IMPACT OF ECONOMIC RECESSION
IN OSUN STATE OF NIGERIA ON PHYSICS EDUCATION:
THE WAY FORWARD

Akinbobola, Akinyemi Olufunminiyi[1i],
Bada, Abiodun Adekunle[2]

[1]Ph.D, Department of Special Education
and Curriculum Studies,
Adeyemi College of Education,
Ondo, Nigeria
[2]Department of Special Education
and Curriculum Studies,
Adeyemi College of Education,
Ondo, Nigeria

Abstract:

This study investigated the impact of economic recession in Osun State of Nigeria on Physics education. The study adopted descriptive survey design. 400 Physics students were randomly selected from the population through random sampling technique and were used for the study. Physics Achievement Test (PAT) and Impact of Economic Recession on Physics Education Questionnaire (IERPEQ) were the instruments used to collect data. The internal consistencies of PAT and IERPEQ were 0.81 and 0.76 through the use of Kuder-Richardson formula 21 and Cronbach Alpha respectively. The results showed that, economic recession has negative impact on standard of education ($r = -.89$, $p = .000$), teaching process ($r = .82$, $p = .000$) and students' academic performance in Physics ($r = -.84$, $p = .000$). The results also showed that economic recession has highest impact on standard of education ($r^2 = .79$) in Osun State of Nigeria. This was seconded by students' academic performance in Physics ($r^2 = .71$) while economic recession has the least impact on teaching process ($r^2 = .67$) in Osun State of Nigeria. It was recommended among others that, Nigerian government should find another means of generating income apart from crude oil export in order to cushion the effect of economic recession and also, Nigerian government should allocate at least 26% of the total budget to education as recommended by UNESCO.

Keywords: economic recession, Nigeria, physics education

---

[i] Correspondence: email akinbobola2006@yahoo.com

1. Introduction

Physics is the bedrock of technological development of a nation. This implies that, high level of scientific and technological attainment of a nation depends on the Physics education of the citizenry (Akinbobola, 2006). Nigeria as a country suffers from persistent power failure, insufficient food, medical care, portable water as well as unconducive living and working environment that indicate the low level of scientific technological development (Akinbobola, 2015). The standard of education in Nigeria is of great concern compared to other developing countries. It is generally believed that, good education is the gateway to success and cornerstone of social emancipation, economic achievement and natural development. It is one of the responsibilities of government to provide relevant and adequate educational opportunities to her people. Education is the key to socioeconomic development and political transformation and also, a basic human right which plays a vital role in combating ignorance, crime and poverty (Abhishek & Evelin, 2016).

In Nigeria, efforts are made towards encouraging more students to study Physics. However, there is economic recession in Nigeria which affects all the sectors including educational sector. Recession implies a fall in real gross domestic product (GDP). A recession is a period of negative economic growth for two consecutive quarters. Recessions are primarily caused by a fall in aggregate demand. It is not as severe as depression (John, 2002). Recession is a significant decline in economic activity spread across the economy lasting more than few months, normally visible in a real gross domestic product (GDP), real incomes, employment, industrial production and wholesale – retail sales (John, 2002). According to Tejvan (2012), a recession means a fall in GDP or national output. A recession will typically be characterized by high unemployment, falling average income, increased inequality and higher government borrowing. The impact of a recession depends on how long it lasts and the depth of the fall in output.

Recession refers to an all-round slowdown or meltdown in economic activity for two sequential years (Noko, 2017). During this period of recession, there is often times a rejection in certain macroeconomic pointers such as GDP, employment investment spending, capacity utilization, household income, business income and inflation, with the attendant increase in the rate of unemployment. Naturally, if an economy has two years sequential record quarters of negative growth in real GDP, the country will be said to be in recession. Noko (2017) asserts that, GDP is the market value of all legitimately acknowledged final goods and services produced in the country in a given period of time, usually one year. Judging by the definition, Nigeria is experiencing economic recession currently, since her first and second quarters growth in 2016 are – 1.7% and – 2.06%.

Sobowale (2016) viewed recession on education sector like an earthquake that the effect will last longer and be more devastating and that the decline in manufacturing, banking and services, as well as non-oil exports will appear like a child's play compared to its effect on education. In a developed country like United State of

America, recession is an old story. America has had 47 economic recession in their history. The most recent one occurred 2007 – 2009 which they called Great Recession. In United Kingdom and all other EU member states, they have had major and minor recession for more than 20 times (Tejvan, 2012).

