



School Location and Gender as Determinants of Senior Secondary Students' Performance in Biology Examination in Kaduna State

Nehemiah Samaila, Najmuddeen Alhassan
Department of Biology,
Federal College of Education, Zaria.

ABSTRACT

The study examined School Location and Gender as they determined students' performance in Senior Secondary Schools Biology Examination in Makarfi Local Government Area, Kaduna State. Among the objectives is to evaluate the performance of male and female students' in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area and to assess the performance of senior secondary schools students in rural and urban areas in Biology Examination (SSCE) in Makarfi Local Government Area. Students comprising of both male and female students with the population of 1900 were sampled for the study. Expos facto research design was employed. The researcher design two research questions, two research objectives and two research hypotheses for the analysis of the data collected from the four selected secondary schools in Makarfi. The percentage, independent t-test were used to analyse the data collected and two hypotheses tested at 0.05 level of significance. The research found that male students performed far better than their female counterparts in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area and urban students performed far better than those in rural areas the rural students had the mean score of 3.83 with the standard deviation of 0.775, while the urban students had the mean score of 4.65 with the standard deviation of 2.943. The t-calculated of 9.76 is greater than the t-critical of 1.96, while the p-value is .000 ($p < 0.005$). The research concluded that, urban students may have performed better than the rural students as a result of teachers not wanting to go to rural schools to teach, students spend so much time on farm work at the expense of the time they should spend on their study. This implies that students from rural schools who may have the same ability with students from urban schools are limited by some factors that prevent them from being their best in their academic especially in Makarfi LGA, Kaduna State. The study recommends that, government should as a matter of urgency recruit more qualified biology teacher and distribute them equitably to schools irrespective of location, government should provide incentives that will attract teachers to the rural area and equal supervisory activities by Ministry officials should get to all schools irrespective of location.

ARTICLE INFO

Article History
Received: January, 2022
Received in revised form: January, 2022
Accepted: March, 2022
Published online: April, 2022

KEYWORDS

School Location, Gender Differences,
Academic Performance and Biology,

INTRODUCTION

Science and technology have permeated every aspect of human endeavour and assumed eminent position in Nigeria educational system (Adeyanju, 2013). The emphasis is evidently in response to the acclaimed assertion that science and technology education are indispensable to the

nation's development. Iwuzor (2011) observed that science is an area of learning which enhances a nation's development and progress especially in the era of automation by virtue of its numerous values to humanity. The implication is that the technological progress of any country is predicted on a sound science education. To this extent, a country's



development, be it economic, social or political can be taken as a function of the advances she is able to record in science and technology.

According to Ugwu & Eze (2005) cited in Joseph *et al* (2017), are of the view that biology education enables the individual to understand himself, parts of his body and their functions. It inculcates in the individual scientific skills, attitudes in his or her approach to personal and social problems. Thus biology as a science subject should be properly taught and this should be evidenced in the students' performance in the subject in standard examinations like the West African Senior School Certificate Examination (WASSCE).

Yang (2010) defined gender as the social attributes and opportunities associated with being male and female and the relationships between women and men; girls and boys, as well as the relations between women and those between men. These attributes, opportunities and relationships are socially constructed and are learned through socialization processes. Gender refers to the social meanings associated with being a male or a female, including the construction of identities, expectations, behaviors and power relationships that are derived from social interactions (Jibrin 2018). In education, gender inequalities have always existed and can be viewed from different perspectives, which includes subjects allocated to a particular gender as being more relevant to the dispositions and academic performances of students. On the other hand, chores such as washing dishes, cooking, cleaning and so on, are reserved for the girls. Gender differences have become critical issues of concern around the world most especially to educators and researchers. Hansman, Tyson and Zahidi (2012) reported that there is no country in the world that has yet reached equality between women and men in different critical areas such as in economic participation or education.

School location according to Ntibi and Edoho (2017) refers to the particular place, in relation to other areas in the physical environment (rural or urban), where the school is sited. They also stated that in Nigeria, rural life is uniform, homogenous and less complex than that of urban centres, with cultural diversity, which often is suspected to affect students' academic achievement. This is because urban centres are better favoured with

respect to distribution of social amenities such as pipe borne water, electricity, healthcare facilities while the rural areas are less favoured. This is also true in the distribution of educational facilities and teachers.

