

THE EFFECT OF ECONOMIC RECESSION ON THE TEACHING AND LEARNING OF CHEMISTRY IN SENIOR SECONDARY SCHOOLS IN ANAMBRA STATE NIGERIA

V. N. Ejezie, Ph.D

*Department of Chemistry Education,
Federal College of Education (Technical), Umunze,
Anambra State.*

Oluchi C. Uwakwe

*Department of Chemistry Education,
Federal College of Education (Technical), Umunze,
Anambra State.*

And

Ukamaka P. Ifeanyi-Uche

*Department of Home-Economics,
Federal College of Education (Technical), Umunze,
Anambra State.*

Abstract

The study investigated the effect of economic recession on the teaching and learning of chemistry in senior secondary school in Anaocha local Government Area. The study adopted a survey research design. The population of the study comprised of all the Nineteen (19) chemistry teachers and three hundred and eighty-nine (389) SS II chemistry students in sixteen (16) public secondary schools in Anaocha LGA. The study was guided by three (3) research questions and three (3) hypothesis. Questionnaire was used as the instrument for data collection on four- point scale. The data collected were analysed using mean and standard deviation while the null hypothesis were analysed using Z- test at 0.05 significance probability level. The findings of the study showed that respondents agreed that the causes of economic recession are: poor political leadership, Nigeria's over- dependence on petroleum as source of her income, Boko Haram and selfishness of the leaders, among others. They also agreed that economic recession has affected the teaching and learning of chemistry in senior secondary school in Anaocha LGA especially in poor funding of educational sector by the government which result to many other adverse effects. Remedial strategies for this economic recession as suggested

include: Adequate budgetary allocation/funding of educational sector by the government, the government should find possible ways to put to a stop the activities of Boko Haram. Improvisation of instructional materials and proper management of the available resources by all, among others. Based on this findings, implications, recommendations and suggestions for further research were made.

Keywords: Economic recession, Education, Government, Chemistry, School

The economic recession ravaging Nigeria's economy which has caused notable imbalance, has emerged as one of the most universal economic crisis being witnessed in this century. It is no more news that Nigerian's economy is in recession. Besides depleting the country's external reserves, it has led substantially to the crash of the stock market, the erosion of the country's revenue by over 60 percent and the depreciation of the national currency. (G. Bamigboye, A. Ede and G. Adeyemi, 2016). Economy is the relationship between production, trade and the supply of money in a particular country or region. Recession is a general downturn in any economy.

Goshe(2010), reported that, the National Bureau of Economic Research (NBER) defined economic Recession as "a significant decline in economic activity lasting for more than few months, visible through the wholesale-retail sales, industrial production, employment, real income, gross domestic product, etc." Nigeria has been hit by economic recession together with developed and developing countries all over the world. With the globalization of the world's economy, almost all countries of the world were impacted by the economic crisis.

The world today is experiencing an economic crisis or financial crisis. The global economic crisis illustrates deficiency in economic and financial governance in the developed countries of the world (United Nations Assembly, 2008). The financial and market instability that resulted from this poor financial management has caused several recessions in the world economy. In Education sector, due to the present economic recession, many educational institutions in Nigeria are not adequately funded, equipped and staffed by the federal and the various governments. The educational system is almost completely dependent on government budgetary allocations 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 the students and families. Teacher's salaries represent two-thirds of public expenditure on education, which explains why in some countries the first sign of a slowdown had a direct impact on pay. The significant salary reductions due to economic recession can have a negative impact on a country's attempt to attract the best individuals to the teaching profession. As a consequence, countries will find it more difficult to maintain the quality of learning in the future.

Chemistry is a branch of science that studies the composition, properties and interaction of matter. Chemistry plays an important role in meeting human needs for food, healthcare products and other materials aimed at improving the quality of life. Hornby (2004) defined chemistry as the scientific study of the structure of substances, how they react when combined or in contact with one another, and how they behave under different conditions.

The present economic recession have numerous effects on the teaching and learning of chemistry ranging from exorbitant cost of necessary materials, unavailability of materials, brain drain, insufficient textbooks, other textual materials, and poor environment. That is, the number of students venturing into science has been very low due to economic crisis/recession and this crisis also lead to poor student performance etc. This is because poor performance in chemistry by students is attributed to the problem of non-availability of necessary facilities for practical work which has affected the activities (Fatokun, 2012). It is on this point that the researcher wants to find out the effects of this economic recession on the teaching and learning of chemistry in Senior Secondary School.

