

SOCIOLOGICAL VARIABLES AND BIOLOGY STUDENTS' ACADEMIC PERFORMANCE IN UYO LOCAL GOVERNMENT AREA, AKWA IBOM STATE

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Abstract

The level of low academic performance in biology have given education sociologists so much concern. Over the past years, this issue has been a source of worry to all education stakeholders. Thus, this study was sought to examine sociological variables and biology students' academic achievement in Uyo Local Government Area, Akwa Ibom State. In line with the objectives of the study, two research questions were raised to guide the study and two null hypotheses were tested at 0.05 level of significance. Correlational research design was used for the study. The target population for the study consisted of 954 senior secondary two (SSII) students offering biology in all the 14 public secondary schools in Uyo Local Government Area. Random sampling technique was used to select 8 public secondary schools from the population. Taro Yamane's sample size statistics was used to determine a sample size of 320 senior secondary two (SSII) biology students. Biology Parental Involvement Scale Questionnaire (BPISQ) and Biology Peer Group Influence Scale Questionnaire (BPISQ) and Terminal Continuous Assessment Result (TCAR) were used as the instruments for data collection. The reliability coefficients of BPISQ and BPISQ was 0.80 respectively. Pearson Product Moment Correlation was used for data analysis. It was concluded from the study that; parental involvement and peer group influence are the sociological variables that correlate students' academic performance in biology. It was recommended that; parents should be highly involved in their children academics by teaching, revising, mentoring at home as well as checking the note takings and students should only keep peer group that would encourage learning and impact them positively in order to perform well in biology.

Keywords: Sociological Variables, Parental Involvement, Peer Group Influence, Academic Performance

1 INTRODUCTION

1.1 Background Issues

Education remains the bedrock of the future of every nation. There is no doubt that the level of development in a country is a direct reflection of the system of education. This implies that, the rate of development in a country can be attributed to the products of a well-organized, managed and supervised educational system.

Education is a means by which citizens are equipped with the needed knowledge, skills and attitude that will enable individual to contribute meaningfully to national development. Thus, every nation of the world has recognized and accepted education as the springboard of societal developments. For developing nations and Nigeria in particular, secondary school education remains a potent factor for eradicating poverty and changing the misfortune of under development.

Education is power and a process of acquiring knowledge and ideas that shape and condition human attitudes, actions and achievements. Education is defined as a process of developing the child's moral, physical, emotional and intellectual power for his contribution in social reform. It is the process of mastering the laws of nature and utilizing them effectively for the welfare of the individual and for social reconstruction. Ejikeme (2011) declared that a diligent and faithful appraisal of the Nigerian educational system would show that Nigerians have a tragedy in their hands. Ejikeme (2014) stated that Nigeria's educational system has been on a downward spiral quality-wise and virtually becoming dysfunctional. In spite of the importance of education in the society, there have been a low level of students' achievement in science subject like biology (West African Examination Council - WAEC, 2018). For instance, in 2011, the failure rate in biology was 61.50%, 64.34% in 2012, 48.27% in 2013, 48.27% in 2014, 52.61% in 2015, 53.13% in 2016, 51.78% in 2017, 57.02% in 2018, 53.57% in 2019, 36.19% in 2020 and 53.18% in 2021.

Biology is the branch of science that involves the study of living things. of life. Biology is the of structure, function, growth, origin, evolution, and distribution of living things. Biology classifies and describes organisms, their functions, how species come into existence, and the interactions they have with each other and with the natural environment. The four unifying principles forming the foundation of modern biology are cell theory, evolution, genetics and homeostasis. It is a science subject which aims at equipping students with appropriate scientific attitude, competences and ability to apply scientific knowledge to every challenge of life. According to Umar (2011), biology is a natural science that deals with living world; how the world is structured, how it functions and what these functions are, how it develops, how living things came into existence, and how they interact with one another and with their environment. Okori and Jerry (2017) as well as Ahmed and Abimbola (2011) reported that biology is a perquisite subject for many fields of learning that contributes immensely to the technological growth of the nation. These include medicine, pharmacy, nursing, agriculture, forestry, biotechnology, brewery and geology among others.

Biology has contributed to the growth and development of new and better drugs and vaccines against many human and animal diseases and has also contributed towards the conservation of the environment and endangered species (Institute of Biology,

2013). The study of biology in senior secondary schools is expected to equip students with useful concepts, principles and theories that will enable them face the challenges before and after graduation. In spite of the importance of biology, Nigerian students' academic achievement in this subject at senior secondary level has not been encouraging over the year (Egbedi, 2016). Sociological variables as correlate of biology students' academic performance in Uyo Local Government Area, Akwa Ibom State is yet to be determined.

Academic performance is regarded as participants' examination grade at the end of a particular term or programme. It could be seen as the level of performance in a particular field of study. Higher scores indicate better academic performance (Egbule, 2014). Academic performance of students in biology has been below expectation and unimpressive, thus, it has been a source of concern to researchers (Jegade, 2010). Opara (2011) and Egbule (2014) noted that regardless of the laudable values attached to academic performance, performance in external examination is still poor. Available statistics from West African Examination Council showed that students continue to perform poorly in biology in the May/June examinations. For instance, in 2022, the total percentage of students who attained credit passes and above in biology was 32.90% while 67.10% failed. In 2017, 2018, 2019, 2020 and 2021, the percentage of passes recorded in biology were 38.50%, 35.66%, 51.73%, 56.17% and 47.39% respectively (WAEC Examiners' Report, 2022).

