

Original Article

## The Influence of Social and Economic Disadvantage on Students' Academic Achievement in Senior Secondary Schools Physics

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### ABSTRACT

*This study examined the influence of social and economic disadvantage on students' academic achievement in senior secondary school physics. One hundred and ten students were selected randomly across two randomly selected senior secondary schools in Lagos State. From each of the randomly selected schools the researcher selected fifty five physics students using the simple random sampling technique. A number of related materials both of empirical and theoretical importance were reviewed. This study adopted a simple survey research design and made use of questionnaire in facilitating data collection. The statistical description (such as mean simple percentages and standard deviation) Pearson moment correlation coefficient and Chi-square method were employed for the analysis. Based on result obtained there is no significant relationship between socio-economic disadvantaged students' and their academic achievement. Also there is no significant relationship between parental influence and students' academic achievement in physics. Moreover, recommendations were made for the physics students, teachers, parents government and curriculum developer on ways to improve academic achievement and inculcating positive attitudes in students towards learning physics.*

### INTRODUCTION

Nigeria like any other developing country has witnessed series of political instability with obvious effects on educational policies at federal and state government levels. This gradually laid the foundation of fallen standard in education at secondary school level, which caused differential academic achievement of students. In the quest of finding survival, the nation has evolved serves for socio-economic and educational measures but these have not improved the socio-economic status of families influencing students' academic achievement in Nigeria. According to Olotu (1994), in the quest of finding survival, the nation has evolved serves of socio-economic and educational measures and policies such as Structural Adjustment Programmes (SAP), Austerity Measures, Universal Basic Education (UBE) and devaluation of the Naira. These measures have not improved the socio-economic and educational status of families in the country. They have rather increased their sufferings and widened the socio-economic gap between families. The disproportionate number of student from disadvantaged family backgrounds who prematurely discontinue their careers in senior secondary school has become an important issue in recent years. Despite the expansion in education during the past decades, representation, level of participation and likelihood of success all remain greatest amongst young people from affluent areas and lowest amongst those from deprived neighbourhoods students from disadvantaged backgrounds were more likely to prematurely reduce their level of participation within senior secondary physics education, by dropping out of school or by foregoing the opportunity to progress to more advanced courses in physics. A school qualification is strongly associated with social disadvantaged primarily determined whether the student accessed post-school education and if so at what level of participation. A variety of factor is capable of influencing the academic achievement of senior secondary school physics student.

Over the years, assessments of factors that influence academic achievement senior secondary physics education student have attracted the interest and concern of many researchers, teachers, parents and national leaders. It is a well known fact that student achievement in academic activities vary, some students in physics perform better than the other, many disadvantaged students feel that the length of their student career would be limited by their finances, rather than by their

academic ability and this make them lag behind in their academic achievement. Students from particularly disadvantaged backgrounds of ten find themselves at odds with certain aspects of their non-academic background. In some cases, particularly males, an anti-education ethos seemed to be operating against participation in secondary education. Such pressures could emanate from friends and family, to whom secondary education may be an unimportant issue. Recent research in the area of steady decline in learning outcome in physics show that the social and economic disadvantage is a major problem affecting academic achievement of student Clemens and Oeike (1967) and Emeke (1984) in their studies have attributed the causes of academic achievement to a combination of personal institutional factors. Personal factors relate to the individual intelligence, knowledge and ability. Institution factors are family or parental influence, school related factors. Enclosed within the institutional factors are teacher related factors and living condition.

High level of illiteracy, poverty and low socio-economic status coupled with high rate of paternal and maternal deprivation of student academic needs, which was necessitated by poor socio-economic situation of the country has thrown many families into untold financial problems such as poverty and lack of money to purchase textbook and provide the best for their children. This poor parental care with gross deprivation of social and economic need of a child, usually leads to poor academic achievement of physics student which is obvious in their school performance, WAEC and NECO result. Teachers and researchers have tried to find out the factor responsible for these differences in academic achievement so as to devise a way of helping those who do not perform well.

Awareness of the significance of the home environment or family as it influences academic achievement has been developed and constantly studied by educational psychologist, counsellors and school administration this is done to critically investigate how the home environment or family aspect such as is socio-economic status affect students' achievement. The family is a great influence on the students' psychological, emotional socio and economic state. Higher intelligence in individuals is only forested by wrath, support plentiful opportunities, autonomy and reward of achievement which is mostly not found in social and economic disadvantaged family or homes. A family's socio-economic status determines its social and economics standing in the society. The family's characteristic that is most powerful indicator of its children achievement is the socio-economic status.

Therefore, there is no doubt that a study on the influence on social and economic disadvantage on student academic achievement in physics is important at the time.