Over the years, the performance of students in Biology examinations in Nigerian Secondary Schools has been poor despite the assumed easy nature of the subject. This has been attributed to several factors such as inadequate laboratory equipment especially during Biology practical examination (SSCE), methods of teaching, student's attitude etc. Furthermore, the impact of gender and school location in biology examination (SSCE) performance which shows to be contradictory has not been resolved (Ntibi & Edoho, 2017).

Several factors among the numerous problems confronting students of urban and rural Senior Secondary Schools Biology examination performance in Makarfi Local Government Area, Kaduna State will without doubt positively or negatively affect students' performance in WAEC examinations. Many of these problems are lack of management of school building, facilities and equipment, such as, books, libraries, science, vocational and languages laboratories, maintenance of instructional materials for the teaching and learning process, maintenance of discipline, management and administration of senior secondary schools, inspection and supervision of school curriculum and time table by State Ministry of Education, inter-personal relationship between school and community, time management, teachers' level of commitment, inter-personal relationship between students and teachers and students' welfare support services. Other factors that may equally affect schools location and gender of students' academic performance in WAEC examinations include: students' indiscipline in schools, inadequate supervision of students' conduct in the house, lack of involvement of students ineffective communication in schools, lack of innovation, lack of students' participation in school decision-making, lack of students' participation in co-curricular activities in schools, inaccurate techniques of evaluating students' academic work, frequent change in state admission and promotion policies by educational administrators and planners for the school systems, students' poor attitude to school work, teachers' qualification and



development, students- parents relationships, inaccurate statistical data, retention of unqualified staff, lack of funds. This are some of the problems that this paper will seek addressed.

Objectives of the Study

1. Find out the variation in the performance of male and female students' in Senior Secondary Certificate Examination in Biology in Makarfi Local Government Area.
2. Determine the differences on the performance of senior secondary schools students in rural and urban areas in Biology Examination in Makarfi Local Government Area.

Research Questions

The following research questions guided the study:

1. What is the variation in the performance of male and female students' in senior secondary certificate examination in Biology in Makarfi Local Government Area?
2. What is the differences in the performance of senior secondary schools students in rural and urban areas in Biology Examination in Makarfi Local Government Area?

Research Hypotheses

1. There is no significant difference in the performance of male and female students in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area.

2. There is no significant difference in the performance of rural and urban students in Biology Examination (SSCE) in Makarfi Local Government Area.

THEORETICAL FRAMEWORK

This theory was propounded by Lewin in 1946. The main point is that learning is a function of the persons and his environments. This formula provides the foundation for learners' theoretical construct of life space (LSP), which refers to the sum of all the personal and environmental factors may include illiterate home background and hereditary factors such which lead to some abnormal brain structure or functioning among others. Environmental factors may include poor and deprived environment, lack of psychological stimulation, malnutrition, illiterate home background and school where there are poor library facilities among others.

METHODOLOGY

The study was an ex-post factor design in which the variables were not manipulated nor controlled. It focused on gender, school location, students' academic performance of in Biology Examination. The dependent variable was students' academic in Biology Examination. The independent variables were gender and school location. Multi stage sampling technique was used to select a sample size of 328 students (162 males and 166 females) from four selected schools located in urban and rural areas of Makarfi LGA Kaduna State, Nigeria. Two schools from the rural and two schools from the urban were selected to produce four (4) schools within Makarfi LGA.

RESULTS

Findings of the study are presented in the Table below:

Table 1: Percentage of students in the selected schools in Makarfi LGA, Kaduna State, Nigeria that obtained credit and above (A1-C6) and pass and below (D7-F9) in the June/July NECO in Biology between 2018 -2020 years.

Year	Total Registered	A1-C6		%		D7-E8		%	
		Male	Female	Male	Female	Male	Female	Male	Female
2018	825	318	251	38.6	29.6	180	76	48.4	40
2019	507	225	100	27.3	11.8	102	50	27.4	26.3
2020	568	281	133	34.1	15.7	90	64	24.2	33.7
		Mean (%)		27.46	15.12	Mean (%)		19.78	20.44

Source: (Exams Office of the Selected Schools, 2021)



Table 2 above reveals that between 2018 and 2020, a period of 3 years, a mean population of 42.58% of students in the selected schools in Makarfi LGA, Nigeria obtained credit and above (A1 – C6), out of which 27.46% were male and the remaining 15.12% were female. Also, a mean population of 40.22% of students in the selected schools in Makarfi had pass and below (D7 – F9) in the

June/July NECO in Biology out of which 19.78 were male and 20.44 were female. This implies that male students outperformed their female counterpart with a mean performance of 27.46% to 15.12%. However, the female students ironically have the highest failure in Biology NECO examinations between 2018 - 2020 years.

