

Impact of socio-economic status on national certificate of education (NCE) three students in the biology department college of education Maru Nigeria

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Abstract

Education is a key component of the social pillar of Nigeria Vision 2030. Nigeria Vision 2030 identifies training and education as transforming Nigeria's economy into one with a middle class. Socioeconomic position's effect on student academic achievement has been recognized globally. Therefore, this study examined how their socioeconomic status impacted NCE III students' academic achievement in the School of Science at the College of Education, Maru, and Zamfara state. This study examined the effects of parents' educational attainment, family size, marital status, and family finances on students' academic performance in the School of Science Education at the College of Education. A descriptive research design was employed in the study. The study's target population comprised two hundred NCE I and II students. 200 students were chosen for the study's sample using a proportionate stratified random selection technique. A questionnaire and a student interview schedule were used to gather data. The results of the data's quantitative and qualitative analysis were presented using frequencies. This research demonstrated that students believed the price of dorm rooms, catering facilities, and activities depended on their socioeconomic status because low-income students were not given adequate access to information, communication, and technology resources. Furthermore, the results indicated that academic accomplishment was influenced by the cohesive or conflictive nature of the family, while the parents' marital status did not significantly explain students' academic performance. The recommendations were based on the results.

Keywords: Socio-Economic Status, Academic Achievement, National Certificate of Education Three Student

Introduction

The best gift a country can give its people, especially its young people, is education. This is because the quality of education in any given country has a major role in that nation's growth, and it is widely accepted that the development of human resources is the first step in any real development (Adeyemo 2014; Fomba, & Ningaye, 2023). Prolonged military rule and the collapse of civilian governments have also shown that formal education is still the means of socioeconomic development and social mobilization, requiring the issuance of decrees, edicts, and levels. This resulted in an uneven

continuation of administration, which underlined the discontinuity in applying educational laws and programs from the 1970s to the present (Orhero, & Okolie, 2023).

This progressively set the stage for declining standards in elementary and secondary education (Shittu, 2004). Education has frequently experienced cabinet and commissioner changes under succeeding administrations, and political groups that have entered the national political arena have politicized education. The year 1979, has also resulted in differences in educational approaches, which have generated variations in

state-to-state academic performance and teacher and student functioning in the classroom. According to Olotu (2010), to survive in the world, the nation needs to create several socioeconomic and educational policies and programs, such as structural adjustment to create programs (SAP), austerity measures, universal primary education (UPE), universal basic education (UBE), and devaluation of the naira.

These initiatives have not resulted in an improvement in the nation's families' socioeconomic and educational status. Instead, they have made them more miserable and caused the socioeconomic divide to expand across families (Kosunen, Haltia, Saari, Jokila, Halmkrona, 2021), this bemoaned the harsh realities that force parents to forgo housing, clothes, and special education necessities for their kids. These necessities include textbooks, school uniforms, and quality medical care. Additionally, due to the nation's low socioeconomic status, and high rate of illiteracy, numerous farmers and other rural dwellers find themselves in dire financial situations due to the high proportion of paternal and maternal deprivation of their children's academic demands (Kosunen, et al., 2021). In addition, many people who live in rural and suburban areas can no longer afford to pay their children's tuition so they can work as housemaids or in other mentally taxing vocations, engage in subsistence farming, or pursue other academic endeavors. As a result, many students now view their education as a secondary task, and their presence at school is justified (Williams, Bitar, Polk, Nguyen, Montague, Gillispie, Elliott, 2022). Therefore, the issue arises from this low academic performance in school exams. The West Africa Examination Council (WAEC) and the National Examinations Council (NECO) have caused significant issues for parents, political parties, the government, and other education stakeholders. Therefore, in the School of Science at Zamfara State College of Education, Maru, this study investigates the impact of

socioeconomic background on the academic achievement of National Certificate in Education (NCE) students. It is impossible to overstate the significance of the research findings in the educational system.

The government as a whole, parents, teachers, and students themselves would all profit from the study's findings if they are appropriately applied. The results will introduce the pupils to a range of connections between academic success and socioeconomic origins. The study's findings will assist parents in realizing the need to provide their school-age children with appropriate parental care. Given that the students' parents are not alike, it will teach the lecturers how to care for them. It will assist the administration of the school in modifying more than simply the schedule and exam period. By learning about this research, the government would be better equipped to help school administrators with funding.

Parents, lawmakers, and government agencies are all becoming more aware of how important it is for pupils to perform well in school as the competition for jobs in the working world becomes more intense. Academic achievement among students, particularly in secondary school, has been a disappointing indicator of school success. Numerous studies and surveys, such as the Federal Ministry of Education's 1980–1984 education statistics in Lagos, the report published in *This Day Newspaper* (Nigeria) on April 3, 2006/July 12, 2009, *The Guardian* (Nigeria) on February 19, 2011, and *All Africa Communication Nigeria* on January 28, 2011, among others, as well as numerous editorials in Nigerian daily newspapers, all indicate that academic achievement among secondary school students in Nigeria has been declining for some time. In many government and institutional quarters, this downward trend in academic achievement has been met with fear and concern.