The national politics determines the quality of education policies, programmes and processes and eventually the products i.e results or outcomes. Government underfunding and commoditization of education is likely to worsen the crises in education. The current economic crisis confronting many governments is creating severe conflicts in educational sector of many nations. On one hand, they had to reduce their budget deficits to avoid causes excess indebtedness; on the other hand, they had to promote education in order to alleviate unemployment as a short run crisis measure and to avoid the deterioration of human capital in the long run (Sobowale, 2016). In Nigeria, high percentage of national focuses is on the public funding, which greatly affect the education sector. The government carried out overall budget cuts. These had negative effects on teachers, students and families (Ochu, 2010).

In Nigeria, education is feeling this recession sharply. All the stakeholders in education sectors including students, teachers, lecturers, researchers, librarians, administrative clerks and school proprietors have their share in recession. With decreasing revenues and rising costs, schools are forced to make tough decisions if they are to balance their budgets and still meet the needs of their students and staff. Nearly all private schools in Nigeria have their funding through parents and guardians. Many parents are withdrawing their children from private schools to public schools. The little funding from state and federal governments to schools have seriously declined if not completely cut off. In all these schools, income is declining but requirements are not. Some states in the past see education as an investment in their economic future, so it is usually the last area of the budget to be cut. But today, many states have slashed their own budgets at the expense of the public schools. Rising costs, coupled with no substantial increase in funds are the challenges facing public schools in Nigeria.

Nigeria workers have been in a pitiable situation as a result of economic meltdown that befell the economy. The effect of economic recession on Nigerians in general and Nigerian workers in particular includes salary downsizing, delay in or no salary increment, unemployment, inflation, retrenchment, loss of jobs, currency dislocation and collapse of existing companies.

2. Statement of the Problem

Presently in Osun State of Nigeria, secondary schools are not properly funded in the areas of physical infrastructures, laboratory materials, tools and equipment, instructional materials and conducive learning environment. Teachers have been paid half salaries for the past 28 months. This has affected teachers in various ways which include; poor standard of living, lack of adequate care on their children, ejection by landlords from their rented houses, poor condition of health, malnutrition, lack of respect in the society, absenteeism in school, low morale in impacting relevant

knowledge to learners, lack of interest in teaching job, relocation of their children from standard schools to local schools, irregularity and lack of zeal for teaching, inferiority complex, no room for self and professional development and psychological trauma. Hence, teachers cannot put in their best into the teaching service and students are left alone to self-tutoring and peer tutoring. Therefore, it is inevitable to find out the impact of economic recession on standard of education, teaching process and students' academic performance in Osun State of Nigeria.

2.1 Purpose of the Study

This study aims at achieving the following objectives:

1. To find out the impact of economic recession on the standard of education in Osun State of Nigeria.
2. To investigate the impact of economic recession on the teaching process in Osun State of Nigeria.
3. To examine the impact of economic recession on students' academic performance in physics in Osun State of Nigeria.

2.2 Hypotheses

Ho1: There is no significant relationship between economic recession and standard of education in Osun State of Nigeria.

Ho2: There is no significant relationship between economic recession and teaching process in Osun State of Nigeria.

Ho3: There is no significant relationship between economic recession and students' academic performance in Physics in Osun State of Nigeria.

3. Research Method

The research design adopted for the study was descriptive survey design. The population consisted of all senior secondary three (SS 3) Physics students in Ife Central Local Government Area of Osun State, Nigeria. The size of the population was 801 Physics students. Fifty percent (50%), that is, 400 Physics students who were randomly selected from the population through random sampling technique were used for the study.

Two researchers-made instruments were used for the study. They comprised, the Physics Achievement Test (PAT) and Impact of Economic Recession on Physics Education Questionnaire (IERPEQ). The Physics Achievement Test (PAT) comprised 25 multiple choice items on the concept of energy quantization and duality of matter. Each item had four options with only one correct answer. Each correct answer was scored 4 marks. The researchers based the PAT on a survey of the topic already covered by SS 3 Physics in the concept of energy quantization and duality of matter.

The impact of economic recession on Physics education questionnaire (IERPEQ) was 30-item questionnaire measured on a 4-type rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The IERPEQ was based on

economic recession, standard of education and teaching process. The IERPEQ was scored using a score range of four (4) for Strongly Agree (SA) to one (1) for Strongly Disagree (SD) for positive items and the scoring was reversed for negative items. The instruments were face and content validated by two Physics experts and two Economics experts. Their comments and suggestions on the suitability were incorporated in the final draft of the instruments.

A trial test was conducted with 40 SS III students who were randomly selected from a school within the population but not part of the main study. The results obtained from PAT were subjected to Kuder-Richardson formula -21 and the result showed internal consistency of 0.81. The results obtained from IERPEQ were subjected to Cronbach alpha coefficient and the result showed internal consistency of 0.76.