Table 2: Performance of senior secondary schools students using their grades in Biology Examination (SSCE NECO) in GSS Nasarawan Doya, Makarfi LGA from 2018 -2020

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
F	111	31.2	31.2	31.2
M	245	68.8	68.8	100.0
Total	356	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

Table 2 present the gender distribution of the respondents. A significant portion of the respondents were male 214(68.8%), while female constitute 111

(31.2%). This implies that most of the respondents that registered for NECO in GSS Nasarawan from 2018 to 2020 are male.

Table 3: Performance of senior secondary schools students using their grades in Biology Examination (SSCE NECO) in GSS Kauran Wali, Makarfi LGA from 2018 -2020

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
F	38	30.6	30.6	30.6
M	86	69.4	69.4	100.0
Total	124.0	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

In addition, as indicated from Table 3, the gender distribution of the respondents with higher portion was 86(69.4%) males, with correspondents female which constitute 38

(30.6%). This implies that most of the respondents that registered for NECO in GSS Kauran Wali from 2018 to 2020 are male.

Table 4: Performance of senior secondary schools students using their grades in Biology Examination (SSCE NECO) in GSS Makarfi, Makarfi LGA from 2018 -2020

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid F	654	69.0	69.0	69.0
M	294	31.0	31.0	100.0
Total	948	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

In addition, as indicated from Table 4, the gender distribution of the respondents with lower portion was 294(31.0%) males, with correspondents female which constitute 654

(69.0%). This implies that most of the respondents that registered for NECO in GSS Makarfi from 2018 to 2020 are females.

Table 5: Performance of senior secondary schools students using their grades in Biology Examination (SSCE NECO) in GSSC Makarfi, Makarfi LGA from 2018 -2020

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
F	176	37.3	37.3	37.3
M	296	62.7	62.7	100.0
Total	472.0	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)



Finally, the Table 5 shows that, gender distribution of the respondents with higher portion was 296(62.7%) males, with correspondents female which constitute 176

(37.3%). This implies that most of the respondents that registered for NECO in GSS Markafi from 2018 to 2020 are male.

Table 6: Performance of senior secondary schools students in rural and urban schools in Biology Examination (SSCE NECO) in Government Secondary School, Nasarawan Doya, Makarfi LGA from 2018-2020.

S/N	Grade	Frequency	Percent	Valid Percent	Cumulative Percent
1.	A1	11	3.1	3.1	3.1
2.	B2	16	4.5	4.5	7.6
3.	B3	10	2.8	2.8	10.4
4.	C4	71	19.9	19.9	30.3
5.	C5	53	14.9	14.9	45.2
6.	C6	92	25.8	25.8	71.1
7.	D7	49	13.8	13.8	84.8
8.	E8	33	9.3	9.3	94.1
9.	F9	21	5.9	5.9	100.0
	Total	356	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

Table 6 shows the performance of students according to the grade obtained from NECO results; the result indicates that 11 (3.1%) of the respondents got A1, 16 (4.5%) of the students got B2, 10 (2.8%) of the respondents got B3, 71 (19.9%) got C4, 53

(14.9%) of the respondents got C5, 92 (25.8%) of the students got C6, 49 (13.8%) of the students got D7, 33 (9.3%) of the students got E8 and 21 (5.9%) got F9. By implication, it can be seen that the majority of the students got C, which is within C4, C5 & C6 (19.9, 14.9 & 25.8).

Table 7: Performance of senior secondary schools students in rural and urban schools in Biology Examination (SSCE NECO) in Government Secondary School, Kauran Wali, Makarfi Local Government Area from 2018-2020.