More so, the chief examiner, WAEC (2015/2016 academic year) indicated poor performance of students in biology examinations. A number of factors have been identified as the causative factors responsible for the poor performance in examinations. These factors according to Uduh (2010), include but not limited to: student's inadequate preparation and poor coverage of the syllabus; failure on the part of students to adhere to instructions; lack of understanding of the demands of the question which is due to poor reading culture; illegible handwriting and poor spellings; shortage of qualified teachers; inadequate facilities; lack of good school environment; and examination malpractices among others. Many educational stakeholders have put the blame of students' failures in WAEC or NECO examinations on the students and the examination bodies while some blamed parents and the society as a whole while other researchers faulted the teachers, government, educational stakeholders and institutions (Egbedi, 2016; Onah, 2017).

Sociological variables are those factors that connect with activities in which people relate with one another and influence their behaviour. In this study, the sociological variables are parental involvement and peer group influence. Parental involvement is the degree to which a parent is committed to his or her role as a parent and to the fostering of optimal child development. It typically concerns the amount of effort put into child-oriented education as well as other activities (Nyarko, 2011). In the

educational domain, parental involvement has primarily focused on specific activities such as participating in school events; helping with homework and the number of contacts between families and schools. Parent involvement is the volunteer service of parents at school or at home for the purpose of improving a child's education (Bower & Griffin, 2011).

Parents who participate in school and home activities increase learning outcomes for their children (Cheung & Pomerantz, 2015). Ultimately, parents who assist students at home with homework not only contribute to their child's preparedness, but also their ability to articulate prior knowledge and grasp new concepts. The involvement of parents in schools gives them opportunity to monitor and observe school activities and cooperate with teachers to stimulate and inspire students' behaviour to complete homework assignments (Isaiah, 2013). A parent's involvement and encouragement in a child's education can affect the child's attitude towards school, classroom conduct, self-esteem, absenteeism and motivation. Oyedare *et al.* (2016) also noted that parent-initiated contacts with their children's school help to strengthen students' identification with teachers. These authors reported that parents should monitor the type of peer group their children or wards mix up or mingle with in school due to the influence exerted on the students' academic performance.

Peer group as sociological variable is a social group that consists of individuals of the same social status who share similar interests and are close in age, education or social class. Uzezi & Deya (2017) defined peer group as a small group of similarly aged, fairly close friends, sharing the same activities, having two to twelve members with an average of five or six. There are tendencies that peer group can exert influence on their friend. It is thought that intelligent students do help their peers in teaching and learning of biology as well as sharing a common team of similar aspiration. Olalekan (2016) found out that students are closer to their peer groups than their teachers and parents; and that there is association between students' peer group and their academic achievement in Oyo State of Nigeria. Akomolafe & Adesua (2016) asserted that there is a significant relationship between peer group and the academic performance of selected students from Osun, Ondo and Ekiti.

Research studies have shown that sociological variables play a significant role in student academic performance, if other variables remain constant (Osarenren, 2013). Several literature have shown that low academic performers are more likely to face sociological problems which include; peer group influence, poor parental involvement, learning inability, poor attitude to study, gender disparity/inequality, poor motivation and poor study habit (Egbedi 2016; Wachikwu *et al.*, 2017) whereas Babajida (2018) found negligible or no significant influence of sociological factors on academic achievement. Thus, this study intends to find out the sociological variables that correlates biology students' academic achievement.

1.2 Statement of the Problem

Students' poor academic performance in biology in Senior Secondary School Examinations (SSCE) over the past years has been a source of worry to parents and biology educators. Students have been observed to be manifesting certain sociological problems in senior secondary schools. Studies have also shown that low achievers are more likely to manifest sociological problems. The observed sociological problems affecting students' academic performance are poor parental involvement, peer group influence among others. More so, it has been observed that past researches have been carried out on instructional strategies on students' academic achievement in schools without a commensurate attention on sociological problems. Consequently, the present study deems it necessary to examine the sociological variables and biology students' academic performance in Uyo Local Government Area, Akwa Ibom State.

1.3 Purpose of the Study

The purpose of the study is to examine the sociological variables and biology students' academic performance in Uyo Local Government Area, Akwa Ibom State. Specifically, the study is sought to:

- i. Examine the relationship between students' parental involvement and academic performance in biology.
- ii. Determine the relationship between students' peer group influence and academic performance in biology.

1.4 Research Questions

- i. What is the relationship between students' parental involvement and academic performance in biology?
- ii. What is the relationship between students' peer group and academic achievement in biology?

1.5 Research Hypotheses

- i. There is no significant relationship between students' parental involvement and academic achievement in biology.
- ii. There is no significant relationship between students' peer group influence and academic achievement in biology.

