

# **INNOVATIVE APPROACHES TO OVERCOMING POLITICAL PROBLEMS ASSOCIATED WITH TEACHING AND LEARNING OF SCIENCE IN SECONDARY SCHOOLS IN EBONYI STATE**

**BY**

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## **Abstract**

*This study innovative approaches to overcoming political problems associated with teaching and learning of science in secondary schools in Ebonyi state has three research questions and three research hypotheses. The study is a survey research design which made use of twenty-five items questionnaire. The instrument was subjected to test, retest and face validation for it's reliability and validation test respectively. Data collected from 1,516 (science teachers and students) randomly selected respondents were analyzed using weighed mean, standard deviation and t-test statistics. Result of the analyses showed that, poor funding science education, imprudent and careless management of science education fund, embezzlement of fund meant for science education and supply or buying of inferior teaching and learning science. Other problems include, poor maintance culture of science teaching and learning materials on the part of teachers and students, improper or inadequate supervision of science education teaching and learning materials and activities by the education administrators, partiality in science teacher recruitment, posting. On the hypotheses the study deduced that, there is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science, also no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science and lastly there is no significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state. The study recommended that, government should increase science education funding in the state among other recommendations. Proper and adequate supervision is needed in science education in order to overcome the issue of poor, imprudent and careless management of science education funding in the state.*

## **Background of the Study**

The popular saying that man is a political animal comes to play in this study. Having in mind that all human activities have an element of politics in it with teaching and learning of science not an exception. Kadiri (2017) stated that, Politics is of great significance in the life of every society and that every single legislation organizing people's life in any field- political, social, and educational or other-results from political activity, and their current as well as future life is totally dependent on the political decisions made by political rulers. This is to say that in every activity of man, any society group, institutions and its alike there exist some level of politics

taking place in, outside and around it. This politics existing in each group or individual could be in favorable or against any individual or group within or outside the system in question.

The concept of 'problem' should be understood as the difficulty to achieve an aim, while Political problem both as a discipline and as a government idea and action. It goes without saying that Political problems are not confined to those which will be treated here; it may even happen that some people do not regard them as problems but rather as a solution to the difficulties that the science education of our time is going through. After all, the nation of Politics, and consequently that of Political problems related to the conception that each individual has of life and of the world. Fernández-Soria (2012) said that; in a recent work that good politics has as its main aim to achieve transforming projects for the benefit of the common good, oriented to consolidate a desirable society and reality rooted in democracy. One can vividly understand that no matter how good and favorable a government is to an individual or group there is always unfavorable programs or actions.

Science is the study of the structure and behavior of physical and nature of world through careful investigations, observation and experiment as to establish a verifiable theories governing the universe. Igwe (2002) defined science as knowledge attained through the study of the operation of general laws on nature especially that knowledge which is obtained, tested, approved and accepted through a scientific method. Science methods or process include; observation, measurement, hypothesis formulations, prediction, drawing of inference, experimentation, classification, communication, interpretation of data, controlling of variables, evaluation of outcome, making and using models, collection of data, manipulating techniques, etc.

From the above definition it is obvious that the act and study of science is a very serious and very important one that shouldn't be joked with or neglected. This means that if there is failure at any point of this science and its teaching, the whole structure fails. Hence, the implementation, selection, preparation and supervision of education which are all resting on the hands of government and individuals which can play politics of favour or disfavour to this study science should be looked into. To many the most common course of problem of science teaching and learning are political as it is the duty of Government to provide most of the things for the study of science such as; qualified teachers, good laboratory for practical, consumables and non-consumable materials in laboratories.

Oladebinu et al (2018) stated that, education system in Nigeria has been in crisis for many years largely due to the fact that the sector is poorly funded and that it has led to shortage supply of learning materials and human resources being experienced in the system. In addition that there are inadequate qualified teachers, high turnover rate of teachers, shortage of classroom, and poor remuneration of teachers and a host of other problems abound in the education sector. They went further to explain that political problems in Nigeria impacted on the education system and had played a major role in the decline of the quality of Education offered in the country.

The above situation motivated this study titled innovative approaches to overcoming political problems associated with teaching and learning of science in secondary schools in Ebonyi State. It is believed that this study will identify all the root causes of the above political problems in the teaching and learning of sciences and also proffer solutions to reduce or eliminate them.

### **Statement of the Problem**

It be unfair for any lover of science and development to assume that all is well in the teaching and learning of science in Nigeria. We all know that most of the problems in education sector are political based or motivated. From the submissions above it will not be out of point to state that teaching and learning of science in Nigeria has been bedeviled with many political motivated

problems. A closer observation of the problem indicate that it is multidimensional which ranges from financial to administration.