S/N	Grade	Frequency	Percent	Valid Percent	Cumulative Percent
1.	A1	2	1.6	1.6	1.6
2.	B2	1	0.8	0.8	2.4
3.	C4	17	13.7	13.7	16.1
4.	C5	20	16.1	16.1	32.3
5.	C6	29	23.4	23.4	55.6
6.	D7	24	19.4	19.4	75.0
7.	E8	16	12.9	12.9	87.9
9.	F9	15	12.1	12.1	100.0
	Total	124	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

In addition, Table 8 shows the performance of students according to the grade obtained from NECO results; the result indicates that 2 (1.6%) of the respondents got A1, 1 (0.8%) of the students got B2, 17 (13.7%) of the respondents got C4, 20 (16.1%)

got C5, 29 (23.4%) of the respondents got C6, 24 (19.4%) of the students got D7, 16 (12.9%) of the students got E8, 15 (12.1%) of the students got F9. By implication, it can be seen that the majority of the students got C, which is within C5 & C6 (16.1% & 23.4%).



Table 9: Performance of senior secondary schools students in rural and urban schools in Biology Examination (SSCE NECO) in Gender of Government Secondary School, Makarfi Local Government Area from 2018-2020.

S/N	Grade	Frequency	Percent	Valid Percent	Cumulative Percent
1.	A1	51	10.8	10.8	10.8
2.	B2	23	4.9	4.9	15.7
3.	B3	37	7.8	7.8	23.5
4.	C4	108	22.9	22.9	46.4
5.	C5	52	11.0	11.0	57.4
6.	C6	94	19.9	19.9	77.3
7.	D7	50	10.6	10.6	87.9
8.	E8	26	5.5	5.5	93.4
9.	F9	31	6.6	6.6	100.0
	Total	472	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

Furthermore, Table 10 shows the performance of students according to the grade obtained from NECO results; the result indicates that 10 (10.8%) of the respondents got A1, 23 (4.3%) of the students got B2, 108 (22.9%) of the respondents got C4, 52 (11.0%)

got C5, 94 (19.9%) of the respondents got C6, 50 (10.6%) of the students got D7, 26 (5.5%) of the students got E8, 31 (6.6%) of the students got F9. By implication, it can be seen that the majority of the students got C, which is within C5 & C6 (22.9%, 11.0% & 19.9%).

Table 11: Performance of senior secondary schools students in rural and urban schools in Biology Examination (SSCE NECO) in Government Commercial College, Makarfi Local Government Area from 2018-2020.

S/N	Grade	Frequency	Percent	Valid Percent	Cumulative Percent
1.	A1	45	4.7	4.7	4.7
2.	B2	43	4.5	4.5	9.3
3.	B3	24	2.5	2.5	11.8
4.	C4	156	16.5	16.5	28.3
5.	C5	179	18.9	18.9	47.2
6.	C6	236	24.9	24.9	72.0
7.	D7	113	11.9	11.9	84.0
8.	E8	88	9.3	9.3	93.2
9.	F9	64	6.8	6.8	100.0
	Total	948	100.0	100.0	

Source: (Exams Office of the Selected Schools, 2021)

Finally, Table 12 shows the performance of students according to the grade obtained from NECO results; the result indicates that 45 (4.7%) of the respondents got A1, 43 (4.5%) of the students got B2, 24 (2.5%) of the respondents got B3, 156 (16.5%) got C4, 179 (18.9%) of the students got C5, 24 (19.4%) of the students got D7, 236 (24.9%) of the students got C6, 113 (19.4%) of the students got D7, 88 (9.3%) of the students got E8, 64 (6.8%) of the students got F9. By implication, it can be seen that the majority of the students got C, which is within C4, C5 & C6 (16.1% & 23.4%).

TEST OF HYPOTHESES

Hypothesis One: There is no significant difference in the performance of male and female students in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area.

The T-test was used to test the hypotheses. This type of test statistics becomes appealing for this study as the NECO data were collected from the selected school in Makarfi Local Government Area. The aim of the resultant category is to prepare the data in the required form for the test.



Table 13: Summary of Independent sample t-test the Performance of male and female students in Senior Secondary Schools in Makarfi Local Government Area, Kaduna State

	N	Mean	SD	t-cal	α	t-crit	P-value	Decision
Male Performance	865	1.78	1.156	10.78	0.280	1.97	.010	Rejected
Female Performance	635	1.00	1.091					

Table 13 revealed the performance of male and female students in the selected senior secondary schools in Makarfi Local Government Area, Kaduna State. The table shows that the male students had the mean score of 1.78 with the standard deviation of 1.156, while female students had the mean score of 1.00 with the standard deviation of 1.091. The t-calculated of 10.78 is greater than the t-critical of 1.97, while the p-value is 0.280 ($p < 0.005$). The null hypothesis which states that there is no significant difference in the performance of male and female students in

Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area, was rejected. This result therefore suggests that male students performed far better than their female counterpart in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area.