Moreover, numerous educational researchers have linked this decline to several factors, such as social factors, school-related factors, parental socioeconomic status, and so forth. Research has demonstrated a strong relationship between academic achievement across all levels and courses and socioeconomic position (Muhammad, et al., 2019; Williams, 2022). According to Daramola (2010), a parent's occupation, attitude toward their child's education, and values instilled in them are all elements that impact a child's educational success (Amal, Rambe, Ampera, Purba, & Ridho, 2022), whereas, Tahir, Ishfaq, Begum, & Sharjeel, (2021) found that children from poor socioeconomic backgrounds outperformed students from high and intermediate socioeconomic backgrounds in some academic courses and that there was no discernible difference in the academic achievement of students from families with diverse family sizes and configurations or those that were monogamous or polygamous. On the other hand, Nwatahs (2011) and Tahir, Ishfaq, Begum, and Sharjeel (2021) noted that socioeconomic status, which includes factors like occupation, income, educational attainment, family structure, and size, may have a distinct impact on educational outcomes. Children from low socioeconomic status families are more likely to struggle academically, have lower reading levels, and exhibit negative attitudes in the classroom. Put another way, parental socioeconomic standing has a significant influence on a child's ability to succeed in school. However, some scholars contend that rather than intellectual achievement, school attendance is determined by socioeconomic class.

Little and Thompson (2011) pointed out that the problems that cause children to fail may not always be the child's fault but rather the fault of the educational system as a whole and the school specifically. Lockheed and Komenan (2012), however, found that, in the context of a control group, school features have a considerable impact on academic achievement, and, frequently, these

effects outweigh those of family background. Given that schools can be found in both rural and urban settings, their location has a big impact on students' academic performance. According to Ezewu (2011), a child's ability to learn and perform at the level expected of him is influenced by the school's location—rural or urban. Students learn best in an exciting environment, especially when it comes to science. As a result, how engaged a student is in the classroom has an impact on his academic performance.

According to Mkpugbe (2012), certain elements of the educational setting have an impact on students' academic performance. She added that most rural schools in Nigeria lack basic amenities, adequate staffing, and adequate equipment, all of which are barriers to high academic performance. However, Lace and Ratter (2011) discovered that while several research findings indicate that social, familial, and personal characteristics of students play a role in academic failures, these findings have little bearing on how school policy and practice are shaped. Therefore, they believed that rather than attempting to pinpoint the elements that are least changeable, research efforts should be better directed towards comprehending the features of the school and how these affect the academic accomplishment of the students. Social factors that have been found to affect students' academic achievement include romantic relationships, membership in organizations, and involvement in sports (UME, 2007).

These social factors influence students' psychological well-being and the amount of time needed to achieve academic goals (Lave, 2021). Additionally, they could persuade the pupil to engage in any of the social factors. In a 2001 study, Quitman examined dating behavior, academic performance, and motivation in Californian high schools. She found that students who dated more frequently performed worse academically and that there was a strong correlation between dating

behavior and academic success, which can lead to major issues for students. Paul (2013) examined extracurricular activity participation and academic achievement in school settings and found that extracurricular activities and academic achievement were highly correlated. This supported the hypothesis put forward by Nell (2015) and Wang et al. (2023), which produced positive results nationwide on the idea that "more involvement in school activities means, a better grade point average" in the school.

Paul's findings support organizations and clubs as social factors that affect academic achievement. Regarding student cults, UME (2007) stated that members are typically drawn in with promises of privileges that they will never receive, leaving them to deal with the demands of school alone, which ultimately lowers their academic achievement. Students cannot strike a balance between cult membership and academic achievement. Academic accomplishment is generally influenced by a variety of social issues, including politics, religion, media, peer pressure, culture, gender, and family. Social factors have an impact on motivation and are therefore seen as mediating variables that impact motivation. They can have a good or negative impact on motivational levels, which in turn influences academic accomplishment.

To analyze a family's socio-economic status, the household income earners' education and occupation are looked at, as well as their combined income when their attributes are assessed. Socio-socioeconomic status (SES) is an economic and sociological combined total measure of a person's work experience and an individual or family's economic and social position towards others (Wikipedia, 2010). According to the American Psychological Association (2011), a person's socioeconomic position refers to their class or social standing. It is frequently assessed using a formula that combines occupation, income, and education. According to Paul (2013), a family's socioeconomic

standing is determined by their income, the educational attainment and employment status of their parents, as well as their social standing in the community, which includes their contacts with local groups and how the society views them. Sociologists frequently utilize socioeconomic status as a way of behavior prediction, and exemptions from socioeconomic norms frequently manifest in concerns connected to privilege, power, and control, as well as access to resources.

