v15i4.20981>
5. Cecalupo, A., Scarci, F., Marini, M., Prislei, L., Parisse, C., Sorvillo, S., & Livi, S. (2026). School and its educational value: The role of parental influences in shaping adolescents' values, academic beliefs, and expectations. *Social Psychology of Education*, 29, Article 8. <https://doi.org/10.1007/s11218-026-10177-2>
6. Çelik, O. (2024). Academic motivation in adolescents: The role of parental autonomy support, psychological needs satisfaction and self-control. *Frontiers in Psychology*, 15, 1384695. <https://doi.org/10.3389/fpsyg.2024.1384695>
7. Cuenca, W. E., Jr., & Genuba, R. L. (2026). The mediating role of classroom learning environment on the relationship between social skills and academic motivation. *International Journal of Research and Innovation in Social Science*, 10(3), 6931–6948. <https://doi.org/10.47772/IJRISS.2026.100300506>
8. Egbo, J. O., Omeje, J. C., & Nwefuru, B. C. (2024). Family climate and peer pressure as predictors of academic achievement motivation of secondary school students in Enugu State, Nigeria. *International Journal of Psychosocial Rehabilitation*, 25(2), 944–957. <https://doi.org/10.61841/rqtm9c02>
9. Egbule, E. O., & Joseph, O. (2024). The mediating impact of parental involvement between intrinsic motivation and academic performance among Upper II Basic students in Delta State. *International Journal of Scientific Research in Multidisciplinary Studies*, 10(6), 22–27.
10. Nwanwukwu, L., & Asiyai, R. I. (2024). Influence of family background on academic achievement of students in Delta State, Nigeria. *International Journal of Research and Innovation in Social Science*, 8(3), 312–320. <https://doi.org/10.47772/IJRISS.2024.803022>
11. Obodo, A. C., & Ani, M. I. (2025). Assessing environmental factors influencing academic performance of Basic Science students in public secondary schools in Enugu North LGA, Enugu State. *Greener Journal of Educational Research*, 15(1), 199–208. <https://doi.org/10.15580/GJER.2025.1.091625137>
12. Okigbo, E. C., & Onoshakpokaiye, O. E. (2023). Relationship between academic motivation and academic performance of secondary school students in mathematics. *Indonesian Journal of Learning Education and Counseling*, 6(1), 10–16. <https://doi.org/10.31960/ijolec.v6i1.2058>
13. Owoyemi, M. A. (2024). School-related factors and junior secondary school student's motivation towards learning in Ogun State, Nigeria. *Journal of Capital Development in Behavioural Sciences*, 12(1), 113–123.
14. Pinneo, L., & Nolen, A. (2024). Parent involvement and student academic motivation towards science in 9th grade. *Humanities and Social Sciences Communications*, 11, 273. <https://doi.org/10.1057/s41599-024-02707-0>

15. Schweder, S., & Raufelder, D. (2023). Does changing learning environments affect student motivation? *Learning and Instruction*, 89, 101829. <https://doi.org/10.1016/j.learninstruc.2023.101829>
16. Tibi, P., Chenube, O., & Omumu, F. (2023). Counselling implications of school climate and learning outcomes of students in senior secondary schools in Delta State, Southern Nigeria. *International Journal of Social Sciences*, 6(4), 212–221. <https://doi.org/10.21744/ijss.v6n4.2217>
17. Urien, J. O., & Courage, S. E. (2024). Students' motivation to learn: Is the learning environment of secondary schools a factor in Delta State? *International Journal of Research Publication and Reviews*, 5(3), 672–680. <https://doi.org/10.55248/gengpi.5.0324.0626>
18. Verner-Filion, J., Véronneau, M.-H., Vaillancourt, M.-C., & Mathys, C. (2023). Perceived school climate and school grades in secondary school students: The mediating effect of self-determined motivation. *Contemporary Educational Psychology*, 74, 102202. <https://doi.org/10.1016/j.cedpsych.2023.102202>
19. Yahya, I. O., Khadijah, O.-S., & Adekunle, A. U. (2022). Influence of parental support and achievement motivation on academic performance of secondary school Islamic Studies students in Lagos State. *Journal of Applied Science, Engineering, Technology, and Education*, 4(2), 236–245. <https://doi.org/10.35877/454RI.asci1443>
20. Zhao, L., & Zhao, W. (2022). Impacts of family environment on adolescents' academic achievement: The role of peer interaction quality and educational expectation gap. *Frontiers in Psychology*, 13, 911959. <https://doi.org/10.3389/fpsyg.2022.911959>