Hypothesis Two: There is no significant difference in the performance of rural and urban students in Biology Examination (SSCE) in Makarfi Local Government Area.

Table 14: Summary of Independent sample t-test the Performance of rural and urban students in Senior Secondary Schools in Makarfi Local Government Area, Kaduna State

	N	Mean	SD	t-cal	α	t-crit	P-value	Decision
Rural students	815	3.83	0.775	9.76	0.861	1.96	.000	Rejected
Urban students	685	4.65	2.943					

Table 14 revealed the performance of rural and urban students in senior secondary schools in Makarfi Local Government Area, Kaduna State. The table shows that the rural students had the mean score of 3.83 with the standard deviation of 0.775, while the urban students had the mean score of 4.65 with the standard deviation of 2.943. The t-calculated of 9.76 is greater than the t-critical of 1.96, while the p-value is .000 ($p < 0.005$). The null-hypothesis which states that there is no significant difference in the performance of rural and urban students in Biology Examination (SSCE) in Makarfi Local Government Area, was rejected. This result therefore suggests that urban students performed far better than those in rural areas in Biology Examination (SSCE) in Makarfi Local Government Area.

- Senior Secondary Certificate Examination in Makarfi Local Government Area.
- Urban students performed far better than those in rural areas in Biology Examination (SSCE) in Makarfi Local Government Area.

DISCUSSION OF FINDINGS

The result of the location may not have influence on the academic performance of Biology students in Makarfi Local Government Area. The results show that some of the rural schools still performed better than those in the town. This is statistically proven with students NECO performance in Biology subject. In reference to Table 4.5, it shows that G.S.S Nasarawan only 11 students have A1 while 21 students have F9, which is found in the rural area. In addition, Table 4.6, it shows that G.S.S Kaura only 2 students have A1 while 15 students have F9, and this school is found in the rural area; also G.S.S Markafi has 51 A1 and 31 F9. Finally, the G.C.C Markafi, which is commercial school and also found in the town has 45 A1 and 64 F9. However, this contrary to the result obtained in 4.8.3 that

SUMMARY OF FINDINGS

Based on the above analysis the following findings emerged in view of the research questions in the study that:

- Male students performed far better than their female counterparts in Biology at



shows that there is significant difference in the performance of rural and urban students in Biology Examination (SSCE) in Makarfi Local Government Area. This means that geographical location does not determine student performance in biology. On this basis, it can be deduced that school location has no influence in the academic performance of Biology students in Makarfi Local Government Area.

Table 4.8.1 revealed the performance of male and female students in the selected senior secondary schools in Makarfi Local Government Area, Kaduna State. The table shows that the male students had the mean score of 1.78 with the standard deviation of 1.156, while female students had the mean score of 1.00 with the standard deviation of 1.091. The t-calculated of 10.78 is greater than the t-critical of 1.97, while the p-value is 0.280 ($p < 0.005$). The null hypothesis which states that there is no significant difference in the performance of male and female students in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area, was rejected. This result therefore suggests that male students performed far better than their female counterpart in Biology Examination (Senior Secondary Certificate Examination) in Makarfi Local Government Area.

Table 4.8.2 revealed the performance of rural and urban students in senior secondary schools in Makarfi Local Government Area, Kaduna State. The table shows that the rural students had the mean score of 3.83 with the standard deviation of 0.775, while the urban students had the mean score of 4.65 with the standard deviation of 2.943. The t-calculated of 9.76 is greater than the t-critical of 1.96, while the p-value is .000 ($p < 0.005$). The null-hypothesis which states that there is no significant difference in the performance of rural and urban students in Biology Examination (SSCE) in Makarfi Local Government Area, was rejected. This result therefore suggests that urban students performed far better than those in rural areas in Biology Examination (SSCE) in Makarfi Local Government Area.

CONCLUSION

While male students performed better in Biology at SSCE, students from urban

locations performed better than their counterparts in rural students. This may be as a result of teachers not wanting to go to rural schools to teach and students spend so much time on farm work at the expense of the time they spend in schools. This implies that students from rural schools who may have the same ability with students from urban schools are limited by some factors that prevent them from being their best in their academic especially in Makarfi LGA, Kaduna State.