2 REVIEW OF RELATED LITERATURE

Sociological variables are social factors that connect with activities in which people relate with one another and influence their behaviour. In this study, the sociological variables are parental involvement and peer group influence. Parental involvement is the degree to which a parent is committed to his or her role as a parent and to the fostering of optimal child development. Hussain *et al.* (2018) opined that parental

involvement has to do with the resources, strategies, actions that parents use to develop social and academic orientation among students. Muola (2010) explained that the nature of encouragement given to the child by the parents is important as far as the academic achievement is concerned. Parents who through involvement pressurize their children by making too high demands may create in them anxiety and fear of failure instead of providing effective morale to do well in academic work (Muola, 2010).

Koskei (2012) pointed out that 90.9% of students whose parents were involved in education scored below average in the standardized scores. Ayodo (2009) affirmed that children guided in doing homework by parents must be involved in their children academic performance, especially in lower primary for better academic foundation. Parental involvement is the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities (No Child Left Behind Act, 2002). It also involves parents playing an integral role in assisting their child's learning and the courage to be actively involved in their child's education as well as assisting in appropriate decision – making and advisory committees in the education of their child. Parental involvement also refers to parental interaction with the school and their children in order to encourage academic progress and offer support with school activities (Hill & Tyson, 2009).

Singh & Sharma (2017) highlighted that there are six (6) categories of parental involvement:

- i. Establish a daily family routine. By providing time and a quiet place to study, assigning responsibility for household chores, being firm about bedtime and having dinner together.
- ii. Monitor out-of-school activities. Involves setting limits on television watching, checking up on children when parents are not home, arranging for afterschool activities and supervised care.
- iii. Model the value of learning, self-discipline, and hard work. Like communicating through questioning and conversation, demonstrating that achievement comes from working hard.
- iv. Express high but realistic expectations for achievement. Like setting goals and standards that are appropriate for children's age and maturity, recognizing and encouraging special talents, informing friends and family about successes.
- v. Encourage children's development/ progress in school. By maintaining a warm and supportive home, showing interest in children's progress at school, helping with homework, discussing the value of a good education and possible career options, staying in touch with teachers and school staff.
- vi. Encourage reading, writing, and discussions among family members. By reading, listening to children read and talking about what is being read.

Arhart & Aziz (2011) stated that parental involvement in students' academic work play a crucial role in the development of both social and cognitive competence in children and also observed that infants who lack parental involvement are associated with aggressive behaviours and low self-esteem. Koskei (2014) reported that parents' involvement to their children was an important predictor of high scores in schools. Research shows that supportive and attentive parenting practices affect academic achievement (Arhart & Aziz, 2011). In addition, high parent aspirations have been associated with increasing student's interest in education (Khajehpour & Ghazuini, 2011). However, too much parental involvement in students' academics might not allow the child to be independent in dealing with the studies. Another sociological variable that can affect students' academic performance is peer group influence.

Peer group influence is pertinent to performance of students especially of the same age bracket. According to Hartney (2011), peer group influence refers to the influences that peers can have on each other. Peer group influence is emotional or mental forces from people belonging to the same social group such as age, grade or status to act or behave in a manner similar to themselves (Weinfied, 2010). Health Research Funding (2015) described a peer group influence as a social group consisting of people who are equal in such respects as age, education or social class. These people usually share a common interest and background. They can also be very diverse, with people from different social and economic backgrounds, race, and culture among others. The Oxford Advanced Learners Dictionary (2016) defined peer group as a group of people of same age or social status. Peer relationships provide a unique context for social and emotional development of a person enhancing persons' reasoning abilities, concern for others, cooperating with people. Peer pressure is influence on a peer group which may encourage others to change attitudes, values, beliefs or behaviours to conform to groups.

Jones (2010) defined peer pressure as the ability of people from the same social rank or age to influence another of same age bracket. Peer pressure is defined as when people of one's age encourages or urges him to do something or to keep off from doing something else, irrespective of the person's desire to or not to. Peer pressure is usually associated with teens although its influence is not confined to teenagers alone. Mature adults, teens, young adults and children can be seen doing things in order to be accepted by their peers. Peer pressure is commonly associated with episodes of adolescent risk taking (such as delinquency, drug abuse, sexual behaviours) because this behaviour commonly occurs in the company of peers. It can also have effects when youth are pressured by the peer toward behaviour such as volunteering for charity or excelling in academics (Kellie, 2013).

Eboatu & Igboka (2017) investigated the extent of parental school involvement for students improved academic achievement in Awka South Local Government Area of

Anambra State. A descriptive survey design was used for this study, with six (6) research questions guiding the study. The population for the study comprised 417 public secondary school teachers from which a sample of 125 teachers using simple random sampling technique. The instrument for data collection was a researcher designed, structured questionnaire which was duly validated by experts in educational management and measurement and evaluation. The questionnaire was tested for reliability using test-retest method. The tool for correlation was the Pearson Product Moment Correlation and this yielded a co-efficient of 0.82. Data collected was analysed using mean and standard deviation statistics to answer the 6 research questions while ANOVA with Friedman's Test was used to test for significant difference in the six indices of parental involvement. The findings showed that teachers perceive that parents in Awka South Local Government Area effectively communicate with school and coach their children for improved academic achievement to a moderate extent. There was no significant difference in the teacher's perception of parental involvement based on the six indices of involvement.