The PAT and IERPEQ were administered to the Physics students through the help of research assistants (Physics teachers) in all the ten schools selected for the study. The students were assured of the confidentiality of their responses.

Pearson Product Moment Correlation (PPMC) was used in testing the hypotheses formulated at .05 level of significance.

4. Results

Hypothesis 1
There is no significant relationship between economic recession and standard of education in Osun State of Nigeria.

Table 1: Pearson Product Moment Correlation analysis showing relationship between economic recession and standard of education

Variable	N	$\sum X, \sum Y$	$\sum X^2 \sum Y^2$	$\sum XY$	r-cal	Sig.	Decision
Economic Recession (X)	400	1278	7952	8032	- .89	.000	*
Standard of Education (Y)	400	1760	9632				

* = Significant at P< .05
r^2 = .79 (strength of relationship)

Table 1 shows that, there is significant relationship between economic recession and standard of education (r = -.89, P = .000), therefore the null hypothesis is rejected. The r-calculated value of -.89 shows that, economic recession has negative impact on standard of education in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient, .79 indicates that, 79% of the fallen standard of education is associated with economic recession in Osun State of Nigeria.

Hypothesis 2
There is no significant relationship between economic recession and teaching process in Osun State of Nigeria.

Table 2: Pearson Product Moment Correlation analysis showing relationship between economic recession and teaching process

Variable	N	∑X, ∑Y	∑X²∑Y²	∑XY	r-cal	Sig.	Decision
Economic Recession (X)	400	1278	6898	5884	- .82	.000	*
Standard of Education (Y)	400	1322	5838				

* = Significant at P<.05

r^2 = .67 (strength of relationship)

Table 2 shows that, there is significant relationship between economic recession and teaching process (r = -.82, P = .000), therefore the null hypothesis is rejected. The r-calculated value of -.82 shows that, economic recession has negative impact on the teaching process in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient, .67 indicates that, 67% of the poor teaching process is also associated with economic recession in Osun State of Nigeria.

Hypothesis 3

There is no significant relationship between economic recession and students' academic performance in Physics in Osun State of Nigeria.

Table 3: Pearson Product Moment Correlation analysis showing relationship between economic recession and students' academic performance

Variable	N	∑X, ∑Y	∑X²∑Y²	∑XY	r-cal	Sig.	Decision
Economic Recession (X)	400	1278	6898	6844	- .84	.000	*
Standard of Education (Y)	400	1608	7920				

* = Significant at P<.05

r^2 = .71 (strength of relationship)

Table 3 shows that, there is significant relationship between economic recession and students' academic performance (r = -.84, P = .000), therefore the null hypothesis is rejected. The r-calculated value of -.84 shows that, economic recession has negative impact on students' academic performance in Physics in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient, .71 indicates that, 71% of poor students' academic performance in Physics in Osun State of Nigeria is associated with economic recession.

Table 4: The ranking of standard of education, teaching process and students' academic performance with economic recession

S/N	Predictor Variables	Strength of relationship r^2	Rank
1	Standard of Education	.79	1st
2	Students' Performance	.71	2nd
3	Teaching Process	.67	3rd

Table 4 shows that, economic recession has highest impact on the standard of education in Osun State of Nigeria. This is seconded by students' academic performance in Physics while economic recession has the least impact on teaching process in Osun State of Nigeria.

5. Discussion of Findings

The results of hypothesis one showed that, there is significant relationship between economic recession and standard of education in Osun State of Nigeria. The r-calculated value of -.89 shows that, economic recession has negative impact on standard of education in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient, .79 indicates that, 79% of the fallen standard of education is associated with economic recession in Osun State of Nigeria. This is in line with the result of Kumuyi (2010) that, in Nigeria, the educational system is almost completely dependent on government budgetary allocation and with the economic recession; the sector will no doubt witness its fair share of budget cuts which will affect not only the teachers, but also students and families. Irregularities of teachers in schools, loss of interest in teaching job, lack of adequate care of students and many more bring about fall in standard of education. Teachers' salaries represent about two-thirds of public expenditure on education, which explains why in some countries the first signs of a slowdown had a direct impact on education.

