

Comparison of Academic Performance of Senior Secondary School Students in Physics in External Examinations from 2014-2018. (A Case Study of Makurdi Local Government Area, Benue State)

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Abstract: This study aimed to compare senior secondary school student's academic performance in Physics in external examinations from 2014-2018 using specific objectives and research questions for all the secondary schools selected from Makurdi local governments. ANOVA, which is the analysis of variance, was used in analyzing the scores of the students' tests. Similarly, three other hypotheses were tested at a 0.05 level of significance using the Chi-square. The first hypothesis analysis shows no significant difference in male students' academic performance in their Physics subject. The result also showed no significant differences in the male students' academic performance in Physics after they were separated from the female students. The third hypothesis also indicated no significant difference in the male students' performance in Physics in private and public secondary schools. However, there were fluctuations in students' academic performance in Physics in Makurdi over the years of study. As a result, it is recommended that the government empower the ministry of education's supervisory unit to provide timely and thorough teaching instruction supervision to ensure that education practice in the state follows authorized regulations.

Keywords: comparison, academic performance, physics students, secondary school

I. INTRODUCTION

The comparison of academic performance using students' academic performance is challenging since student performance is the product of socio-economic, psychological and environmental factors. Education ought to be growing as a profitable industry with prime objective of maximizing profit by delivering high quality education that produces well educated, skilled mannered students according to needs and requirements of the dynamically growing market. There are two groups of students as generally perceived: those who improve and those who do not improve on their academic performances (Alaye, 2013).

Students performance is also affected by different factors such as learning abilities because new paradigm about learning assumes that all students can and should learn at higher levels but it should not be considered as constraint because there are

other factors like race, gender, sex that can affect students' performance Hansen (2011).

Mishae (2011) explained the effect of age, qualification and distance from learning. Place on the students' performance in his explanation concerns the readiness in doing a particular discipline in the school; for instance, a student that is not capable of doing sciences in the secondary school joins sciences because his/her friends are offering the subjects. Winston et al (2012) added that the academic performance of student is also coined in the student's impatience (this time discount behavior). Yuonne (2012) further elaborated that students' academic performance is very much dependent on SEB (socio-economic background) as per his statement, secondary school student's performance is with statically significant differences. Alexander (2011) explained that some of the practice adopted by secondary school administration could also influence their academic performance, such as organized study groups, debating clubs, media and culture clubs, etc.

According to Bello Lawal, an Abuja-based educationist, a member of the All Nigeria committee of Principals of secondary school (ANCOPSS). The truth is that the reading culture in Nigeria is generally poor. To make it worse, these days, most of our students hardly read. Instead, they waste their precious time watching televisions or films, listening to music, playing to music, playing video/computer games.

Another educationist Mohammed (2010), attributed the dismal performances of students in external examinations to the government's lackadaisical attitude and its refusal to fund the education sector adequately.

According to him, "on several occasions we clamored for improved budgeting allocation to the education sector, but all these have fallen on deaf ears." For instance, UNESCO recommends that 26 percent of any country's budget be allocated to the education sector instead of what we have in Nigeria (Abobe, 2009).

The government is paying lip service to the education sector. Other countries that understand the importance of education have taken proactive steps to fund their education sector adequately. For instance, Ghana has allocated 29 percent to its budget education sector, even far more than the UNESCO recommendation. The same thing with countries like South Africa and Botswana who allocated 35 and 37 percent respectively to the education sector. So until these things are implemented, we would continue to martyr age the future of our children.

Statement of the problem

Secondary school students' performances in physics external examinations, specifically WAEC, have been a nagging issue in Nigeria, particularly in the Makurdi Local Government Area of Benue State.

There has been inadequate funding of secondary schools in Makurdi Local Government Area of Benue State, which is due to the global economic reality as it has dampened the morale of teachers and other workers as it has affected their productivity which could affect the students and lead to poor performance in physics examination. The result is an increasing rate of examination malpractices and contempt by secondary school physics teachers. What is more worrisome is that the Parent-Teacher Association (PTA), the Alumni Association, communities, and social organizations contributing in cash and kind to finance schools seem not to be participating as actively as they were doing before thus heightening the financial crisis in school.