Sociologists frequently employ socioeconomic status, which is closely connected with a variety of parameters, including children's IQ, cognitive ability, academic accomplishment, diet quality in healthcare, etc. High, middle, and low socioeconomic levels are the three categories that are commonly used to categorize socioeconomic status. Any or all three variables (income, education, and occupation) can be evaluated when categorizing a family or an individual. Wealth, a fourth indicator, can also be looked at to determine socioeconomic position. Wages, salaries, profits, rents, and any other flow of money received are all considered forms of income (Wikipedia, 2010; Kosunen, et al., 2021). Other forms of income include social security, workers' compensation, unemployment, dividends, royalties, trusts, and other forms of financial aid from the government, the public, or families. Income is not always fixed. Economists refer to this relationship as absolute income, which states that while income rises, consumption does not follow suit. Instead, relative income determines a person's or family's savings and consumption depending on the income of others in the household (Waters, Ahmed, Tang, Morrison, & Davis-Kean, 2021).

Since most people can easily calculate their income, it is a widely used indicator of socioeconomic position. Since it is relatively simple to calculate, income inequality is most frequently measured around the Gin coefficient, where zero denotes perfect equality and one denotes perfect inequality. This makes income inequality the most

widely used indicator of socioeconomic status. Low-income families prioritize taking care of their immediate needs rather than building capital to be passed down to future generations, which exacerbates inequality. Families that earn more money and are more disposable can amass wealth, prioritize taking care of their necessities, indulge in luxury, and weather financial hardships (Kermes, 2009). Prestige in one's line of work is considered a measure of socioeconomic standing. The term "occupational status" describes the educational backgrounds that differ between employment and between occupational ranks. It also demonstrates mastery of the abilities needed for the position.

According to Jimoh (2014), surveys of the general public's opinions and the census, among other organizations, are used to rank vocations. Some of the most prestigious professions, such as medicine and surgery, are regarded as belonging to higher socioeconomic status categories and offer more control over working conditions, whereas jobs with a lower ranking, such as nursing, belong to lower socioeconomic status categories, are more physically demanding, highly dangerous, and offer less autonomy.

According to reports and observations from exams taken at Zamfara State College of Education, Maru's School of Science, a significant portion of pupils still receive low scores on biology exams (Nell, 2004; Muhammad, 2023).

Lack of parental supervision, poverty, and disinterest in education are likely contributing causes to this low achievement (Mkpugbe, 2014; Barth, 2024). This study aimed to examine how much these factors influence the biology achievement of students at Zamfara State College of Education, Maru's School of Science.

- 1) To find out the effect of the socio-economic status of biology students on their academic achievement in the School of Science, ZCOE.
- 2) To examine the influence of parents' educational background on student academic achievement in the school of science, ZCOE.

Methodology

In this study, a descriptive survey research design was used to gather data and findings collected from textbooks, the internet, and through direct interviews. This enables the researchers to collect relevant data to answer the question of the study. This research covered a population of two hundred (200) students currently studying at the hundred level at the School of Science at Zamfara State College of Education, Maru. According to the HOD of Bio/ISC NCE II, there are One hundred and twenty-five (125) students in Biology/Integrated science combination from which seventy-five (75) students are the respondents. Moreover, according to the Head of Department (HOD) of Bio/ISC NCE I, there are one hundred and eight (108) students in Bio/ISC of which thirty-five (35) students are the respondents. Purposive sampling techniques were used in the study conducted. The Department of Biology comprises two levels, which are NCE I and NCE II. Ninety (90) participants (respondents) were drawn from the total population of one hundred and twenty-five (125) students from NCE II and one hundred and eight (108) from NCE I. Table 1 below elaborate more on the total population and samples used in the study:

Objectives of the Study

This research work aimed at the following:

Table 1. Total population and samples used in the study

Combination	Population	Sample
Department of Biology Integrated Science		
Bio/Isc NCE 2	233	110
Department of Biology		
Biology NCE 1 & 2	125	90
Total	358	200

The instrument used in gathering data for this study was a close-ended questionnaire, this was to ensure that the items in the questionnaire reflected the hypotheses of the study. The questionnaire consists of 2 sections i.e. sections A and B. Section A deals with the personal data of the respondent while section B is the main body of the question.

To determine the validity of the research instrument used, the questionnaire was verified by an expert in the Zamfara State College of Education's Department of Biology. This allowed for the acquisition of an unbiased assessment and indicated the extent to which the instrument fulfills its intended purpose, after which its content was modified to ensure validity. The degree to which the questionnaire produces consistent findings after multiple attempts is what determines its reliability. Twenty-five students in (NCE II), who were not part of the sample, were given the questionnaire to determine the validity of the research instruments used. Students who weren't among the primary responders participated in pilot research using the test-retest methodology. With a dependability index of 0.75, it was determined that the instrument was reliable. The instruments/questionnaire would be distributed to the respondents in the sample schools by the researchers and were collected immediately after completion with the assistance of a course tutor. As such, the collected data was analyzed using a simple frequency table and percentage.