Amponsah *et al.* (2018) examined the relationship between parental involvement in education and academic performance of senior high school students in the Ashanti Mampong Municipality of Ghana. The descriptive correlational research design was used to conduct the study. Stratified random sampling procedure was employed to select a total sample of 471 respondents made up of 186 males and 285 females. Questionnaire and test items on Mathematics and English Language were the research instruments used to collect data for the study. Data analysis was conducted by employing descriptive statistical tools (mean and standard deviation scores) to examine students perceived parental academic ambition and involvement in their education while the Zero-order correlation was used to examine the relationships between parental involvement in education and academic performance. The results of the study show a significant positive relationship between parental involvement in education and students' academic performance. It is recommended from the study that parents should play a leading role in supporting their children's education since they are the first to expose children to the social and academic world.

Akomolafe & Adesua (2016) examined peer group as correlates of the academic performance of Senior Secondary School Students in South West Nigeria. The study adopted an *ex-post facto* design and descriptive research design of survey type. The population comprised all Senior Secondary School Students in South West Nigeria. The sample of the study consisted of 1150 SS 3 drawn from three states out of the six states in the South West Geo-political zone; namely Osun, Ondo and Ekiti. Questionnaire were used to obtain the needed data tagged "Motivation and Academic Performance of Senior Secondary School Students" (MAPSSS). Two null hypotheses formulated and tested at 0.05 level of significance. The findings of the study revealed that there was a positive significant relationship between peer group and the academic performance of students.

Babajide (2018) investigated the relationship between of peer group and students' performance in physics. The study is descriptive in nature adopting the use of questionnaire and structured physics achievement test for data collection. The population consisted of all Senior Secondary School II Physics Students in Shomolu Local Government of Lagos State for 2016/2017 session. A simple random sampling technique was used in selecting a sample of one hundred (100) students. The instrument titled Physics Achievement Test and student's questionnaire were used in testing five hypotheses in the study. The result from the study showed that there is no significant relationship between peer group pressure and students' performance in physics. The findings indicated that peer group pressure enhanced negative relationship on students' performance in physics.

Singh & Sharma (2017) examined the relationship between the academic performance and Parental-Involvement. The research was carried out of 600 adolescents in the age group of 15 to 18 years. Forty schools (40) were selected through simple random sampling and stratified random technique for both male and female students in the sample frame of present study. Survey questionnaire was used as a tool for data collection. The findings showed that parental involvement had relationship in academic performance of children.

Social Exchange Theory was propounded by George C. Homan in 1958, the theory states that people engage in social interactions and make relationships with others after weighing all potential risks and benefits involved in that interaction or relationship. This theory would help the school management, parents and all educational stakeholders in improving their attitude towards student academic performance. This theory would help to give broader look why do people engage in or terminate relationship with others. The understanding of this theory can help students to make decisions whether they should stay in a relationship or not, that is if there are more costs than benefits in any relationship, it should be terminated and vice versa. Social Exchange theory helps the researchers and education counselor to understand the reason behind low performance of students in biology, problems in child - parents' relationship and other family issues as well as the influence of peer group.

Social Learning theory was propounded by Bandura in 1977. This theory state that people can learn from each other through observation, imitation and modeling. The theory of social cognitive takes into account a person's past experience, which factor into whether behavioral action will occur. The social learning theory emphasises the importance of observing and imitating the behaviour, attitudes and emotional reactions of others. Thus, it focuses on learning by observation and imitation. Imitation and modeling of influential persons or models also depend on reinforcement. This reinforcement can either be direct or vicarious in direct reinforcement, the person imitating the model receives reinforcement directly. When

a child, for instance is praised for exhibiting behaviour, he receives direct reinforcement. Relating it to the present study, students can model after their peers who have positive attitudes and behaviour towards biology, in order to enhance their academic performance in biology. This theory is therefore relevant to this study in the sense that, it will help students to learn the characteristics of behaviour that make up their personality through observation and imitation. Social Cognitive Theory is also relevant in this study to assist students in career choice and institutional behaviour as well as in understanding classroom motivation, learning, and academic performance.

3 METHODOLOGY

3.1 Research Design

Correlational research design was used in the study. Correlational design was used because it helps to investigate the correlation between dependent and independent variables. This design was used to find out if there is any correlation between students' parental involvement and students peer group influence as it relates to their academic achievement in biology. The study was conducted in public secondary schools in Uyo Local Government Area, Akwa Ibom State. The population of the study comprises of all the 954 senior secondary two (SSII) students offering biology in all the 14 public secondary schools in Uyo Local Government Area of Akwa Ibom State (State Secondary Education Board, Uyo, 2021).

The sample size of three hundred and twenty (320) was determined using Taro Yamane's sample size formula at error term of 0.04561 (4.561%). Eight (8) schools were randomly selected from the 14 public secondary schools in Uyo Local Government Area of Akwa Ibom State. Forty (40) students in SSII offering biology in each of the eight secondary schools were also randomly selected giving a total of three hundred and twenty (320) students for the study. The choice of this sampling technique was borne out of the reasons that each student in the population has equal chance of being selected, no bias in the selection and entirely on merit of the member not as determined by another member.