Statement of the Problem

The prominent among the problems militating against the functional chemistry education in Nigeria are lack of funds, lack of chemistry textbooks, absence of equipped chemistry laboratories and inadequate instructional materials (Ochu, 2010). A functional education especially in the area of science and chemistry in particular, is the most fundamental requirement for economic and technological growth of any nation. Economic recession has resulted to problems such as exorbitant cost of necessary materials, inadequate chemicals for practical, unavailability of materials, poor enrolment etc. This makes the stated and desired objectives in teaching and learning of chemistry unachievable. In other words, there is great need to study and analyse, finding out from the students and teachers in senior secondary schools how far this economic recession has affected the teaching and learning of chemistry in Anaocha Local Government Area of Anambra State.

Purpose of the Study

The main purpose of this study is to determine the effects of economic recession on the teaching and learning of chemistry in Senior Secondary School.

Hence this study focuses on the following;

1. The causes of economic recession presently in Nigeria.
2. The effect of economic recession on the teaching and learning of chemistry in Anaocha local Government Area.
3. The strategies for the eradication of the challenges of economic recession on the teaching and learning of chemistry.

Significance of the Study

The findings of this study will help the school administrators reflect upon various factors that help students achieve their academic goals in chemistry.

The result of the research work will enable the teachers to identify the areas of strength and weakness in academic performance in chemistry. It will also help them to see the need for improvisation and improve on their teaching methods used in teaching chemistry to the Secondary School Students.

The findings will make the students to be able to appreciate the importance of chemistry and put up a positive attitude which will help them to understand the universe.

The findings of this research work will enable the government to see the need to help in improving the education sectors by allocating funds to schools, provision of necessary materials/equipment for effective teaching and learning.

Furthermore, it is hoped that the findings so obtained from this empirical process will provide relevant data for future reference and citations.

Scope of the Study

The study focused on finding out the effects of economic recession on teaching and learning of chemistry in senior secondary school. The area of the investigation is limited to teachers and students in senior secondary school in Anaocha Local Government Area.

Research Questions

1. What are the causes of economic recession presently in Nigeria?
2. To what extent has the economic recession affected the teaching and learning of chemistry in senior secondary schools in Anaocha Local Government Area?
3. What are the strategies for the eradication of the challenges of economic recession on the teaching and learning of chemistry?

Research hypothesis

The study is designed to test the following null hypothesis:

Ho₁: There is no significant difference between the mean responses of chemistry teachers and students on the causes of economic recession presently in Nigeria.

Ho₂: There is no significant difference between the mean responses of the chemistry teachers and students on the extent to which economic recession has affected the teaching and learning of chemistry in Anaocha Local Government Area.

Ho₃: There is no significant difference between the mean responses of the chemistry teachers and students on the strategies for the eradication of the challenges of economic recession on the teaching and learning of chemistry.

Methodology

A survey research design was chosen in this work. This study was carried out in Anaocha Local Government Area of Anambra state. It covers sixteen (16) public secondary school. The population of the study comprises of all the chemistry teachers and SS2 chemistry students in the sixteen (16) public secondary schools in Anaocha Local Government Area. The total population of chemistry teachers and SS2 chemistry students encountered in this study was four hundred and eight (408), nineteen (19) and three hundred and eighty-nine (389) respectively. A total population of eight (8) secondary schools were randomly sampled using simple random sampling by balloting. Eleven (11) teachers and one hundred and ninety-six (196) students were sampled. A total of two hundred and seven (207). All the teachers and students in the sampled secondary schools were used, since the population was small.

The instrument used in this work for data collection was a questionnaire. The questionnaire used was a structural response questionnaire which consist of sections A and B. Section A contains the personal data of the respondents while the section B consists of questions formulated under each of the three research question. The questionnaire was designed in a way that responses could be elicited from the respondents and weighed on a four (4) point scale of strongly Agree (AS)=4, Agree (A)=3, Disagree (D)=2, and strongly Disagree(SD)=1. The researcher distributed a total of two hundred and seven copies of questionnaire which were completed and returned. This gave a 100% return rate. Data collected were analysed using mean, standard deviation and z-test statistics at 0.05 level of significance.

Results

HO₁: There is no significant difference between the mean responses of chemistry teachers and students on the causes of economic recession presently in Nigeria. Items 1-13 in the questionnaire (research question 1) tested the hypothesis.