The problem of this study is the inability of the government to proactively take drastic measures in financing the educational sector, which would improve teaching and learning. This study, therefore, is to find out the performance of students in physics examination, specifically WAEC and the improvement strategies to be taken if needed in secondary schools of Benue State.

Purpose of the study

Based on the background and the problem of this study, the study's primary purpose is to compare the senior secondary school students' academic performances in Physics external Examinations from 2014-2018 (a case study of Makurdi Local Government Area, Benue State), specifically the WAEC.

Objective of the Study

1. To determine the difference in the academic achievement of senior secondary school students in Physics examination (WAEC) from 2014-2018.
2. To determine the difference in the quality of grades of students in Physics external examination (WAEC) from 2014-2018.
3. To find out if there is a significant difference in the academic performance of male and female students of private and public schools in Physics in Makurdi Local Government Area of Benue State.

4. To find out if there are significant differences in terms of school equipment/facilities between the private and public secondary schools in Makurdi Local Government Area
5. To find out if there are significant differences in terms of qualification of teachers in private and public schools in Benue State.

Research questions

The following research questions were formulated to guide the study. These questions are:-

- i. What is the difference in the academic achievement of junior students in Physics from 2014-2018?
- ii. What is the difference in the quality of grades of students in Physics from 2014-2018?
- iii. Is there any significant difference in the academic performance of male and female students of private and public schools in Physics in Makurdi Local Government Area?
- iv. Do private schools have better equipment/facilities than public senior secondary schools?
- v. Do private schools have more qualified teachers than public secondary schools?

Significance of the Study

The usefulness of the research work in educational system cannot be over emphasized if the result of the study is properly utilized. It is going to be a benefit to the students, teachers, parents and government. This would help provide some information for curriculum designers and classroom teachers to utilize relevant approaches to enhance meaningful learning and teaching of Physics Education, Physics Education students.

Thus, the knowledge of students' cognitive style and attitude would be very useful in both academic and career enhancement.

The research design of this study is multiple research design, i.e., quasi-experimental design and survey. Quasi-experimental design involves selecting a group upon which a variable is tested, without any random pre-selection processes. It is often integrated with individual case studies; the figures and results generated often reinforce the findings in a case study and allow some statistical analysis.

In fact, quasi-experimental design is normally constructed to analyze the effects of different educational programs on two groups of children, which generates results that show that one program is more effective than the other. While survey research method. According to Abdullahi (2015), the survey research method is a form of descriptive research used when dealing with a very systematic collection of data or information from population or sample of the population through personal interview opinion scale, questionnaire and observation.

Rasaq (2010) also viewed survey research as a study investigating the entire population of people or items by collecting data from a sample drawn from the population and assuming that they represent the whole population.

In line with the objective of the study that is to find out differences in academic performance among students of private and public schools in Makurdi, the target population for this study is made up of secondary school students and teachers from the following private and public schools in Makurdi. They are totaling eighty thousand (80,000) in number. Their distribution is as shown in table 3.1.

Table 3.1: Target Students' population for the Study

S/No	Schools	Number of students	Students' Population
1	Public Schools	117	46348
2	Private schools	89	33652
3	Total	206	80,000

(Source: West Africa Examination Council 2018)

Table 3.2: Target Teachers' Population for the Study

S/N	schools	Number of schools	Population
1	Public schools	3	15
2	Private schools	3	15
	Total	6	30

(Source: Public and Private Primary Schools)

The researcher drew his sample based on the recommendation of Krejcie and Morgan (2010), which states that "out of 1,000,000 populations; 384 sample sizes can be used as the sample size for a study."

This made the researcher use 1104% students to serve as the samples for the study. The sample was drawn from a population of eighty, thousand (80,000) students, teachers and Head teachers. The decision to use this sample by the researcher was informed by such factors as; cost, time and so on.