### **STATEMENT OF THE PROBLEM**

In years past, it has being noticed that students' academic achievement from social and economic disadvantaged background is poor, disadvantaged physics students are not enjoying an equal level of success within secondary education as their more advantaged peers. Not only are such students less likely to reach degree status, but even those who do are likely to have suffered from a number of barriers which may have hindered their progress and deterred them from continuing any further. Despite the effort of researches, parents, teachers and government the poor achievement of student in physics is still a recurring problem that is imperative at this time.

### **REVIEW OF LITERATURE**

In Nigeria, a lot of literatures exist in the area socio-economic disadvantage as a factor affecting the academic achievement of students. This literature will be discussed under the following headings:

1. Role of supportive school environment in academic achievement.
2. Parental involvement and academic achievement.
3. Poverty.
4. Student beliefs and attitudes.
5. Student learning outcomes.
6. Socio-economic backgrounds and students' learning.
7. Government policies.
8. Summary of Review.

The learning environment that is free of barriers or obstacle or distractions such as noise, gas/smoke pollution and so on can constitute health hazards which in turn reduces student concentration or perceptual and conceptual focus of learning (Sprinthall 1987). Markets and

garages located near school have always posed a threat to students. Noise and pollution from these sources have always endangered students' life and concentration. Therefore for an effective learning and high academic performance, schools in both rural and sub-urban and urban areas should be located off zones, characterized with smoke/gas pollutions, market centres or garages. As conducive learning environments stimulate learning, understanding and high perception. Other factors according Danesy (2004), complimenting environmental and socio-economic factors to produce high academic achievements and performance includes good teaching, counselling, good administration, good seating arrangement and good building. Dilapidating buildings, lacking mental stimulating facilities that are characterized with low no seating arrangement will also be destructive. Danesy, however, lamented that the innovation environment do stimulate head start learning and mental perception, not only that, it has also been proved that students that come from stimulative environment with laboratory equipments or those that are taught with rich instructional aids, pictures and allowed to demonstrate using their functional peripheral nerves life eyes, hands and sense of taste performed better than those trained under theoretical and canopy of abstraction. Thus, teaching and learning should be done under organized, planned and fortified environment with learning instructional aids to stimulate students' sense of conception, perception and concentration to facilitate systematic understanding and acquisition of knowledge in them. In sum, a combination of a healthy family background living in good environment plus the child being educated in a conducive environment with fortified learning or instructional aids or motivational incentives will prompt academic performance and lack of it will retard academic performance.

The environment at the school level can influence the behaviour of staff and students and their consequent success in teaching and in learning Creemers (1994), while studying classroom effect, observed that school-level environment factors influence education at the classroom level. Evidence can be found that schools with favourable environment are academically more successful with students, some researches have argued that conclusions about these relationships are premature because the school level has been confounded by several issues.

Home background according to PISA (Programme International Students Assessment, 2000) influences academic and educational success of students and school work while socio-economic status reinforces the activities and functioning of the teacher and student. From the above, it is revealed that the quality of parents and home background of a student goes a long way to predict the quality and regularity of the satisfaction and provision of a child's functional survival and academic needs.

Danesy and Okedirin (2002) lamented that street hawking among young school students have psychologically imposed other problems, like sex networking behaviour, juvenile delinquent behaviour, which takes much of the student school time that necessitated the poor academic performance and drop out syndrome noticed among school students.

According to Akande (2002), the ultimate purpose of effective teaching is to bring about learning on the part of the learner. No teaching as taken place unless learning is achieved, measuring learning outcomes which provides useful information for improving education planning, management and learning outcomes starts in the classroom.

Soyinbo (1986) examined the influence of students' misconception on their learning outcomes. His findings show that many students view physics as very abstract and incomprehensible and difficult. The table below gives the statistics of the performance of students in West Examination (WAEC), 1992-2002 in Physics.

Students' attitudes about the value of learning physics can be considered as both an input and output variable, because attitudes towards the subject can be related to educational achievement in ways that reinforce higher or lower performance. That is, students who do well in physics generally have more positive attitude towards the subject, and those who have more positive attitudes tends to perform better. Students' believes in the way they learn influence achievement outcomes. Attribution theory is concerned with how we perceive causality and the consequence of our perceptions. In relation to learning attribution theory illuminates how we understand and react to our achievement whether we judge it to be the result of internal factor such as ability and effort or external factors such as good or bad luck. In measuring student success attribution we are measuring the degree of perceived personal responsibility for success or failure.

The social and economic status of parents in term of financial resources and home location are quite important in the education and academic achievement of their children Ivowi (1984) found out in his study that the type of education received during his/her formative years is likely to contribute to his/her future education career.