1. Financial aspect of the problem include; poor funding of schools, lack of teaching and learning for schools, Lack of science teachers, poor incentives for serving science teachers and poor salary and allowances for both teachers and school administrators.
2. Administrative aspect of the problem; Poor supervision of education activities, Interruption academic calendar by government, unfair management of teachers posting, Use of inferior material in delivering school science projects and wrong or poor evaluation methods.

It is based on above that this study wish to unearth possible ways to overcome the political problems in teaching and learning of science in secondary schools in Ebonyi state Nigeria through this study titled “innovative approaches to overcoming political problems associated with teaching and learning of science in secondary schools in Ebonyi State”.

### **Objective of the Study**

The main objective of this study is to develop mechanism to overcoming political problems in secondary school in Ebonyi State. Specifically the objectives are to find ;

1. the cause of political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state.
2. the cause of political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.
3. proffer solutions to the cause of political financial and administrative problems to teaching and learning of science in secondary school in Ebonyi state.

### **Research Questions.**

This study seek to answer the following research questions;

1. What are the cause of political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state?
2. What are the cause of political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state?
3. How will the political financial and administrative problems associated with the teaching and learning of science in secondary school be resolved?

### **Research Hypotheses**

The following null hypotheses will be tested using z-test statistics at 0.05 alpha level;

1. Ho<sub>1</sub> There is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state.
2. Ho<sub>2</sub> There is no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.
3. Ho<sub>3</sub> There is no significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

### **Research Methodology**

The study made use of descriptive survey research design which according to Nworgu (2015), is the type of design which allow a group of people or items to be studied by collecting and analyzing data from only a few people or items considered to be representative of the entire population. This design was used because it involves the assessment of science teachers and students in Ebonyi State This study was carried out in Ebonyi State of Nigeria. Ebonyi State is in Eastern part of Nigeria and is made up of three Education Zones. The population of this study comprised all 4,146 science teachers and students of in the 226 public or government owned senior secondary schools in Ebonyi State (ESSEB, 2023). A simple random sampling techniques was used to sample out 24 secondary school science teachers and 240 science students for the study. Instrument for data collection of this study was a structured questionnaire developed by the researchers. It was called 'Innovative Approaches to Overcoming Political Problems Associated with Teaching and Learning of Science in Secondary Schools (IAOPPS). It was in form of four point scale questionnaire designed to elicit information on the three research questions. Each item of the questionnaire has a four point scale rating thus; Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The researcher will be scored using weighted mean. Thus; Agree (SA) is scored 4 points, Agree (A) is scored 3 points, Disagree (D) is scored 2 points and Strongly Disagree (SD) is scored 1 point. The instrument received face validation from two experts in Education Foundation and two from Science Education Department. The reliability of the instrument was ascertained using test - retest form of reliability. The researchers visited the sample schools with the instrument and with the help of research assistants from each schools, the researchers administered the instrument on the sample science teachers and students. The research questions was answered using weighed mean and standard deviation. That is the weighed mean of responses of the respondents to each item in the questionnaire was used to determine the answer to each item of questionnaire. In order to interpret the result of each item of the research question, a weighed mean value of 2.50 was calculated as a limiting value. Thus; any weighed mean value of 2.50 and above was regarded as positive and accepted while a weighed mean of less than 2.50 was regarded as negative and rejected. The null hypotheses was tested using t-test statistics under 0.05 alpha level of significance.

## Presentation and Analysis of Data

- Research Question 1** What are the cause of political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state?

**Table 1**

S/N	Items	X	SD	Decision
1	Science education is poorly funded in secondary schools in Ebonyi State.	3.26	0.75	Accepted
2	Imprudent and careless management of fund meant for science education	3.11	0.92	Accepted
3	Fund meant for science education are always embezzled by political office holders.	2.73	1.30	Accepted

4	Improper or wrong channeling of science education fund	2.96	1.47	Accepted
5	Over dependent on government for science education funding	2.39	0.91	Rejected
6	Inadequate accountability of the fund meant or released for science education project.	3.18	0.93	Accepted
7	Supply or buying of inferior teaching and learning science materials.	3.02	0.91	Accepted
8	Poor or total lack of remuneration to science education teachers and students.	3.15	1.12	Accepted
9	Delay or non-release of fund allocated for science education work or projects.	3.21	0.88	Accepted
<b>Mean Response</b>		<b>3.00</b>	<b>1.01</b>	<b>Accepted</b>

Table 1 above showed that only one out of the nine items of the questionnaire was rejected while eight was accepted. That is to say that one item number 5 was rejected while items 1,2,3,4,6,7,8 and 9 were all accepted as factors contributing to financial problems associated with the teaching and learning of science in secondary school in Ebonyi state.