The researcher used stratified and proportionate sampling techniques in the selection of the samples. Stratified sampling means the process of grouping members of the population in to relatively homogeneous sub-groups before sampling. The strata should be mutually exclusive and every element in the population must be assigned to only one stratum. The researcher used stratified proportionate sampling by grouping the subjects of the study, i.e., secondary school students into two (2) based on sex barrier and proportional allocation was used in each of the strata, i.e., males and females to that of the population, the decision to use this sampling technique was informed by the fact that the number of male students was greater than that of female students and as such, equal numbers of males and females cannot be taken to form the sample for the entire population.

The instrument for data collection used in this study was questionnaires designed by the researcher. A set of questionnaires for both students and teachers was used. Forty questions were constructed from the researcher's Physics subject and the questions were answered by the students selected as samples from the entire population. A teacher questionnaire was also constructed to have vital information for making a good comparative analysis of public and private schools within Makurdi.

According to Osuala (2010), an instrument for a research could be valid when measuring what is supposed to measure. Therefore, to establish the validity of the instrument, experts and professionals were consulted, as such the language can be adjusted and some items could be dropped. The research instruments were submitted to the research supervisor for further comments and suggestions before the final draft was taken for pilot testing.

The researcher collected a letter of instruction from the department of Education U.N.N. to the Benue state universal Basic Education Board division to help the researcher to get permission from the schools' authorities. Thus, one thousand one hundred and four (1104) copies of the questionnaires were distributed to the six different public and private secondary schools in the Makurdi, with the help of research assistants trained on the process of distributing and collecting the questionnaires on behalf of the researcher.

The researcher adopted the self-administration method of test administration in the sense that the researcher administered the test –items with the help of research assistants and then collected them back for analysis. This method was chosen because in some schools' permanent teachers influence external exams by telling students correct answers, e.g., senior secondary school certificate exams. The completed questionnaires were collected back and checked and ensured that the respondents complied with the instruction given in the questionnaires.

The statistical techniques used in analyzing the data collected are: ANOVA (analysis of variance) and Chi-square (X^2) statistical tools as a non-parametric method of testing hypotheses. The researcher used ANOVA to analyze the scores obtained after the study because the groups are two. The decision to use the variable sex was to see if gender can play a role in bringing about differences in the performance of both public and private school students. The researcher also used Chi-square, which is used to establish whether a significant difference exists between the variables at a 0.05 level of significance.

II. RESULT

The researcher conducted tests for 1104 students from both private and public secondary schools selected from Makurdi. The researcher marked the test and analyzed it statistically.

Table 1: Mean and Standard Deviation of Students in Makurdi Local Government Area

Group	Number of pupils	X-mean	S.D
Private	184	39.0	6.4
Public	184	38.6	6.3
Total	368		

It can be seen from the above table that there is no much difference in the Mean and Standard deviation between the two different schools studied. The difference in the Mean scores of private and public schools is less than one. The same thing applied to Standard deviation as mentioned in the table. This shows that there was no significant difference that exists in the students' academic performance in the geography subject of the two different schools studied.

Table 2

YEAR	No of candidates registered	GRADE [A1- C6]	GRADE [D7- E8]	GRADE [F9]
2014	4435	2524 (56.9%)	1243 (28.0%)	668 (15.1%)
2015	3385	1274 (37.6%)	797 (23.5%)	1314 (38.9%)
2016	4289	2296 (53.5%)	1036 (28.7%)	957 (17.8%)
2017	5459	2569 (49.8%)	1825 (31.6%)	1065 (18.6%)
2018	6859	4020 (58.6%)	1124 (16.4%)	1715 (25.0%)

Summary table showing the Analysis of Enrolment, Number and Percentage Passes and Failure of Students in Physics in Senior Secondary Certificate Examination in Makurdi Local Government Area 2014 and 2018.

A cursory look at Table 2 shows the persistent low academic performance of students in Physics over the year of study in Senior Secondary Schools in Makurdi. Since credit pass grade is adjudged a better grade (that is, above average) and usually requested for in the admission process as a requirement for a related course of study in tertiary institution, not very many of the candidates were able to score the grade. The analysis of the number of the candidates that scored was as follows: In the year 2014, it was 2524 (56.9%); year 2015 was 1274(37.6%); also year 2016 was 2296 (53.5%); year 2017was 2569 (49.8%); alsoyear 2018 was 4020 (58.6%). It is observed that there was a fluctuation in the performance of the students in Physics over the period involved in this study. Resultantly, there is no significant difference in students' academic achievement in Physics in Senior Certificate Examination between 2014 and 2018.