RECOMMENDATIONS

Based on the findings of the study, the paper recommends the following:

1. Government should as a matter of urgency recruit more qualified biology teacher and distribute them equitably to schools irrespective of location.
2. Female students should be encouraged to show more interest in Biology.

REFERENCES

- Adepoju, R.O, (2014). Impact of school location on academic achievement of science students in senior secondary school certificate examination. *International Journal of Scientific and Research Publications*, Volume 4, Issue 9, September 2014 1 ISSN 2250-3153. www.ijrsp.org accessed 12/5/2021. At 10:00am.
- Adeyegbe, S. O. (2012) "How Students Perform at WASSCE Examinations" *Education and Manpower Vanguard* December 19,22.
- Adeyianju, G.C (2013): Effective teaching of ecological concepts for sustainable development: *STAN-Science Teachers Association of Nigeria, series 2008*. Akins press Services Plateau State.
- Agbaje, R.O and Awodun,A.O (2014). Impact of school location on academic achievement of science students in senior secondary school certificate examination. *International Journal of Scientific and Research Publications*, Volume 4, Issue 9, September 2014.



- Ahiaba, E. (2013). Influence of sex and school location on students' achievement in agricultural science. *African Journal of Science*.
- Akindele, I. (2016): Increasing teacher capacity on the use of dissection and experimentation Techniques For effective conduct of biology practical for senior school certificate Examination. *STAN, Biology Panel series*.
- Akpan, B.B. (2018). *Nigerian the future of science education*. Science Teachers Association of Nigeria (STAN). Ibadan, Nigeria: Oluseyi Press limited.
- Alimi, S., & Ehinola, B., and Alabi, O. (2012). International Education studies. *Academic Journal*. 5 (3) 44.
<http://dx.doi.org/10.5539/ies.v5n3.p44>
- Amadi, O. (2017). *Managing the Secondary School*. London Routhedge and Hogan paul.
- Anderson, M. (2014). *Sex differences in general intelligence*. In: R.L. Gregory (ed.), *The Oxford Companion to the Mind*. Oxford. Oxford University Press.
- Aremu, O. A., & Sokan, B. O. (2003). *A multi-causal evaluation of academic performance of Nigerian learners: Issues and implications for National development of Guidance and Counselling*, University of Ibadan, Nigeria.
- Balogun, R. B. (2016). Gender sterotype in Nigeria Educational system: Teachers moderating role. *International Journal of Research in Education*. 4(1&2).
- Biteku, O. F. (2010). Gender equity in science, technology and mathematics: *Paper Presented at the 3rd Biennial Conference of WCCI Nigeria Chapter, Abuja 26th - 29th April*.
- Bolaji, J. (2013). Gender difference in computing participation: The case of University of Uyo. *International Journal of Educational Development (IJED)*, 2(1),190-199.
- Bosede, A.F. (2010). Influence of sex and location on relationship between students problems and academic performance. *Journal of Social Science* 5(4) 340-345.
- Bosede, A.F. (2010). Influence of sex and location on relationship between students problems and academic performance. *Journal of Social Science* 5(4) 340-345.
- Chimombe, E.U. (2011). Effects of gender, age, and education on assertiveness in Nigerian Sample. *Psychology of Women Quarterly*, 27, 1-16.
- Daniels, S. A. (2016). Gender, Cultural issues and Achievement in secondary school mathematics: Implication for female Education. In A. O. U. Onuka (Ed.), *Learning* (156-165). Ibadan: SPARE.
- Danmole, B.T. (2016). The influence of teacher preparation and use of instructional materials on primary school pupils' performance in integrated science. *Ilorin Journal of Education*, 12, 56 – 64.
- Ezeh, D.N. (2016) Influence of Gender and Location on Students' Achievement in Chemical Bonding. *Mediterranean Journal of Social Sciences*.
- Ezike, B.U (2001).The effect of resources distribution and utilization on the performance of students in Chemistry. *M. Ed. Dissertation, university of Ibadan, Nigeria*.
- Federal Republic of Nigeria, (2013). *National Policy on Education*. (Revised) Lagos: N.E.R.D.C Press.
- Funk, H. & Wagnalls, J (2015). On the relation of complex problem solving, personality, fluid intelligence and academic achievement. *Learning and Individual Differences* 36(1)
- Ganiyu, C. (2016). Gender difference in cognition: A function of maturation role. *Science*, 193(190), 157-163.
- Hallack, T. D. (2011): Challenges of implementing senior Secondary