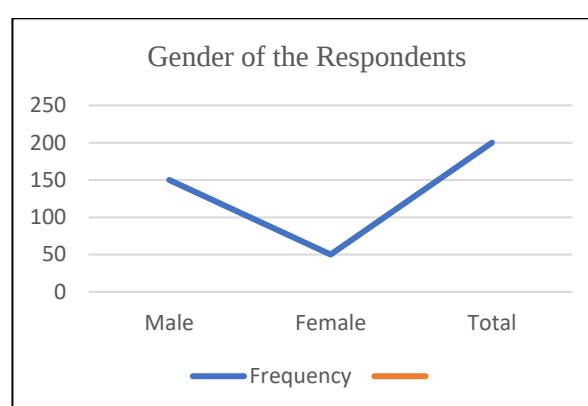
Results of the Study

The results of the study were described below:

Table 2. The gender of the respondents

Gender	Frequency	Percentage (%)
Male	150	75
Female	50	25

Table 2 above shows that 25% of respondents are female and 75% of respondents are male. This indicates that men make up the majority of the respondents. Further information regarding the gender of the respondents who took part in the study is shown in Figure 1 below.

**Figure 1.** The gender of the respondents**Table 3:** Level of the respondents

Level	Frequency	Percentage (%)
NCE I	75	37.5
NCE II	125	63.5
Total	200	100

Table 3 shows that 63.5% of the respondents are NCE II and 37.5% of the respondents are NCE I. This indicates that NCE II students make up the majority of those who answered this question. More information on the genders of the respondents who took part in the study is included in Figure 1 below.

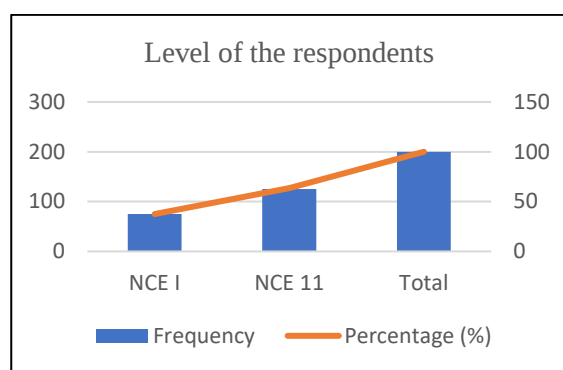


Figure 2. Level of the respondents

Objective one: To find out the effect of the socio-economic status of biology students on their academic achievement in the School of Science, ZCOE

Response to Question One: Students from educated families understand more than those from uneducated families.

Table 4. The students from educated families understand more than those from uneducated families

Respondents	No of Respondents		Total	Percentage (%)
Gender	Male	Female		
Strongly Agree	90	20	110	55
Agree	20	3	23	11.5
Undecided	10	7	17	8.5
Disagree	15	10	25	12.5
Strongly Disagree	15	10	25	12.5
Total	150	50	200	100

Table 4 above indicates that 200 students answered in the affirmative to the statement, "Students from educated families understand more than those from uneducated families," based on Table 3 above. As we can see, 55% of the students strongly agreed with the statement, followed by 11.5% who agreed, 8.5% who were unsure, 12.5% who disagreed, and 12.5% who severely disagreed. Based on the outcome, we may deduce that most of the ZCOE students. We believe

that a parental educational background affects the academic achievement of their child. These conclusions/results agree with, contradict, or are congruent with those of Muhammad (2019).

Response to Question Two: Parents' regular counseling to students improves science students' academic performance. The analysis of the result obtained due to question two showed the following details.

Table 5. Parent counseling to students improves science students' academic performance

Respondent	No of Respondents	Percentage (%)
Strongly agree	130	65
Agree	35	17.5
Undecided	10	5
Disagree	5	2.5
Strongly disagree	20	10
Total	200	100

Table 5 above shows that over 50% of Zamfara State College of Education, Maru students believe they receive regular parental counseling to improve their effectiveness in studying science. This finding supports Quitman's (2001) research, which highlights the positive impact of parental guidance on academic performance.

Response to Question Three: My parents have a good relationship with my teachers

Table 6. The parents have a good relationship with my teacher

Respondent	No of Respondents	Percentage (%)
Strongly agree	140	70
Agree	17	8.5
Undecided	13	6.5
Disagree	5	2.5
Strongly disagree	25	12.5
Total	200	100

Table 6 indicates that fostering a strong relationship between parents and lecturers is essential for enhancing students' academic performance. A lack of unity between these two groups can negatively impact learners, as evidenced by the sentiment expressed in the statement, "My parents have a good relationship with my teachers." Recent research supports the notion that effective communication and collaboration between parents and educators significantly contribute to student success.

Response to Question Four. My parents motivate me by providing me with adequate learning materials such as handouts, textbooks, etc.

Table 7. My parent motivates me by providing me with adequate learning material such as handouts, and textbooks.

Respondent	No of Respondents	Percentage (%)
Strongly agree	115	57.5
Agree	20	10
Undecided	15	7.5
Disagree	15	7.5
Strongly disagree	35	17.5
Total	200	100

Table 7 indicates that, despite challenges such as poverty, a significant number of parents in the Maru local government area provide their children with access to essential educational resources for studying science. Notably, 57.5% of students reported that their parents meet their educational resource needs, including handouts and textbooks. This suggests that parents play a crucial role in motivating their children to engage with science by ensuring they have the necessary learning materials. Supporting this perspective, recent research demonstrates that parental involvement positively influences students' academic success.