This literature review shows the concern of researches, educators, educational bodies and the government at all level has been on how to improve the academic achievement of senior secondary school science student from social and economic disadvantage background especially in physics. Despite their unrelenting efforts, this problem of academic achievement amongst the students from social and economic disadvantaged background is still prevalent. Hence this study intends to find out the effect of social and economic disadvantage background on the academic achievement of senior secondary school physics student.

### **PURPOSE OF THE STUDY**

This research intends to study the influence of socio-economic disadvantage on the academic achievement of senior secondary physics student and why disadvantage young people are not enjoying an equal level within senior secondary education as their more advantage peers.

### **RESEARCH HYPOTHESES**

In this study, the following null hypotheses shall be tested:

1. There will be no significant relationship between socio-economic disadvantage students' and their academic achievement in senior secondary school physics.
2. There will be no significant relationship between parental influences and students' academic achievement in senior secondary school physics.

### **METHODS**

The research design used is the simple survey. This research focused on the influence of social and economic disadvantage on students' academic achievement in senior secondary school physics.

### **INSTRUMENT**

The instruments used in this study are:

- Physics achievement test
- Students' questionnaire.

The physics achievement test was design and administered to show each students' performance and to show in general, the positive or otherwise of students' learning outcome. The achievement test comprised to multiple choice questions. The administration of the achievement test included exert instruction o follow, the amount of time that will be used in answering the test and amount of help received from the examiners.

The students' questionnaire contains 2 sections. Section A and B. Section A was bio-data. The bio-data comprised of Name of Student, Age, Sex, Name of School, Class, information on their parents and family members.

It also comprised of 20 questions to which the student responded and their response gave the researcher an insight into their socio-economic background. Section B comprised of 15 questions which involve the student using kepert scale, in answering the question.

### **DATA ANALYSIS AND RESULTS**

The student academic achievement statistical treatment of data collected was analysed using statistical package for social sciences (SPSS) and q1uestionnaire processing software for market research (QPSMR).

These include:

- (i) Descriptive statistics (frequency, percentage, mean, standard deviation).
- (ii) Pearson moment correlation coefficient
- (iii) Chi-square test.

An attempt was made to classify respondents according to sex, age, name of school and socio-economic status. The data collected from the questionnaire that were designed for the study with special reference to the hypothesis in this study, was processed using the questionnaire processing software for market research used for data entry and editing. Statistical package for social science

was used to analyse the data entered. The questionnaire comprise only single coded questions i.e. question hat require single response.

**RESPONDENTS' CHARACTERISTICS AND CLASSIFICATION**

**Table 1: Name of School**

SCHOOL NAME	FREQUENCY	PERCENTAGE
Aguda Senior Grammar School	86	78.2
Sanya Senior Grammar School	24	21.8

The table above shows the distribution of respondents according to name of schools. It would be observed from table 1 above that more than 78.2% of the respondents were randomly sampled from Aguda Senior Grammar School whereas 21.8% of the respondents were from Sanya Senior Grammar School.

**Table 2: Age of Respondent**

AGE RANGE	FREQUENCY	PERCENTAGE
Less than 14 years	3	2.7
14-16 years	72	65.5
17 years and above	22	20
No response	13	11.8

Table 2 above shows the distribution of the respondents according to age. It would be observed that 65.5% of the respondents were aged between 14 and 16 years whereas exactly 20% were 17 years and above. However, only 2.7% of the respondents were less than 14 years whereas 11.8% of the respondents did not respond to the questions.

**Table 3: Sex of Respondent**

SEX	FREQUENCY	PERCENTAGE
Male	70	63.6
Female	40	36.4

Table 3 above shows the distribution of the respondents according to sex. It would be observed that 63.6% of the respondents were male and only 36.4% of the respondents were female.

**Table 4: Social class status of Respondent**

STATUS	FREQUENCY	PERCENTAGE
Low	56	50.9
High	54	49.1

Table 4 above shows the distribution of the respondents according to social class status. This was obtained by combining the household income and apartment type as opined by the respondents as these are important factors used in determining social.

**Table 5: Descriptive statistics of the allowance and achievement in physics test of Respondent**

		Minimum	Maximum	Mean	Standard deviation
Allowance	110	0	4500	341.82	790.382
Achievement	110	0	8	3.51	1.770

It would be observed from table 5 above that the mean allowance of the respondents was 341.82 with corresponding standard deviation of 790.382. This implies that there was a wide dispersion in the weekly allowance of the respondents as it was even shown on the table that the minimum allowance was zero and the maximum being 4500 which resulted to the high value f standard deviation which measure the degree of dispersion. Also from table 5 it would be observed that the mean achievement of respondent in physics test was 3.51 with correspondents of 1.770 as standard deviation. Moreso, the minimum score obtained was zero whereas the maximum score

being 8. It could be deduced from the mean value of the respondent achievement in physics that most of the respondent scored below average.