- one (SSI) Curriculum in Nigeria. *Journal of Science Teachers Association of Nigeria*, 38(1&2) 46-50.
- Hansman, R., Tyson, L. & Zahidi, S. (2012). The Global Gender Gap Report. A report Published by the World Economic Forum, Geneva, Switzerland. Retrieved from <http://www.weforum.org/pdf/gendergap/report2009.pdf>. 22/04/2021
- Iwuozo, G.O (2011): Education for sustainable development. In Akale (ed) in Science, Technology and Mathematics Education for sustainable development in Africa. *Ibadan STAN* 90-93.
- Jibrin L. J. (2018). Gender analysis in National Open University of Nigeria (NOUN): Implication and Policy Issues in Bridging the Divide. *National Open University of Nigeria (NOUN): Journal of Applied Science Research* 4 (7), 814-825
- Joseph, E.U, (2017). Factors which Predict Performance in Secondary School Physics in Ebonyin North Educational Zone of Ebonyi State, Nigeria. *Unpublished masters' Degree Dissertation, ESUT*.
- Juma, F. (2011). The Relationship Between Mode of Teacher Motivation and Students Academic Performance in Public Senior Secondary Schools in Bungoma North District. Unpublished M.Ed project Report, Moi University, Kenya.
- Lumuli, N.C. (2019). An Investigation into Internal Efficiency Measures in Promotion of Access and Completion Rates in Public Senior Secondary Schools in Bungoma South District. *Unpublished MEd Thesis*, University of Nairobi.
- NERDC (2012). National Policy on Education NERDC, Lagos. Press.
- Nnamani, S.C, and Oyibe, A.O (2016). Gender and academic achievement of secondary school students in social studies in Abakaliki Urban of Ebonyi State. *British Journal of Education* Vol.4, No.8, pp.72-83.
- Nnenna, Grace, E. (2018) Influence of Gender and School Location on Senior Secondary School Student's Achievement in Biology Inagbani Education Zone of Enugu State, Nigeria. *Journal of Education and Practice* 2222-288X, www.iiste.org accessed on 17/5/2021.
- Ntibi, J.E Edoho, E.A. (2017) Influence of school location on students' attitude towards Mathematics and basic science. *British Journal of Education* 5 (10), 76-85.
- Nwogu, K. N. (2011). Developing study skills as a service subject at the senior secondary school level. *Ibadan: Wisdom Publisher Limited*.
- Okereke, C and Onwukwe, E.O (2011.) Influence of gender, school location and the use of play simulation on school achievement in chemistry. *JORIND* (9)1 June, 2011. ISSN 1596-8303. www.transcampus.org/journals/www.ajol.info/journals/jorind.
- Okorie, E., & Okwo, F.A. and Tartiyus (2004): Effect of position of diagram and Cognitive Style on Biology Achievement of Pre-National Diploma students. *Journal of the Science Teachers Association of Nigeria* 39, (1 & 2) 89-93.
- Onah, E.F. (2011). Influence of sex and school location on students' achievement in agricultural science. *African journal of science, Technology and Mathematics Education (AJSTME)*, 1 (1) 96-102.
- Onipede, H. (2016). National Development Hinges on Quality Education. The Comet, Thursday, 2nd January. Pp. 21
- Owolabi, J. S. (2001). The effect of integration of location, facilities and class size on academic achievement of Biology students. *Journal of Asian Social Science*. 7(5). www.ccsenet.org/ass.
- Simkins, I. (2012). Working memory and reasoning; An individual



- differences Perspective, *international Journal of Psychology*, 9(3) 203-244.
- Spence, D.J. (2014). Engagement with mathematics courseware in traditional and online learning environments: Relationship to motivation, achievement, gender and gender orientation. *Unpublished Ph.D Dissertation, Emory University* .Retrieved March 17, 2021, from <http://www.des.emory.edu/mfp/SpenceDissertation.pdf>.
- STAN (2015): Effective teaching of ecological concepts for sustainable development: *STAN-Science Teachers Association of Nigeria, series 2008*. Akins press Services Plateau State.
- Uwadiae, I. (2011). WAEC released result. *Saturday Punch* September, 27:10.
- Yang, D. H. (2010). Gender and classroom learning. *Psychology in the Schools*, 22, 08-223.