On average, the performances call for urgent attention for better academic performance.

Table 3

YEAR	No of candidates that registered	High Quality Grades [A1- C6]	Low Quality Grades [D7- E8]	Failure [F9]
2014	4435	2524 (56.9%)	1243 (28.0%)	668 (15.1%)
2015	3385	1274 (37.6%)	797 (23.5%)	1314 (38.9%)
2016	4289	2296 (53.5%)	1036 (28.7%)	957 (17.8%)
2017	5459	2569 (49.8%)	1825 (31.6%)	1065 (18.6%)
2018	6859	4020 (58.6%)	1124 (16.4%)	1715 (25.0%)

Summary table showing the candidates with high-quality grades, low-quality grades and those with (failure) grade in Physics between 2014 and 2018.

The analysis in table 3 shows there is neither a significant increase in the quality of performance nor a significant decrease in the performance of Physics students in Makurdi over the years of study.

The only noticeable event is that there is fluctuation over the years in the quality of the grades.

For instance, in the year 2014 out of 4435 candidates that sat for Physics examination, 2524 (56.9%) had high-quality grades, 1243 (28.0%) had low-quality grade and while 668 (15.1%) candidates had failure (F9) grade. Also, in the year 2015, out of 3385 candidates that sat for Physics, 1274 (37.6%) had high-quality grades, 797 (23.5%) had low-quality grade and while 1314 (38.9%) candidates had failure (F9) grade. Likewise, in the year 2016, out of 4289 candidates that sat for Physics, 2296 (53.5%) had high-quality grades, 1036 (28.7%) had low-quality grade and 957 (17.8%) candidates had failure (F9) grade. In the year 2017, out of 5459 candidates that sat for Physics, 2569 (49.8%) had high-quality grades, 1825 (31.6%) had low-quality grade while 1065 (18.6%) candidates had failure (F9) grade, also the year 2018, out of 6859 candidates that sat for Physics, 4020 (58.6%) had high-quality grades, 1124 (16.4%) had low-quality grade and 1715 (25.0%) had failure (F9) grade.

Testing of Research Hypotheses

Hypothesis 1: There is no significant difference in the academic performance of male students in Physics subject of private and public secondary schools.

The first hypothesis was tested using one-way analysis of variance to see whether a difference could be obtained in the academic performance of male students in two schools and the result is presented below:

Table 4

Summary of the scores obtained by male pupils of private and public schools in Makurdi Local Government Area

Scores of variation	Sum of squares	Degree of freedom (df)	M-square	F-Ration	P
Between the group	5458.5	237	1293664.5	0.60	0.05
Within the group	384956	2	769912		
Total		239			

The summary table above shows that the calculated value (0.60) is less than the critical value (3.00) $\alpha = 0.05$ with d.f (2,237), which is less than 1. This means that the null hypothesis is accepted that there is no significant difference in the academic performance of male students of public and private secondary schools in Makurdi

There is no significant difference in the academic performance of female students in Physics subject of private and public secondary schools in Makurdi local government area.

The same procedure was employed in analyzing female scores in the two schools and the result is presented below:

Table 5

Summary of the scores obtained by the female students of private and public schools in Makurdi Local Government Area

Scores of variation	Sum of squares	Degree of freedom (df)	M-square	F-Ration	P
Between the group	1659	273	393183	0.585	0.05
Within the group	11,4989	2	229978		
Total		239			

The summary table above shows that the critical value (3.00) is greater than the calculated value (0.585) $\alpha = 0.05$ with d.f (2,237), which is less than 1. This means that the null hypothesis is accepted that there is no significant difference in female students' academic performances of private and public secondary schools in Makurdi local government area.

Hypothesis 2: There are no significant differences in terms of better school facilities between the private and public secondary schools.

Table 6

Below shows the Number of Private and Public schools' Teachers who have chosen "Yes" and "No" concerning better school facilities between private and public schools.