Table 1: Z-test of Difference between Two Means of Teachers and Students on the Causes of Economic Recession Presently in Nigeria

GROUP	N	X	S.D	DF	SIG LEVEL	Z-CAL	Z-CRIT	DECISION
TEACHERS	11	3.56	0.62	205	0.05	0.18	1.96	NS
STUDENTS	196	3.41	0.75					

NS=Not Significant at 0.05 Probability level.

The table above shows that the calculated values of t(0.18) is less than the critical value of t at 0.05 level of significance and 205 degree of freedom (t-critical= 1.96).

Since the calculated value is less than the critical value, we accept the null hypothesis that there is no significant difference between the responses of the teachers and students on the causes of economic recession presently in Nigeria.

HO₂: There is no significant difference between the mean responses of chemistry teachers and students on the extent the economic recession has affected the teaching and learning of chemistry in senior secondary schools in Anaocha LGA.

Items 14-25 in the questionnaire (research question 2) tested the hypothesis.

Table 2: Z-test of Difference between Two Means of Chemistry Teachers and Students on the Effects of Economic Recession

GROUP	N	X	S.D	DF	SIG LEVEL	Z-CAL	Z-CRIT	DECISION
TEACHERS	11	3.62	0.48	205	0.05	0.78	1.96	NS
STUDENTS	196	3.35	0.81					

NS= Not Significant at 0.05 Probability level.

The table above shows that the calculated values of t(0.78) is less than the critical value of t at 0.05 level of significance and 205 degree of freedom (t-critical= 1.96).

Since the calculated value is less than the critical value, we accept the null hypothesis that there is no significant difference between the responses of the teachers and students on the effect of economic recession on the teaching and learning of chemistry in Anaocha LGA.

HO₃: There is no significant difference between the mean responses of chemistry teachers and students on the Strategies for the eradication of the challenges of economic recession on the teaching and learning of chemistry.

Items 26-41 in the questionnaire (research question 3) tested the hypothesis.

Table 3: Z-test of Difference between Two Means of Teachers and Students on the Strategies for Eradication of the Challenges of Economic Recession

GROUP	N	X	S.D	DF	SIG LEVEL	Z-CAL	Z-CRIT	DECISION
TEACHERS	11	3.56	0.62	205	0.05	0.44	1.96	NS
STUDENTS	196	3.48	0.74					

NS= Not Significant at 0.05 Probability level.

The table above shows that the calculated values of t(0.44) is less than the critical value of t at 0.05 level of significance and 205 degree of freedom (t-critical= 1.96)

Since the calculated value is less than the critical value, we accept the null hypothesis that there is no significant difference between the responses of the teachers and students on the strategies for the eradication of the challenges of economic

recession on the teaching and learning of chemistry in Anaocha Local Government Area.

Discussions

Research question 1, which sought to find out the causes of economic recession presently in Nigeria, it was discovered that Nigeria is suffering from economic recession due to many reasons. These reasons include: Nigeria's over-dependence on petroleum as her source of income. In line with this finding, Igberaese (2013) noted that Nigeria is heavily dependent on the oil sector for the majority of government spending, infrastructure and most economic development activities. With the increasing volatility of oil prices, the discovery of oil in other parts of the world and the instability of the global economy, oil imports from Nigeria to major economies such as the United States has steadily decreased. This has adversely affected our economy. It was also discovered that the money spent on political leaders is outrageous. Again, selfishness and looting of public funds by the leaders and inability of government to manage both human and natural resources were also identified as problems. In agreement to this, Ogbeidi (2012) reported that it is a paradox that Nigeria, the world's eighth largest exporter of crude oil, a country endowed with many resources, still has more than 70 percent of its population living below the poverty line as a result of corruption and economic mismanagement. The researchers also found out that the causes also include: poor economic plan/policies by the government and poor implementation of their plans, poor quality of the political leadership. This supported Ojo (2009) who opined that Nigerian political leadership has not been able to put in place pragmatic, well-mannered and well-funded social policies and actions. According to him, what has caused economic recession to take such alarming dimension is poor quality of the political leadership which the country has since independence. It was also found out that tribalism, religious discrimination, activities of Boko Haram/terrorism has contributed immensely to the nation's economic crisis as they vandalise people's properties, leaving the country in insecurity. This is in agreement with Adebayo (2013) who cried that Boko Haram/terrorism is a threat to the economic, political and social security of a nation and a major factor associated with underdevelopment.