Three instruments were used for data collection 'Biology Parental Involvement Scale Questionnaire (BPISQ), Biology Peer Group Influence (BPISQ) and Terminal Continuous Assessment Result (TCAR). BPISQ and BPISQ was a standardized instrument with ten items in each of the variable making a total of twenty items. The Terminal Continuous Assessment Result (TCAR) was SSII biology students' third term examination scores in each of the school sampled for the study. BPISQ and BPISQ was on four- point Likert scale response options ranging from strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). BPISQ and BPISQ consisted of five subsections which focus on parental involvement and peer group influence as it relates to their academic achievement in biology. The items in the questionnaire were sorted out according to the variables they were design to measure.

The independent variables were stated on the positive key with each subsection having 10 items making a total of twenty (20) items and was scored from strongly agree (4), agree (3), disagree (2) and strongly disagree (1).

The draft of the research instruments 'Biology Parental Involvement Scale Questionnaire (BPISQ) and Peer Group Influence Scale Questionnaire (PGISQ) were given to a professor in biology education and a lecturer in the department of educational foundation, measurement and evaluation, University of Uyo. These experts, through non-experimental method were made to validate the instrument based on syllabus adequacy. In order to establish the reliability of the instruments, a test-retest reliability procedure was used. Biology Parental Involvement Scale Questionnaire (BPISQ) and Peer Group Influence Scale Questionnaire (PGISQ) were administered to a sample of 40 SSII biology students. Simple random sampling technique was used to draw a sample of 40 SSII biology students who do not form part of the main sample for the study. After an interval of two weeks, the same instruments were administered to the same students and their responses were scored. The initial and re-tested scores were correlated using Pearson's Product Moment Correction. The reliability coefficient for the Biology Parental Involvement Scale Questionnaire (BPISQ) and Peer Group Influence Scale Questionnaire (PGISQ) was 0.80 (0.72 for parental involvement and 0.86 for peer group influence). This is considered to be a high reliability coefficient (Michael, 2010); thus, the instrument was considered suitable to be used in conducting the study.

3.2 Research Procedure

The questionnaire was administered personally by the researcher with the help of research assistants. The students were given 40 minutes to respond to the questionnaire. The study recorded 100 percent return rate of the questionnaire. The independent variables' (parental involvement and peer group influence) scores were obtained from the students' responses on the two aforementioned subject matters respectively while the dependent variable (students' academic achievement) scores in biology were obtained from the Terminal Continuous Assessment Results (TCAR) for SSII biology students of the school sampled for the study. The statistical method used for data analysis was Pearson Product Moment Correlation (PPMC) to find the correlation that exist between the dependent variable and independent variables. Mean and standard deviation was used for the item-by-item analysis at 0.05 level of significance. The interpretation of the correlation results (r_{cal}) of the study was as follows:

± 0.00 to ± 0.20	=	Negligible, weak or none correlation
± 0.21 to ± 0.40	=	Low correlation
± 0.41 to ± 0.60	=	Moderate or fairly correlation
± 0.61 to ± 1.00	=	Moderately high or very high correlation

4 EMPIRICAL FINDINGS AND RESULTS

4.1 Analyzing the Research Questions

Research Question One: What is the correlation between students' parental involvement and academic performance in biology?

Table 1: Nature of Correlation between Students' Attitude and Academic Performance in Biology (n=320)

Variables	ΣX	ΣX^2	ΣXY	$r_{cal.}$	Remark
	ΣY	ΣY^2			
Students' parental involvement (X)	9423	293995	515384		
Academic Performance in Biology (Y)	16917	1015565			Low positive correlation

n = 320, df=318. * = significant at p<0.05.

Source: Researchers' Computation (2022).

Result in Table 1 shows the nature of the relationship between students' parental involvement and academic performance in biology. The result reveals correlation coefficient of 0.384 which means that there is low positive relationship between students' parental involvement and academic performance in biology. The implication of this results is that the more parents are involved in the academic pursuit of their words, the better the academic performance of students in biology. Therefore, the nature of the relationship between students' parental involvement and academic performance in biology is low positive.

Research Question Two: What is the correlate between students' peer group and academic performance in biology?

Table 2: Nature of Correlation between Students' Peer Group Influence and Academic Performance in Biology (n=320)

Variables	ΣX	ΣX^2	ΣXY	$r_{cal.}$	Remark
	ΣY	ΣY^2			
Students' peer group influence (X)	8377	233249	459850	0.413	
Performance in Biology (Y)	16917	1015565			Low positive correlation

n = 320, df =318. * = significant at p<0.05. Source: Researcher's Computation (2022).

Result in Table 2 shows the nature of the relationship between students' peer group influence and academic performance in biology. The result reveals correlation coefficient of 0.413 which means that there is moderate positive relationship between students' peer group influence and academic performance in biology. The implication of this is that the more the students associate with peer group, the better the academic performance of students in biology. Therefore, the nature of the relationship between students' peer group influence and academic performance in biology is moderate positive. It can be inferred from the results that students' peer group influence moderately correlates their academic performance in biology.

4.2 Testing of Hypotheses

The hypotheses were tested using Pearson's Product Moment Correlation analysis with the help of SPSS Version 20.0 at 5% level of significant.