Objective Two: To examine the influence of parents' educational background on student academic achievement in the School of Science, ZCOE

Response to Question Five: My parents asked me to read what I was taught in school every day

Table 8. My parents asked me to read what I was taught in school every day

Respondent	No of Respondents	Percentage (%)
Strongly agree	130	65
Agree	35	17.5
Undecided	10	5
Disagree	5	2.5
Strongly disagree	20	10
Total	200	100

The results of question five indicate that parental involvement can be a crucial factor in enhancing students' academic performance. Table 8 reveals that 65% of respondents agreed that their parents encourage them to read the material covered in school each day. This finding underscores the significant role that parents in the Maru area play in supporting their children's academic achievement and reflects their concern for educational outcomes. Recent research supports the idea that parental engagement positively affects student achievement.

Response to Question Six: I learn more from my parents after school hours

Table 9. I learn more from my parents after school hours

Respondent	No of Respondents	Percentage (%)
Strongly agree	125	62.5
Agree	35	17.5
Undecided	20	10
Disagree	13	6.5
Strongly disagree	7	3.5
Total	200	100

Educated or literate parents of students at Zamfara State College of Education, Maru, dedicate significant time each day to engage with their children about their studies, providing teaching, guidance, and correction of mistakes. As demonstrated in Table 9, 62.5% of the 200 surveyed students strongly agreed with the statement, "I learn more from my parents after school hours," while only 10% indicated they did not benefit from parental involvement.

Response to Question Seven: I hope to continue learning after my NCE program

Table 10. I hope to continue learning after my N.C.E program

Respondent	No Respondents	of	Percentage (%)
Strongly agree	125		62.5
Agree	20		10
Undecided	15		7.5
Disagree	15		7.5
Strongly disagree	25		12.5
Total	200		100

The results from Table 10 indicate that 62.5% of the 200 sampled students expressed a desire to pursue further studies after completing their National Certificate in Education (NCE) program. This aspiration may stem from their intrinsic interest in education or from expectations regarding parental support.

Response to Question Eight: The best way to succeed is through school

Table 11. Do you think the best way to succeed is through school?

Respondents	No Respondents	of	Percentage (%)
Strongly agree	100		50
Agree	25		12.5
Undecided	25		12.5
Disagree	15		7.6

Strongly disagree	35	17.5
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Table 11 highlights the importance parents place on education, indicating that educated parents are likely to emphasize that education is a key factor for success. The data shows a correlation with findings by Muhammad et al. (2019), who reported that parents tend to have a greater interest in enrolling their children in science programs because they believe education is the most effective pathway to success. Supporting this perspective, recent research underscores the critical role that parents play in shaping their children's educational aspirations.

Response to Question Nine: My parents admire people who go to higher institutions

Table 12. My parents admire people who go to higher institutions

Respondent	No Respondents	of	Percentage (%)
Strongly agree	130		65
Agree	15		7.5
Undecided	20		10
Disagree	5		5
Strongly disagree	30		15
Total	200		100

Thus, the analysis of Table 12 reveals that 65% of parents in Maru Local Government admire individuals who attend higher institutions, significantly higher than the 7.5% who do not share this admiration. Additionally, 10% of parents expressed indifference by neither agreeing nor disagreeing, while only 5% explicitly stated the opposite. This admiration fosters a positive environment that enhances children's interest in learning and contributes to improved academic performance.

Response to Question Ten: My father gives me a special gift, for my good performance in school

Table 13. My father gives me a special gift, for my good performance in school

Respondent	No of Respondents	Percentage (%)
Strongly agree	118	59
Agree	22	11
Undecided	8	4
Disagree	12	6
Strongly disagree	40	20
Total	200	100

From Table 13, 118 out of 200 students strongly agreed with the statement that their fathers provide gifts for their wonderful performance in school. The result illustrates that the science students in Zamfara State College of Education, Maru are motivated by their parents, this motivation results from the support and encouragement they engage from the parents as they give them gifts for a wonderful performance in school, this finding is in support of the findings by Muhammad et al. (2019) who found similar results. Table 13 shows that 118 out of 200 students (59%) strongly agreed with the statement that their fathers provide gifts for their outstanding academic performance. This finding suggests that parents, particularly fathers, play a significant role in motivating science students at Zamfara State College of Education, Maru, by rewarding their achievements. This motivation stems from the support and encouragement parents offer, reinforcing positive academic behaviors.

Discussion of the Findings

The findings of the study were discussed based on the two objectives of the study which were described below.

Objective one: To find out the effect of the socio-economic status of biology students on their academic achievement in the School of Science, ZCOE

Response to Question One: Students from educated families understand more than uneducated families.

Extensive studies support this view, showing that parental education strongly predicts academic outcomes due to increased access to resources and higher parental involvement (Wilder, 2023). Additionally, educated parents tend to set higher educational aspirations for their children (Navarro-Carrillo, Alonso-Ferres, Moya, et al., 2020), while socioeconomic factors also play a crucial role (Li, Wang, Kang, Wang, 2022). However, academic success is influenced by factors beyond parental education, such as individual motivation (Kim, Y., Mok, & Seidel, 2020), the quality of the educational environment cultural attitudes toward education, and support systems for disadvantaged students (Alam, & Mohanty, 2023). This research highlights the complexity of academic achievement and the various influences that shape it, offering insights for educators and policymakers aiming to improve educational outcomes globally.