Research question 2, which sought to find out the extent to which economic recession has affected the teaching and learning of chemistry in senior secondary school, it was discovered that chemistry education has suffered setback as a result of the economic recession. This showed in poor funding of schools leading to insufficient laboratory equipment, facilities, materials, reduction in recruitment of qualified teachers and other personnel needed for effective education delivery. This finding is in agreement with Adikwu (2008) who emphasized that lack of funds stands out as the number one problem in the teaching and learning of core subjects.

This lack of funds has affected the payment of allowances to teachers, purchase of books, staff training through workshops, conferences and seminars. It was also discovered that problem of unemployment demoralizes students to choose career in chemistry. This is in line with the finding of Nzelum and Okafor (2010) that the rate of unemployment in Nigeria is embarrassing, the pace of scientific and technological development is slowed down, the improvement and solution on environmental problems for the use and convenience of man becomes elusive. The researchers found out that there is lack of concentration and interest in learning chemistry by some students, lack of commitments in teachers due to delay in payment of their salaries and remuneration. This finding is in agreement with Nwananobi and Igboabuchi (2010), that teachers are not motivated to be effective in their task of effective educational delivery. They express that many teachers due to lack of motivation and prompt payment of salaries and other allowances cannot meet their daily needs due to high cost of living brought about by economic crisis. These conditions bring about divided attention and poor concentration on the teaching job thereby reducing their output. Some even become unnecessarily harsh to students and would not take time to give proper explanation on any concept taught. As a result, students loose interest in class activities which then affects their performance in chemistry. This problem of lack of motivation leads to brain drain; as some experienced and qualified teachers and even some good students leave the teaching profession and school in search of greener pastures. This is in line with the observation made by Fagbemi (2012) that brain drain brings about job dissatisfaction which forces many to migrate abroad in search of better opportunities. It was also discovered that there is increase in dropouts due to non-payment of school fees and other requirements, stress and hardship leads to drug and sex abuse among students. These findings supported that of Lekwa and Anyaogu (2016) in their study on economic recession, hawking and students drop out of school. They stated that “creating more illiterates through school drop outs will likely accelerates the emergence of more criminals and social misfits thereby slowing down social and economic development” and this is as a result of economic recession.

Research question 3, which sought out the strategies for eradication of the challenges of economic recession on teaching and learning of chemistry, it was discovered that some of the strategies include: teacher’s welfare scheme in form of salaries and wages need to be restructured in the positive direction, adequate budgetary allocation/funding of education sector by the government, adequate supply of current chemistry textbooks by the government and teachers should be sponsored for in-service training to up-date themselves. This finding is in agreement with Bamigboye, and Adeyemi (2016) who advised that government should provide the necessary funds to reduce the effects of the crisis on educational development. According to them, adequately funded educational system, if genuinely promoted and

honestly managed is capable of creating mass-fully developed human talents whose creative thinking would get any nation out of the economic crisis and permanently shut the door to its future occurrence. Bamigboye, and Adeyemi further noted that the government should ensure that teachers' salaries are been regularly paid and up-to-date, ensure teachers training and retraining and ensure adequate provision of equipment and infrastructures. The respondents also suggested that teachers should improvise materials for teaching of practical chemistry. This finding supported Dogara (2012) who opined that science teachers should resort to improvisation in the production of some science equipment to reduce the impact of global economic crisis on teaching and learning of science. Some of the findings also suggested that the government should establish farms throughout the federation so as to reduce the nation's dependence on petroleum and also adapt a systematic approach to the planning, development of our human and natural resources. This finding is in agreement with the finding of Neziyanya (2000) in his study on the impact of global hardship on Nigerian students which suggested the development and management of our human and natural resources for the purpose of averting these serious economic problems in future. It was also suggested that the government should find possible ways to put to a stop the activities of Boko Haram. To address the threat to national security and combat the increasing waves of crime, the federal government of Nigeria in the 2013 budget made a huge allocation to security, and the national assembly passed the Anti-Terrorism Act in 2011 (Ewetan, 2013).