Better school facilities	Private	Public	Total
Yes	30%	25%	55%
No	10%	35%	45%
Total	40%	60%	100%
$\therefore X^2 = E (fo-fe)$			
Fe			
Cell a = 55 x 40	= 22		
100			
Cell a = 55 x 60	= 33		
100			
Cell a = 45 x 40	= 18		
100			
Cell a = 45 x 60	= 27		
100			

Table 7

Chi-square statistics showing the opinions of private and public secondary school Teachers on the Better school Facilities in private and public secondary schools

Cell	F0	Fe	F0-fe	(f0-fe) ²	(fo-fe) ² /fe
A	30	22	8	64	2.9091
B	10	33	-23	529	16.0303
C	25	18	7	49	2.7222
D	35	27	8	64	2.3704
Total					24.032

The above shows that the Chi-square value, which is 24.032 is far greater than the Chi-square table value, which is 3.841 at a 0.05 level of significance with the degree of freedom of 1. This shows no significant differences in terms of school facilities among the private and public secondary schools.

Hypothesis 3: There are no significant differences in terms of qualified teachers between private and public secondary schools.

Table 8

Indicating the Percentage of Private and Public secondary school Teachers that have chosen "Yes" and "No" about qualified teachers in private and public secondary schools

Qualified Teachers	Private	Public	Total
Yes	40%	20%	60%
No	25%	15%	40%
Total	65%	35%	100%

Table 9

Chi-square statistics showing opinions of Private and Public secondary school Teachers on the Availability of Qualified Teachers in private and public secondary schools in Makurdi

Cell	F0	Fe	F0-fe	(f0-fe) ²	(fo-fe) ² /fe
A	40	39	1	1	0.0256
b	25	21	4	16	0.7619
c	20	26	-6	36	1.3846
d	15	14	9	1	0.0714
Total					2.2435
∴ X ²	= 2.2435				
Cell a = 60 x65	= 39				
	100				
Cell b = 60 x35	= 21				
	100				
Cell c = 40 x65	= 26				
	100				
Cell d = 40 x35	= 14				
	100				

Table 4.1 Show that the calculated value of the Chi-square, which is 2.2435 is less than the Chi-square table value, which is 3.842 at 0.05 of significance with a degree of freedom of 1. This means that there are significant differences in terms of qualified teachers in private and public secondary schools and based on the collected data, it shows that private schools are having more qualified teachers than the public secondary schools

III. SUMMARY OF FINDINGS

There was no significant difference in male students' academic performance in all the six private and public secondary schools studied. The male students were separated from the females to see if any significant differences can be found in their performance. The results revealed no significant differences in the male secondary's academic performances in the physics subject.

It is therefore important to note that the main reason for classifying the students according to gender was necessitated by the fact that the researcher wanted to see whether or not gender plays a role in determining academic performance among students as expressed by Yusuf (2013) that gender plays a role in determining academic performance. He supported his ideas using a study conducted on the academic performance of students in higher institutions of learning where he found out that male students performed better than female students because the male students have enough time to go to the library as compared to their female counterparts who are most often preoccupied with domestic activities.

The study also revealed that there was no significant difference that exists in the academic performance of female students in physics subject in the schools studied. Although, the schools differ in many areas like funding, administrative management, location, number of teachers and variables such as incentives to teachers, adequate monitoring, etc., no significant differences were noted in the performance of the students in Physics.

- The study revealed significant differences in terms of school facilities between the private and public secondary schools. This was arrived at after using the Chi-square value which is 24.032 which is far greater than the Chi-square table value, which is 3.841 at 0.05 significance with degree of freedom of 1. This therefore confirmed that there were no significant differences between private and public secondary schools in terms of school facilities.
- The table 4.5 shows that there were significant differences in terms of qualified teachers between the private and public secondary schools selected from the local governments. This was arrived at after calculating the Chi-square value, which was 2.2435 is less than the Chi-square table value, which is 3.841 at 0.05 of significance with degree of freedom of 1. This means that there are significant differences in terms of qualified teachers between private and public secondary schools, and based on the collected data, it shows that private schools are having more qualified teachers than the public secondary schools in the local governments.