**Table 6: Impact of socio-economic status on students' achievement in physics**

	SA	A	SD	D	U	DECISION
My parent socio-economic status plays a major role in my academic achievement in physics.	28.5	32.7	11.8	7.3	22.7	Agree

**Table 7: Effect of social class on student grade in Physics**

Grade	Social Class		Total
	Low	High	
A	1	6	7
B	3	9	12
C	41	31	72
D	2	1	3
F	4	2	6
Total	51	49	100

Chi-square

Chi-square test statistic 8.924

Degree of freedom 4

Asymptotic significance (2 – sided) 0.063

Level of significance 0.05

### DISCUSSION AND CONCLUSION

The outcome of the study shows that the relationship between the socio-economic disadvantaged students' and their academic achievement in physics significant at 0.05 level of significance and the P-value is 0.788.

Educational reforms of the last half can being had attempted to make education and training system functional so that student outcome like school achievement are not strongly related to their social and economic background and other ascribed characteristics of student such as age and urban/rural location.

This is supported by the study done by Cornelius J. Troost (1991), using different social and economic backgrounds show that high achieving student from completely different socio-economic background does not differ significantly in science achievements. Similarly, the students' from social and economic disadvantage background does not really affect the academic achievement in physics.

Home background according to PISA (Programme International Students Assessment, 2000) influences academic and educational success of students and school work, while socio-economic status reinforces the activities and functioning of the teacher and students.

The outcome of the study shows that the relationship between the socio-economic disadvantage students' and their academic achievement in physics is significant at 0.05 level of significance and the p-value is 0.063 where a child suffers parental and material deprivation and care due to divorce or death, or absconding of one of the parents, the child's schooling may be affected as the mother alone may not be financially buoyant to pay school fee, purchase boots and uniforms, such child may play truant, thus his performances in school may be adversely affected (Shittu, 2004). Hence similarly, a parental influence does not contribute or affect their academic achievement. The following conclusions were reached based on the result obtained in this study:

- (i) The academic achievement of student does not depend on social and economic status but also on the other factors such as age, gender, immediate environment and so on.
- (ii) Learning environment and the availability of infrastructure contribute to improve academic achievement.
- (iii) Parental influence as a little effect on their children's academic achievement.
- (iv) Academic achievement is enhanced by advantage social and economic status, positive parental influence conducive learning environment.

## IMPLICATION

Education is universally accepted as one of the catalyst of social and economic development social and economic status, therefore as a lot of effect on the academic achievement of senior secondary school generally.

Ipaye (1996) in the same vein reiterated the effects of poverty of the parents on the Nigerian child. According to him, poverty syndrome imposed by economic crunch, mal-administration, corruption and emergency closure of firms has imposed hardship among parents or workers. Danesy and Okediran (2002) lamented that the maternal and paternal deprivation of the essential needs of the young students have prompted their poor performance in public examination, such as JSSCE, WAEC and NECO.

The implications of these to students are:

- It ameliorates the problems of poor academic achievement of student in physics and to ensure improvement in academic achievement of physics student.
- It also implies that guidance and counselling classes should be provided for physics students in order to chance the monitoring of academic achievement negative attitude and beliefs towards physics as this would help improve students' perception and overall attitude towards academic achievement.
- This also implies that parents and government will help in making necessary adequate provision of books, good building and adequate facilities/equipment for practical. It also implies that, they will provide an environment for conducive learning.

## RECOMMENDATIONS

Based on the results of the study, the researcher made the following recommendations:

Government should organize programme that will truly help to solve the problem of poverty in the country. Existing poverty alleviation programme should be implemented properly and improved so that it will solve problem of social and economic disadvantage families. The problem of chronic under funding of education sector should be reviewed by the government in order to cater for the building of schools, provision of infrastructural facilities needed to study physics and science in general. They should also help in maintaining laboratories where available so as to reduce the rate of failure in physics practical examination and help make the school environment conducive for learning so as to improve students' academic achievement.

Curriculum developers should try and include activities that will allow parent participation in order for them to carry them along in their child academic. The curriculum should be flexible so as to cater for the student in the varying levels of achievement in cognitive, affective and psychomotor domain of learning.

Parent should show more interest in their children's educational welfare especially those in science by improving their financial obligation towards their children's education. They should not depend entirely on government for the provision of all facilities and finances. They should display a positive attitude towards their children's academic and academic achievement. They also complement teacher's effort by encouraging their children to study physics so as to help them develop negative attitude and belief towards science in general. Student should display positive attitude and beliefs towards learning. They should not allow their immediate environment stop or affect them from achieving academic excellence in order to make themselves better people and their society a better one.

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