Conclusion

The findings of this study revealed that many factors led to economic recession ranging from: over-dependence of the nation on petroleum resources; corruption of and mismanagement of foreign goods and natural resources; debt from international donor agencies. Nigeria is suffering from economic recession due to poor quality leadership, selfishness and looting of public funds by leaders. Thus, without mincing words the phenomenon has ravaged the country and destroyed most of what is held as cherished national values. History has shown that no nation of the world grew and enjoyed steady development in virtually all spheres of its national life without experiencing good and selfless political leadership.

It was also revealed from the findings that economic recession has hindered a functional chemistry education in Nigeria and Anaocha Local Government Area in particular. Notably among its impacts are lack of equipment and materials due to poor funding, lack of students' interest and concentration, lack of motivation and commitment of teachers to their job, reduction in recruitment of teachers and other personnel needed for effective education curriculum delivery, among others. This problem of economic recession can be solved by government and teachers diversifying their revenue base and also be judicious in spending their earnings and allocations. Teachers should improvise when the original materials are not available

for teaching practical chemistry. Nigerians should cling to love and stop the issue of religious discrimination and tribalism that bring in activities of Boko Haram.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. There is need for diversification of Nigeria revenue sources through improvement in solid minerals, agriculture and tourism sectors to boost the economy.
2. Government should provide the necessary funds to reduce the effects of the crisis on educational development.
3. Concerted efforts and good attempts should be made by education stake holders to maximize their allocated resources by the government.
4. There should be reduction in the money spent on the political leaders.
5. The chemistry teachers should engage in improvisation of instructional materials needed for teaching and learning of chemistry.
6. Government should ensure that teachers' salaries are adequately paid.
7. Scholarship opportunities should be granted to students especially the less privileged.

References

- Adebayo, A.A. (2013). The nexus of corruption and poverty in the quest for sustainable development in Nigeria, *Journal of Sustainable Development in Africa*, 15(7): 225-235.
- Adikwu, M.U. (2008). *Curriculum development in science technology and mathematics (STM) education*. Keynote address presented at the 49th annual conference of Science Teachers Association of Nigeria, Minna, August 2008.
- Ahmadu, H.O., & Dogara M.M. (2012). *The impact of global economic crisis on the teaching and learning of science, in N.A (Ed)*, proceedings of the 51st Annual conference of STAN. 45 HEBN Publishers PLC.
- Bamigboye, G., Ede, A., & Adeyemi, G. (2016). Impact of economic crisis on education.
- Brainmoh. (2010). *Journal of Science Technology*. 43 (3), 313-314.
- Ewetan O. O. (2013). *Insecurity and Socio-economic development: A lecture delivered at St. Timothy Anglican Church, Sango-ota, Ogun State*.

- Fagbemi, A.O. (2012). *Introduction to Public Services School of Management Services*. National Open University of Nigeria, Victoria Island, Lagos.
- Fatokun, K.V.F. (2012). Attitude as a correlate of achievement in chemistry among secondary school students in Nasarawa State. Benue state University. *Journal of Education*, 12, 57-62.
- Goshe. (2010). Research methods in business and management. *International Journal of Business Education*, 2 (3&4) 55-60.
- Hornby, A.S. (2004). *Oxford advanced learners dictionary* (8th edition). Special international students' education oxford University Press, New York: Oxford press.
- Igbeasere, T. (2013). The effect of Oil dependency on Nigeria's economic growth, *Journal of International Institute of Social Science*, 3(10).
- Lekwa, E.A., & Anyaogu B.E. (2016). Economic recession, hawking and students drop-out of school in the five Eastern States of Nigeria.
- Momo, S. (2010). Turning waste to wealth. *Nigeria business day*, pp 35.
- Nezianya. (2000). The impact of economic hardship on Nigeria's. Unpublished project work, NnamdiAzikiwe University.
- Nwakanobi, F.E., & Igboabuchi, N.A. (2010). Equipping biology laboratories as a strategy for salvaging dwindling economy.
- Nzelum, V.N., & Okpala, C.U. (2010). *Impact of Global Economic Meltdown on Science Education*. The way forward 51st Annual conference proceedings of Science Teachers Association of Nigeria, 135-139.
- 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, 299-305.
- Ogbeidi, M.M. (2012). *Political leadership and corruption in Nigeria since 1960*. A socio-economic analysis.
- Ojo, S.A. (2009). *The global economic meltdown and its effect on the well-being of Nigerians and Nigeria Development*. A speech delivered at the district conference of RIDistrict 9130 at plaza De Aruna Hotel, Oyo, Nigeria.