Response to Question Two: Parents' regular counseling to students improves science students' academic performance. The analysis of the result obtained due to question two showed the following details.

This finding supports Farooq and Asim (2020) research, which highlights the positive impact of parental guidance on academic performance. However, it's important to consider contrasting views. While parental counseling is beneficial, individual characteristics like intrinsic motivation also play a vital role in academic success Kong and Wang, (2021). Furthermore, the quality of educational environments can diminish the impact of parental support; effective school practices positively influence students from less-supported backgrounds (Xiao, Romanelli, Vélez-Grau, 2021). This analysis investigates how socio-economic status affects biology students, examining the relationship between parental involvement, student motivation, and educational outcomes in

the School of Science at ZCOE. It thereby contributes to the broader discussion on educational effectiveness and equity.

Response to Question Three: My parents have a good relationship with my teachers

For instance, a study by Hoff, and Laursen, (2019) emphasizes that strong home-school partnerships lead to improved student engagement and academic outcomes. Additionally, Yulianti, Denessen, and Droop (2022) found that parental involvement in education, particularly through positive relationships with teachers, enhances students' motivation and achievement. This collaboration can also help identify and address students' individual needs more effectively. Conversely, contrasting findings suggest that while parental involvement is generally beneficial, its effectiveness can be influenced by factors such as cultural differences and socioeconomic status. Kim, Cho, and Kim, (2019) note that the impact of parental involvement may vary across different cultural contexts, where some families may not engage with schools due to language barriers or differing educational values. Additionally, Kim, Cho, and Kim, (2019) emphasizes that socioeconomic status can affect how families interact with educational institutions, potentially limiting their ability to form strong relationships with teachers.

Response to Question Four. My parents motivate me by providing me with adequate learning materials such as handouts, textbooks, etc.

For instance, a study by Wang and Sheikh-Khalil (2014) found that students whose parents are actively involved in their education achieve higher academic outcomes, particularly when parents provide the necessary resources. Furthermore, Hill and Tyson (2009) highlighted that when parents supply educational materials, it fosters greater student engagement and motivation. Conversely, contrasting findings suggest that merely providing resources may not be sufficient for academic

success. Sirin (2005) notes that socioeconomic factors can affect how well students utilize the resources provided. Additionally, research by Pintrich and Schunk (2002) indicates that student motivation and self-regulation are critical for academic achievement, suggesting that even with adequate materials, without intrinsic motivation, students may struggle to achieve their potential. In summary, while the provision of educational resources by parents in the Maru local government area significantly impacts students' motivation and study habits, the effectiveness of these resources can vary based on factors such as socioeconomic status and intrinsic motivation.

Objective Two: To examine the influence of parents' educational background on student academic achievement in the School of Science, ZCOE

Response to Question Five: My parents asked me to read what I was taught in school every day

For instance, a study by Zenda, (2021) found that parental encouragement plays a vital role in students' academic success, including their retention of information and motivation to engage with schoolwork. Additionally, Segoe, and Bisschoff, (2019), highlighted that when parents actively promote daily study habits, it contributes to better academic performance and higher levels of student accountability. However, contrasting findings suggest that the effectiveness of such parental involvement can vary depending on factors such as socioeconomic status and the educational background of the parents. Moreover, research by Schmid, and Garrels, (2021) indicates that the impact of parental involvement is also influenced by the quality of parental education; parents with higher educational attainment tend to provide more effective academic support compared to those with lower educational backgrounds. This complexity suggests that while parental encouragement is beneficial, the outcomes can be significantly shaped by contextual factors. In summary, while the encouragement

from parents in Maru for daily reading correlates with improved academic performance, the varying impact of parental educational background and socioeconomic factors must be considered in any analysis of student achievement within the School of Science at ZCOE.

Response to Question Six: I learn more from my parents after school hours

These findings are consistent with Wilder, (2023) research, which highlights the positive impact of parental engagement on student learning. Supporting these outcomes, recent studies emphasize the vital role parents play in their children's education. For example, Otani, (2020). found that parental involvement directly correlates with improved academic performance, as parents who engage actively in their children's learning help them develop better study habits and attitudes toward education. Additionally, Wilder, (2023) demonstrated that children with supportive families show greater academic success due to the encouragement and resources provided at home. However, contrasting perspectives suggest that the benefits of parental involvement can vary significantly based on socioeconomic and cultural factors. Navarro-Carrillo, Alonso-Ferres, et al., (2020) noted that external circumstances, such as parental stress due to financial difficulties, can affect the quality of parental support provided, potentially limiting its effectiveness. Furthermore, research by Farooq, and Asim, I. (2020). indicates that while parental engagement is generally beneficial, its impact may be less pronounced in environments where educational resources are scarce or when parents themselves have limited educational backgrounds. In summary, while the strong support from parents at Zamfara State College of Education is indicative of their crucial role in student learning, it is essential to consider the varying influences of socioeconomic status and culture that can affect the overall effectiveness of parental involvement in education.