Hypothesis One: There is no significant relationship between students' parental involvement and academic performance in biology.

Table 3: Relationship Between Students' Parental Involvement and Academic Performance in Biology

Variables	ΣX	ΣX^2	ΣXY	r_{cal}	r_{crit}	Decision at $p < 0.05$
	ΣY	ΣY^2				
Students' Parental Involvement (X)	9423	293995	515332	0.384	0.113	*
Academic Performance in Biology (Y)	16917	1015565				

$n = 320$, $df = 318$. * = significant at $p < 0.05$. Source: Researcher's Computation (2022).

The result in Table 3 reveals that the calculated r (0.384) is greater than the critical r of 0.113 at the 0.05 level of significance with 318 degrees of freedom (df). The null hypothesis is rejected. This implies that, there is a significant relationship between students' parental involvement and academic performance in biology. This means that students' parental involvement significantly correlates their academic achievement in biology.

Hypothesis Two: There is no significant relationship between students' peer group and academic performance in biology.

Table 4: Relationship Between Students' Peer Group Influence and Academic Performance in Biology

Variables	ΣX	ΣX^2	ΣXY	r_{-cal}	$r_{-crit.}$	Decision at $p < 0.05$
	ΣY	ΣY^2				
Students' Peer Group (X)	8377	233249	459850	0.413	0.113	*
Academic Performance in Biology (Y)	16917	1015565				

$n = 320$, $df = 318$. * = significant at $p < 0.05$. Source: Researcher's Computation (2022).

Result in Table 4 reveals that the calculated r (0.413) is greater than the critical r of 0.113 at the 0.05 level of significance with 318 degrees of freedom (df). The null hypothesis is rejected. Hence, there is significant relationship between students' peer group influence and academic performance in biology. This means that students' peer group influence significantly correlates their academic performance in biology.

4.3 Summary of the Findings

The findings of this study are summarized as follows:

- There exists significant positive low relationship between students' parental involvement and academic performance in biology;
- There exists a significant moderate positive relationship between students' peer group and academic performance in biology;

4.4 Discussion of Findings

The findings of the result in Table 3 from the correlation analysis indicated that, there is a significant positive low relationship between students' parental involvement and academic performance in biology. This is confirmed as the calculated r (0.384) is greater than the critical r of 0.113 at 0.05 level of significance with 318 degrees of freedom. The r -calculated of +0.384 indicated that there is a positive low relationship between students' parental involvement and academic performance in biology. The significant positive low relationship might have resulted from some efforts from parents which gives them opportunity to monitor and observe school activities and cooperate with teachers to stimulate and inspire their children to complete assignments. The findings could also be attributed to parents helping their children improve their schoolwork by providing encouragement, arranging for appropriate study time and space, modelling desired behaviour (such as reading for pleasure), monitoring homework and actively tutoring their children at home. This is why Comer (2006) opined that parents' involvement and support of their children's school help reinforce students' sense of belonging to school and their identification with teachers and other school personnel.

The findings of this study are in accordance with the findings of Cheung & Pomerantz (2015) who found that parents who participate in school and home activities increase learning outcomes for their children. The finding of this study also collaborates with that of Hussain *et al.* (2018) who found that there exist a positive and significant relationship between parental involvement and academic performance of students. The finding of this study is also in agreement with that of Amponsah *et al.* (2018) who found a significant positive low relationship between parental involvement and students' academic performance of senior high school students.

The findings of the result in Table 4 from the correlation analysis indicated that, there is a significant positive moderate relationship between students' peer group and academic performance in biology. This is confirmed as the calculated r (0.413) is greater than the critical r of 0.113 at 0.05 level of significance with 318 degrees of freedom. The r -calculated of +0.413 indicated that there is a significant positive moderate relationship between students' peer group influence and academic performance in biology. This could be that the students peer group influence provided a unique context for social and emotional development of each other enhancing their reasoning abilities, concern for others and cooperating with people. The peer groups may have encouraged themselves to take their studies seriously and excel well in their academics. Hence, Ogunniyi (2015) asserted that peer group influence correlates academic performance of secondary school students. Thus, peer group relationship is expected to correlate academic achievement of secondary school students in biology. The findings with Akomolafe & Adesua (2016) who found a significant positive low relationship between peer group and academic achievement of students. This present finding contradicts the study of Babajide (2018), who found that peer group pressure has significant negative relationship on students' achievement in physics.

4.5 Educational Implications of the Findings

The findings of this study showed that student's parental involvement has a significant positive low relationship could be as a result of the parents being actively involved in the academic performance of the students. Students, peer group influence has a significant positive moderate relationship on students' academic performance in biology. This could be as a result of the students' choosing the right peer group.

5 CONCLUSION

5.1 Conclusion

Based on the findings and discussion of this study, it was concluded that students' parental involvement and students' peer group influence are the significant sociological variables that correlate students' academic performance in biology in senior secondary schools in Uyo Local Government Area, Akwa Ibom State.