IV. CONCLUSION

The results of the study indicated that there was no substantial rising in the performance of students in the External Examination with respect to Physics as a subject and that it cannot be categorically stated that there is a fall in the performances of students in Examination in Physics as a subject within the period under study. What emerged from this study was that there was a fluctuation in students' academic performance in Physics in Makurdi over the years of study in quantitative terms.

Consequently, the analysis showed that there are no significant differences in academic performance of the male students in physics after they were separated from the female students. This was arrived at after comparing the scores obtained by the students of each school. Thus, based on the data collected and analyzed, it proved that there was no significant difference in the male students' performance of private and public secondary schools. The outcome of hypothesis two mentioned that there was no significant difference in the academic performance of female students in physics of private and public secondary schools from the male students. This was arrived at after comparing the scores obtained by the students of each school. It revealed that no significant differences existed in the female students'

performance in all the schools selected from Makurdi local government.

REFERENCES

- [1] Abdullahi (2015) Assessment of Resource Availability for Chemistry Instruction in Secondary Schools in Rivers State; Journal of Emerging Trends in Educational Research and Policy Studies, 3(3), 346-351
- [2] Alexander (2011) Resource Availability, Utilization and Productivity in Public and Private Secondary Schools in Lagos State; A Ph.D seminar paper, University of Lagos.
- [3] Alimi, O. S. (2012). Appraisal of the Adequacy of Available School plant for Primary Education in *Educational Studies*, 4(2): 281-287
- [4] Hansen (2011). Ayedaade Local Government Area of Osun State. *Educational Thought*, 4 (1) 64 – 69
- [5] Maduabum, D.M. (1998) Principle Leadership and Resource Situation as Contingency Factors of School Success in Ondo State. Unpublished Ph.D Thesis University of Ibadan.
- [6] Mathew, T.H. (1998) School Mapping and Resource Supply as Correlates of students Academic Achievement in Kwara State Secondary Schools, Unpublished Ph.D Thesis, University of Ibadan.
- [7] Mishae (2011) “Teacher’s utilization as correlates of student’s academic
- [8] Mohammed (2010) A relationship between school facility & academic performance in Biology. *Journal of Educational Appraisal*, 1(2) 19-23
- [9] Momoh, M. (1980) Teachers Attitude Towards Biology Practical with Particular Reference to School certificate Biology practical Examinations. A case study of Lagos. B.Sc project Report, University of Lagos.
- [10] Moronlola, I. (1982) Analysis of Laboratory Activities in Selected Nigerian Secondary Schools. *European Journal and Science Education*, Vol. 5, (2).
- [11] Musit, T. (2002) ‘Impact of parental socio-economic status on students’ educational achievements at secondary schools of District Malir, Karachi Middle-East’ *Journal of Scientific Research* 6 (6), pp 678-687
- [12] Nacino, S.A (2003) Basic Instructional Technology. Unpublished Handbook, Teacher Education series pp. 6-7.
- [13] Nwachukwu, C.K. (1984) Evaluating the Use of Learning Resources for Primary Science Education. Implications for Learners: 40th Annual Conference Proceedings of STAN., 245 – 249
- [14] Nwachukwu, G.O. (1984). A survey of the resources for the teaching and learning of Biology in some new secondary schools in Lagos. Unpublished Ph.D Thesis, University of Ibadan, Ibadan.
- [15] Odulaja and Ogunwemimo, E. (1999) ‘Influence of family background on academic achievement of secondary schools biology students in Anambra State’ *An Interntational Multidisciplinary Journal, Ethiopia*, 7 (3), pp 156-169
- [16] Odulaja, K. and Ogunwemimo, U. (1989) Quality Improvement of Teaching, Supervision and Administration in Primary Schools in Ajayi, A.O & Akinwumiju, J.A. (Eds): *Personnel Performance and Capacity Building*. Ibadan, Nigeria.