Response to Question Seven: I hope to continue learning after my NCE program

The findings suggest that science students anticipate that their parents will assist them financially in pursuing university education, aligning with the research of Muhammad et al. (2019), which emphasizes the crucial role of parental support in academic progression. Supporting these conclusions, recent studies have highlighted how parental encouragement significantly influences educational aspirations. For example, Farooq, and Asim, (2020) found that parental involvement and financial support are critical factors in shaping students' educational goals. Additionally, Zenda, (2021). emphasized that students with engaged parents are more likely to pursue higher education, as these parents not only encourage academic achievement but also help navigate the complexities of higher education financing. Conversely, contrasting findings indicate that while many students hope to continue their education, financial barriers can significantly impede their progress. Baker and Montalvo (2019) pointed out that socioeconomic factors often limit students' ability to access higher education, regardless of their aspirations or parental support. Furthermore, Davis-Kean, Tighe, Waters, et al. (2021) highlighted that while parental expectations can positively influence students' aspirations, a lack of resources or guidance can lead to disillusionment about pursuing further studies. In summary, the substantial percentage of students at Zamfara State College of Education showing hope for further education underscores the importance of parental support in this process. Nonetheless, the complexities associated with financial and social factors must be acknowledged, as they can significantly influence students' ability to realize their educational aspirations.

Response to Question Eight: The best way to succeed is through school

For example, Griffiths, Alsip, Kennedy, et al. (2021) found that parental attitudes toward education significantly influence students' academic pursuits and career aspirations, reinforcing the idea that supportive parents can lead to higher student engagement and motivation in school. Furthermore, (Davis-Kean, Tighe, & Waters, 2021) demonstrated that when parents value education, it positively impacts children's academic attitudes and performance. Contrastingly, some studies suggest that while parental perceptions of education are important, contextual factors can also play a crucial role in student success. Wilder, (2023) points out that socioeconomic status can limit access to quality education, regardless of parental support or attitudes towards education. Additionally, research by Farooq, and Asim, (2020) emphasizes that cultural differences may influence how education is perceived among different families, indicating that not all families may view schooling as the primary pathway to success based on their circumstances or values. In summary, while the importance attached to education by parents correlates with students' beliefs that school is the best route to success, it is essential to consider the broader context, including socioeconomic and cultural factors that can also affect educational outcomes and aspirations.

Response to Question Nine: My parents admire people who go to higher institutions

These findings resonate with previous studies by Davis-Kean, Tighe, Waters, et al. (2021) which all established that parental influence significantly shapes children's academic choices and subsequently their career aspirations. Supporting this perspective, recent research underscores the powerful role parents play in shaping educational values. Davis-Kean, Tighe, Waters, et al. (2021) found that when parents respect and admire educational attainment, it can significantly motivate children to pursue their studies more diligently. Furthermore, a study by Farooq, and Asim, (2020). emphasizes that parental expectations and attitudes toward education are

pivotal in determining students' academic outcomes. However, contrasting findings indicate that parental admiration for education does not always translate into support for all academic paths. Otani, M. (2020) highlights that while admiration for higher education is common, disparities in socioeconomic status and access to resources may hinder some students from achieving their educational aspirations. Additionally, Wilder, (2023) points out that cultural factors can affect how different families view education, potentially leading to varying levels of motivation and support among their children. In summary, the strong admiration exhibited by parents in Maru for individuals attending higher institutions positively influences their children's academic interests. However, it is essential to consider the broader context of socioeconomic and cultural factors that can also impact educational outcomes and aspirations.

Response to Question Ten: My father gives me a special gift, for my good performance in school

These results align with the findings of Muhammad et al. (2019), who also noted that parental rewards significantly contribute to student motivation. Recent research further supports the notion that parental recognition and reward systems can enhance students' academic motivation. For instance, Ryan and Deci (2017) demonstrate that extrinsic rewards, such as gifts, can effectively enhance students' intrinsic motivation when aligned with their interests and achievements. Additionally, Farooq, and Asim, (2020) highlight that praise and tangible rewards for accomplishments can foster a growth mindset, encouraging students to strive for excellence. However, contrasting studies suggest that while rewards can motivate academic performance, they may also have limitations. For example, Kong, and Wang, (2021) argue that an overemphasis on rewards might lead to dependency on external validation, potentially undermining intrinsic motivation in the long term. Furthermore, Wilder,

(2023) emphasizes that while parental involvement is crucial, the quality of that involvement matters; not all forms of rewards yield positive educational outcomes. In conclusion, the significant percentage of students at Zamfara State College of Education reporting that their fathers provide gifts for academic performance underscores the positive influence of parental support on motivation. Nevertheless, it is important to consider the potential challenges associated with relying solely on extrinsic rewards in fostering consistent academic engagement and motivation