5.2 Recommendations

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

- i. Parents should give much more attention and supervision to the students' academic work. They should encourage their wards to take biology studies seriously, provide them with biology text books, allot time to do biology assignments, supervise their biology studies at home, compel them to study biology among others. This will result in the improvement of the students' academic achievement.
- ii. Students should associate with the right peer group. They should keep friends that like studying biology with them after school, always revise biology lessons together, engage in group discussions before biology examination, always punctual in biology classes, belong to a peer group that has keen interest in biology, always attend biology classes, solve biology assignment together and avoid friends that encourage skipping of biology classes.
- iii. Non-governmental organizations (NGOs), parent teacher association (PTA) and other stakeholders in education should encourage the teaching of biology by providing adequate financial support and biology text books for effective teaching and learning of biology.

Reference

- Ahmed, M. A. & Abimbola, I. O. (2011). Influence of teaching experience and school location on biology teachers' rating of the difficult levels of nutrition concepts in Ilorin, Nigeria *Journal of Science, Technology, Mathematics and Education*, 7(2), 52 - 61.
- Akomolafe, C. O. & Adesua, V. O. (2016). Peer group and parental support as correlates of academic performance of senior secondary school students in south west, Nigeria. *European Scientific Journal*, 12 (7), 306 – 315.
- Amponsah, M. O. Milledzi, E. Y. Ampofo, E. T. & Gyambrah, M. (2018). Relationship between parental involvement and academic performance of senior high school students: The case of Ashanti Mampong Municipality of Ghana. *American Journal of Educational Research*, 6(1), 1 - 8.
- Arkhtar, Z. & Aziz, S. (2011). The effect of peer and parental pressure on the academic achievement of university students. Strength for today and bright hope for tomorrow. www.languageinindia.com (Retrieved on 6th April 2015).

- Ayodo, H. (2009). Making Homework Less Work. *The Standard*, Wednesday 22nd, July.
- Babajide, V. F.T. (2018). Peer group pressure and parental socio-economic status as correlate of students' achievement in physics. *Education and Science Journal of Policy Review and Curriculum Development*, 18(1), 14 - 27.
- Babajide, V. F.T. (2018). Peer group pressure and parental socio-economic status as correlate of students' achievement in physics. *Education and Science Journal of Policy Review and Curriculum Development*, 18(1), 14 - 27.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 191 - 215.
- Bower, H. A. & Griffin, D. (2011). Can the Epstein model of parental involvement work in a high-minority, high-poverty elementary school? *Professional School Counseling*, 15(2), 77 - 87.
- Cheung, C. S. & Pomerantz, E. M. (2015). Value development underlies the benefits of parents' involvement in children's learning: A longitudinal investigation in the United States and China. *Journal of Educational Psychology*, 107(1), 309 - 320.
- Comer, S. T. (2006). *Expanding Knowledge of Parental Involvement in Secondary Education Effects on High School Academic Success*. Tech. Rep 27, Johns Hopkins University, Centre for Research on the Education of students placed at Risk, Baltimore, Md, USA.
- Eboatu, V. N. & Igboka, D. O. (2017). Extent of parental school involvement for improved student performance in Awka South Local Government Area of Anambra State. *European Scientific Journal*, 13(22), 1857 - 7881.
- Egbedi, H. (2016). *Who is to blame for the incessant mass failure of WAEC: the students, the teachers, the parents or government or WAEC Itself?* <http://VenturesAfrica.com>. (Retrieved on 6th July 2016).
- Egbule, J. F. (2014). *Practical guide to a successful project or Thesis in writing and defense*. Owerri: White and white Publishers.
- Ejikeme, P. O. (2011). *Corruption and the collapse of education in Nigeria*. Pope John Paul 11 Annual Memorial Lecture, No. 6. Awka: Pope John Paul Seminary.

- Ejikeme, P. O. (2014). Education as key to national development: Issues, challenges and the way forward. *International Organisation of Scientific Research Journal-Journal of Humanities and Social Science (IOSR-JHSS)*, 19, 6 (II), 20 - 26.
- Hartney, E. (2011). What is Peer Pressure? <http://www.agrange.edu/responses/pdf/citations/nursing/adolscents%20selfesteem.pdf> (Retrieved on 5th June 2011).
- Health Research Funding (2015). Pros and Cons of Peer Pressure. <http://healthresearchfunding.org/pros-cons-peer-pressure> (Retrieved on 23th February 2015).
- Hill, N. & Tyson, D. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promotes achievement. *Developmental Psychology*, 5(45), 740 - 763.
- Hussain, S., Javaid1, Z., Parveen, S. and Iqbal, A. (2018). Relationship between parental involvement and students' performance in secondary schools. *European Online Journal of Natural and Social Sciences*, 7(3): 1805 - 3602
- Institute of Biology (2013). A Response from the Institute of Biology to the Environment Audit Committee Company. Greener Towns for the Future. <http://www.iob.org/userfiles/ecotowns%20> (Retrieved on 18th September 2016).
- Isaiah, M. (2013). Parental involvement in the junior secondary schools and its effects on teachers' job dissatisfaction. *International Review of Social Sciences and Humanities*, 4(2), 1 -12.
- Jegede, O. J. (2010). The effects of concept mapping in students' anxiety and achievement in biology. *Journal of Research in Science Teaching*, 27(10), 959-960.
- Jones, V. (2010). Stronger links: A guide to good practice for children's family based short-term care service. Briston: Policy Press.
- Kellie, B. G. (2013). Peer pressure for students and adults can be positive. Pittsburgh Tribune. <http://www.agrange/responses/pdf/citations/nursing/adolscents%20self-esteem.pdf>. (Retrieved on 20th July 2018).
- Khajehpour, M. and Ghazuini, S. A. (2011). The role of parental involvement affects in children's academic performance. *Proscenia social and behavioral sciences*, 15(20) 1204 - 1208.