The results of hypothesis two indicated that, there is significant relationship between economic recession and teaching process in Osun State of Nigeria. The r-calculated value of -.82 showed that, economic recession has negative impact on the teaching process in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient, .67 indicates that, 67% of the poor teaching process is also associated with economic recession in Osun State of Nigeria. This is in agreement with the findings of Ochu (2010) that, challenges faced by most of the developing countries which have some serious effect on education burdened by disappointments and shortfalls in expectations are rooted on social, economic and political factors, which also mutually interact with each other. The global economic recession has effects on Nigeria economy which has led to depletion of stocks, loss of job occasioned by the closing down of many companies, devaluation of the naira, culminating in government inability to fund education. Irregularities in the payment of teachers' salary have developed poor health conditions, and the standard of living is so poor that, most of them have incur debts that brought about low self-esteem as well as lack of respect in the society. The zeal for teaching is loss and there are irregularities of teachers in schools.

The results of hypothesis three indicated that, there is significant relationship between economic recession and students' academic performance in Physics in Osun State of Nigeria. The r-calculated value of -.84 showed that, economic recession has negative impact on students' academic performance in Physics in Osun State of Nigeria. The value of r^2, the square of the index of correlation coefficient .71 indicates that, 71%

of poor students' academic performance in Physics in Osun State of Nigeria is associated with economic recession. This is in line with the findings of ANON (2016) that, recently in Nigeria and South West of Nigeria in particular, effects of economic recession have made many parents unable to pay their children's school fees. Parents, particularly civil servants and retirees from public sector of the economy have been so improvised by unpaid salaries, pension and other allowances. According to them, they have no means of meeting up with their family needs than sending their children to the street to hawk which affect the students' performance in education generally. The children are being deprived of good nutrition, they eat what they see, absenteeism from school is on the high side because, some don't have food to eat, and there is lack of concentration in schools which will definitely affect academic performance of the students. Most parents withdraw their children from schools of high standard to local schools because; they can no longer afford the bills while some totally withdraw from school.

6. Conclusion

Based on the findings, it was concluded that; economic recession has negative impact on standard of education in Osun State of Nigeria because majority of secondary schools are public schools which depend completely on the small government budgetary allocation which led to irregularity and half payment of salaries of teachers. Economic recession also has negative impact on teaching effectiveness because majority of the teachers seek alternative measures in order to survive the economic hardship and this in a way affects their commitment. Furthermore, economic recession has negative impact on students' academic performance because, some parents, most especially, civil servant could hardly provide for the needs of their children and this has caused some students to drop out of school and took to street hawking in the society.

The findings also showed that, economic recession has highest impact on the standard of education in Osun State of Nigeria. This was seconded by students' academic performance in Physics while economic recession has the least impact on teaching process in Osun State of Nigeria.

6.1 Recommendations
Based on the conclusion of this study, it was recommended that:
1. Government should find another means of generating income apart from crude oil export in order to cushion the effect of economic recession in Nigeria.
2. Government should reduce tax rate and ensure judicious spend during the period of recession.
3. Government should allocate at least 26% of the total budget to education as recommended by UNESCO.
4. The schools should engage in some activities such as having Agricultural farms in order to generate fund to cushion the effect of economic recession.
5. Government should pay teachers salary regularly as at when due.

References

1. Akinbobola, A.O. (2006). *Effects of teaching methods and study habits on students' achievement in senior secondary school physics using a pictorial organizer.* Unpublished Ph.D thesis, University of Uyo, Uyo, Nigeria.
2. Akinbobola, A.O. (2015). Effects of learning styles and instructional strategies on students' achievement in Nigerian senior secondary school physics. *Advances in Physics Theories and Application,* 41, 20-29.
3. Anon (2016). *Unpaid salaries, SEPAP drags government to ICC.* Vanguard news. Retrieved from www.vanguardngr.com on 4/12/16.
4. Abhishek, S. & Evelin, S. (2016). Teacher's irregularity and students' performance: A causative analysis. *Science Insight,* 1, 11-12.
5. John, B. (2002). Sourcing and cost effective use of fund for science and technology education in economic crisis situation. *Journal of Science Teachers Association of Nigeria,* 37(1), 63-67.
6. Kumuyi, W.F. (2010). *Global meltdown: The way out.* A monthly Christian women mirror publications of the deeper Christian life ministries. Lagos: Life Press Ltd. March.
7. Ochu, A.N.O. (2010). *Global economic meltdown and the challenges of functional chemistry education programme in Nigeria: The way out.* 51st annual conference proceedings of science teachers association of Nigeria, pp 299-305.
8. Nook, E.J. (2017). *Impact of economic recession on Nigeria macroeconomic performance.* Retrieved from www.goodtherapy.org.
9. Sobowale, D. (2016). Vanguard book of quotations. September 12, VBQ pp. 46.
10. Tejvan, P. (2012). Negative impact of economic recession. *Journal of Economic Help,* 11(1), 1-8.