- [17] Ogunniyi, E. (1983) The Learning Resources: Factor in Education and its implication of mass Failure Conference paper Presented at Ibadan.
- [18] Okoli, E. (1995) An Empirical Study of Factors Responsible for poor Academic Performance in secondary Schools in Oyo State. *AJEM*, 4 (1&2), 140-148.
- [19] Olarewaju, U. (1994) the Place of School Library in the New 6-3.3-4 Educational System. *Teachers Journal Ondo State ANCOPSS* (2nd Ed), Ibadan, Evans Brothers Nigeria Publishers.
- [20] Oluyori, J. (1986) *School planning and Maintenance Introduction to Educational Planning*. S Adesina (ed). Ile-Ife University of Ife Ltd, p.210-219.
- [21] Onyehalu, L.N. (2002) Resource and Resource Utilization as Correlates of School Academic Performance. Unpublished Ph.D Thesis, University of Ibadan.
- [22] Opara, O.R. (2008) A Study of the Relationship between Class Size and Educational Quality in Ondo State. Unpublished M.Ed Thesis, University of Lagos.
- [23] Osuala (2010) *Teaching of Life Sciences*. New Delhi, Anmol Publication. Ltd. India
- [24] Popoola, T. A. (1990). An Investigation between Instructional Resources and Academic Performance. Unpublished M.ED Project, University of Ilorin. Pp 133 – 145
- [25] Purnel, R.U. (2008) ‘Exploring factors affecting performance in biology 5090 at selected high schools in Lesotho’ *Mediterranean Journal of Social Science*, 5(8), pp 271-278
- [26] Rasaq (2010) Education: An unprofitable industry in Nigeria. *A postgraduate school interdisciplinary Research Discourse*. Research in Science & Technical Education, Volume 19, Number 2 / November 1, 2001
- [27] Richard, D. and Wills, S. (2001) The Role of the Ministry of Education in selecting a school site for development. *The Beagle, Journal of Primary Education*, 2(1 & 2), 9 – 16.
- [28] Soyibo, K (1997) ‘Factors which influence academic performance in biology in Kenya: a perspective for global competitiveness’ *International Journal of Current Research*, 5(12), pp 4296-4300
- [29] Soyibo, K and Nyong, G.O. (1984). An Analysis of the School Certificate Biology Result of Old and New Secondary Schools in Cross Rivers State 1978 – 1982. *Nigerian Educational Forum* 7(2), 245 – 250.
- [30] Soyibo, K. (1990) ‘Economic status of parents, a determinant on academic performance of senior secondary school students in Ibadan, Nigeria’ *Journal of Educational and Social Research*, 3(1), pp 115-122
- [31] Squire, J. R. (1991). Textbook Publishing in *Encyclopedia of Educational Research*, Vol. 4 (6th Edition), Macmillan, pp. 1419.
- [32] Ukeje, U.T (1970) A study of the Relative Effects of the Problems of Class Sizes and Location of Schools on Performance of Pupils. *In Nigerian Journal of Curriculum Studies*, Vol. VI, No. 2.
- [33] Umoh, E.E and Etuk, U. (2003) Key Issues of Text book provision in the Third World. *Prospects*, 13 (315-325).
- [34] UNESCO. (2008). *Challenges of implementing free day secondary education in Kenya. Experiences from district*. Nairobi: UNESCO. University of Ibadan.
- [35] Walberg, H.J. (2004). What makes Schooling Effective? A Synthesis and critique of three National Studies of Contemporary Education. *A Journal of Reviews*, 1(1), 22 – 24.
- [36] Wales, D.I. (1975) Efficiency of Education in Education and National Building in the Third World, J. Lowe, N. Grant and T.O. Williams (Eds.) Ibadan, Onibonje Press and Book Industries (Nig.) Ltd.
- [37] Winston S. I , and Benjamin, J. A. (2012) School mapping, resources supply and academic
- [38] Witting, N. and Williams, K. (2003) Teachers Perspective on Under-Achievement. *Education Today Journal of the College of Perceptors*, 44(4), U.K. Longman.
- [39] Yvonne (2012) “An Analysis of High School Students’ Performance on Five Integrated Science Process Skills”
- [40] Zunan, D. (2005) Teaching/Learning Resources and Academic Performance in Mathematics in Secondary Schools in Bondo District of Kenya. *Asian Social Science (ASS)*, 6