- Koskei, B. K. (2012). Influence of socio-economic background on academic performance of public mixed day secondary school students in Kuresoi district. M. Phil. Thesis, Moi University, Eldoret Kenya. 234p.
- Koskei, B. K. (2014). Influence of parental involvement on students' academic performance of public mixed day secondary schools in Kuresoi Sub-County, Nakuru County, Kenya. *International Journal of Education and Research*, 2(12), 505 - 516.
- Muola, J. M. (2010). A study of the relationship between academic achievement motivation and home environment among standard eight pupils in Machakos. *Educational Research and Reviews*. 5(5), 213 - 217.
- No Child Left Behind Act, (2002:9101). Pub. L., 114 Stat:107-110. <http://www.ed.gov/policy/elsec/leg/esea02/107-110.pdf>. (Retrieved 25th May 2017).
- Nyarko, K. (2011). Parental school involvement: The case of Ghana. *Journal of Emerging Trends in Education Research and Policy Studies*, 2(5), 378 - 381.
- Ogba, F. N. & Igu, N. C. N. (2014). Realising quality education in Nigeria: The need to revitalize secondary education. *Journal of Education Research*, 2(3), 57 - 64.
- Ogunniyi, S. O. (2015). Undergraduates' attitude as correlates of academic achievement in cataloguing and classification in library schools in Southern Nigeria. *Library Philosophy and Practice Journal*, 1266(8), 1 - 15.
- Okori, O. A. & Jerry, O. (2017). Improvisation and utilization of resources in the teaching and learning of science and mathematics in secondary schools in Cross River State. *Global Journal of Educational Research*, 16(3), 21 - 28.
- Olalekan, A. B. (2016). Influence of Peer group relationship on the academic performance of students in secondary schools: A case study of selected secondary schools in Atiba Local Government Area of Oyo State. *Global Journal of Human-Social Science: An Arts and Humanities –Psychology*, 16(4), 1 - 15.
- Olorundare, A. S. (2014). Theory into practice: Beyond surface curriculum in science education. The one hundred and forty-seventh (147th) Inaugural Lecture.

- Onah, S. (2017). Why students fail maths in WAEC, NECO. *Daily Post Nigeria Education*, 1- 2.
- Opara, I. M. & Nwaukwu, C. (2016). Junior school certificate examinations predictor of students' academic performance in senior school certificate examination in Obio/Akor L.G.A. of Rivers State Nigeria. *A Research Journal on Contemporary Issues and Development*, 5(4), 48 - 55.
- Opara, J. A. (2014). Inquiry method and students' academic achievement in biology: Lessons and policy implications. *American Eurasian Journal of Scientific Research*, 6(1), 28-31.
- Osarenren, O. R. I. (2013). The influence of sociological and psychological factors on academic performance in university students. *Global Advance Research Journal of Educational Research and Review*, 2(6), 144 - 150.
- Oxford Advanced Learners Dictionary (2016). New 9th Edition, New York: Oxford University Press.
- Oyedare, O. O., Ogunjinmi, O. O. & Durojaiye, A. M. (2016). Parental involvement as a determinant of students' academic performance in agricultural science in selected secondary schools in Oyo Metropolis, Oyo State. *Global Journal of Life Science and Biological Research*, 2(2), 17 - 22.
- Singh, A. & Sharma, D. (2017). Relationship between academic achievement and parental involvement; a study on secondary school students. *International and Education Research Journal*, 3(5), 2454 - 2467.
- Uduh, C. (2010). *Report released as a seminar on overcoming candidates' poor performance at West African senior school certificate examination*. Lagos: WASSE Reports
- Umar, A. A. (2011). Effects of biology practical activities on students' process skill acquisition in Minna, Niger State, Nigeria. *Journal of Science, Technology, Mathematics and Education (JOSTMED)*, 7 (2), 118 - 126.
- Uzezi, A. & Deya, E. (2017). Relationship between peer group influence and students' academic achievement in chemistry at secondary school level. *American Journal of Educational Research*, 5(4), 350 - 356.
- Wachikwu, T., Kevwe, O. A. & Eseose, M. A. (2017). Psychological factors and students' academic achievement in mathematics in Ughelli-South Local

Government Area of Delta State, Nigeria. *British Journal of Education*, 5(10), 8 - 21.

Weinfield, L. (2010). *Remembering the 3rd Wave*. Available @ <https://libcom.org>. Retrieved 6-3-2018.

West African Examination Council (2017/2018). *Chief Examiner's Report*: Yaba: Lagos.

West African Examination Council (WAEC) 2016). *Senior School Certificate Examination Chief Examiners Report*.