Conclusion

The findings from the study on the effects of socio-economic status and parental involvement on the academic achievement of biology students at the School of Science, ZCOE, reveal a multifaceted relationship between these factors and educational outcomes. The research underscores the significant influence of parental education on students' academic performance. Students from educated families tend to have better access to resources, higher educational aspirations, and more robust support systems, which collectively enhance their academic success. However, it is crucial to recognize that academic achievement is not solely determined by parental education; intrinsic motivation, the quality of the educational environment, and cultural attitudes toward education also play vital roles. The analysis highlights the importance of parental involvement in students' education. Regular counseling and encouragement from parents, as well as the provision of learning materials, positively correlate with improved academic performance. While these factors are beneficial, their effectiveness can be influenced by socio-economic conditions and the educational backgrounds of the parents. The complexity of this relationship suggests that while parental support is a key driver of academic success, it must be complemented by supportive educational environments that can effectively

address the needs of students from diverse backgrounds.

The study further emphasizes the critical role of strong home-school partnerships. Positive relationships between parents and teachers foster greater student engagement and motivation, contributing to better academic outcomes. However, barriers such as cultural differences and language barriers can hinder effective communication and collaboration, particularly for families from lower socio-economic backgrounds. Students' aspirations for higher education are significantly influenced by parental support, yet financial barriers often impede their ability to pursue these goals. The findings suggest that while many students express a desire to continue their education, socio-economic factors can create substantial challenges, highlighting the need for targeted interventions to support these students. In conclusion, this research illustrates the intricate interplay between socio-economic status, parental involvement, and academic achievement. It calls for educators and policymakers to adopt a holistic approach that considers the diverse influences on student success, aiming to create equitable educational opportunities that empower all students, regardless of their socio-economic background. By fostering strong parental involvement, enhancing home-school relationships, and addressing financial barriers, we can work towards improving educational outcomes and supporting the aspirations of students in the School of Science at ZCOE and beyond.

Limitations of the study

The study also acknowledges the influence of cultural attitudes and socio-economic factors on educational outcomes but may not fully account for the diversity of cultural backgrounds and varying socio-economic conditions of families. This variability can result in differing interpretations of parental involvement and its impact on academic achievement. Furthermore, employing a

descriptive survey research design limits the ability to infer causal relationships between the studied variables, suggesting that longitudinal studies would offer a more comprehensive understanding of their interactions over time.

Moreover, while the focus on parental involvement and socioeconomic status is significant, the study may overlook other critical external factors that influence academic performance, such as peer relationships, school resources, and individual student characteristics, including mental health and learning disabilities. The analysis may also not adequately control for potential confounding variables, such as students' intrinsic motivation, prior academic performance, and teacher quality, all of which can significantly impact educational outcomes. The concept of parental involvement itself is multifaceted, and the study may not capture the nuances of different types of involvement, such as emotional versus academic support, and their varying impacts on student performance. Finally, while academic achievement is emphasized as the primary outcome measure, this focus may not encompass other important aspects of student development, such as social skills, emotional well-being, and critical thinking abilities.

Recommendations

The findings from this study on the socio-economic status of biology students at the School of Science, ZCOE, reveal significant insights into the complex interplay between parental involvement, educational background, and academic achievement. This research underscores the intricate relationship among these factors, highlighting the need for a holistic approach to educational policy and practice. Given the critical role that socio-economic status plays in academic performance, educators and policymakers need to focus on fostering strong parental engagement, enhancing home-school partnerships, and addressing financial barriers that hinder access to

education. By creating inclusive practices that actively engage families from diverse backgrounds, educational institutions can better support students' aspirations. Moreover, addressing cultural perceptions of education and the varying degrees of resources available to families is paramount in shaping a conducive learning environment for all students. In summary, this comprehensive understanding of the influences on student success is essential for advancing educational effectiveness and equity on a global scale.

Suggestions for further research

Based on the findings of the study, several avenues for future investigation are proposed. Firstly, longitudinal studies would provide valuable insights by tracking students from diverse socio-economic backgrounds over time, allowing researchers to assess the long-term effects of parental involvement and socio-economic status on academic performance and personal development. Secondly, expanding research to include multiple educational institutions across various regions and countries would enhance the generalizability of findings. Comparative studies could explore how cultural and socio-economic factors interact with parental involvement in different educational contexts, offering a more comprehensive understanding of global educational dynamics.

Also, further research should incorporate qualitative research methods, such as interviews and focus groups, which could also enrich the understanding of students' and parents' experiences regarding parental involvement. Additionally, exploring how different cultural attitudes towards education influence parental involvement and student achievement can reveal valuable insights into the shaping of educational expectations and practices across diverse cultural groups need to be investigated. Finally, focusing on the implications of these findings for educational

policy and practice is essential. Research should investigate how policies can better support parental involvement, especially in low-income communities, to develop effective strategies for improving educational outcomes for all students.

Data Availability Declaration

The authors declared the availability of the data used in the research.

Ethics and Consent

All participants in this research consented to participate in this study, their verbal consent was given and there were no written documents before they were administered with the instruments both for the pretest and the posttest.

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