**Research Question 2** What are the cause of political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state?

**Table 2**

S/N	Items	X	SD	Decision
1	There is always poor maintenance culture of science teaching and learning materials	2.87	0.94	Accepted
2	Improper or inadequate supervision of science education teaching and learning materials and activities.	2.85	1.13	Accepted
3	Partiality in science teacher recruitment, posting, seminars and workshops.	2.60	0.79	Accepted
4	Lack or improper implementation of government policy on science education	2.96	1.12	Accepted
5	Rewards and punishment are wrongly or inadequately applied to the deserving science teachers and students.	2.36	0.84	Rejected
6	Employment of quacks and unqualified science education teachers.	2.12	0.91	Rejected
7	Multiple and confusing administrative mechanism in science	2.19	0.87	Rejected

8	education.	2.91	0.95	Accepted
9	Delay in taking policy action on science education programs	2.97	1.05	Accepted
	Non-inculcating or involvement or inclusion of parents and students in decision making in science education.	2.65	0.95	Accepted
<b>Mean Response</b>				

Table 2 above showed that three items out of the nine items of the questionnaire was rejected while six items were accepted. That is items number 5,6 and 7 were rejected while items 1,2,3,4,8 and 9 were all accepted as factors contributing to administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state

**Research Question 3** How will the political financial and administrative problems associated with the teaching and learning of science in secondary school be resolved?

**Table 3**

S/N	Items	X	SD	Decision
1	Government should increase science education funding	3.10	0.89	Accepted
2	People of proven integrity should be used to form committee to manage science education fund	3.05	0.80	Accepted
3	Parent Teachers Association (PTA) should be inculcated in science e education administration and decision making.	2.92	1.28	Accepted
4	There should be adequate reward and punishment for good deeds and indiscipline respectively in science education activities.	2.92	0.95	Accepted
5	Administrative policies and channels information should always be made available for all consigned.	2.88	1.03	Accepted
6	Science teachers should be involved in sourcing local material for teaching learning science.	3.16	0.82	Accepted
7	Students' reactions and performance should be used for posting and placement of science teachers.	2.38	1.16	Rejected
<b>Mean Response</b>				

Table 3 above showed that only one out of the seven items of the questionnaire was rejected while other six items were accepted. That is item number 7 were rejected while items 1,2,3,4,5 and 6 were all accepted as way to resolving the financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

### Test of Research Hypotheses

The null hypotheses of this study was analyzed in the table 4 under 0.05 alpha level of significance;

### Research Hypothesis 1

There is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state.

**Table 4: Test of Hypothesis 1**

Item No	Variabl es	Numb er	Mea n	S D	D f	L S	t- Cal .	t- Cri t.	Decisio n
Mean	Teachers	59	3.07	0.63					
Respons e	Students	1457	2.99	1.02	5	151 0.05	0.598	1.960	Accepted

The t-calculated on the mean response of respondents is 0.598 which is far less than the t-critical of 1.960. Based on the above this hypothesis that there is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state is upheld.

### Research Hypothesis 2

There is no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

**Table 5: Test of Hypothesis 2**

Item No	Variabl es	Numb er	Mea n	S D	D f	L S	t- Cal .	t- Cri t.	Decisio n
Mean	Teachers	59	2.77	0.50					
Respons e	Students	1457	2.64	0.97	5	151 0.05	1.024	1.960	Accepted

The t-calculated on the mean response of respondents is 1.024 which is less than the t-critical of 1.960. Based on the above this hypothesis that there is no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state is upheld.

### Research Hypothesis 3

There is no significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

**Table 5: Test of Hypothesis 3**

Item No	Variabl es	Numb er	Mea n	S D	D f	L S	t- Cal .	t- Cri t.	Decisio n
Mean	Teachers	59	2.89	0.51					

Response	Students	1457	3.07	1.01	1515	0.05	1.362	1.960	Accepted
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The t-calculated on the mean response of respondents is 1.362 which is less than the t-critical of 1.960. Based on the above this hypothesis that there is no significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state is upheld.

## Discussion of Results

This study main aim is to innovative approaches to overcoming political problems associated with teaching and learning of science in secondary schools in ebonyi state. The data collected were analyzed results of the analyses were summarized as below;

Analysis of the research question 1 show that; Science education is poorly funded in secondary schools in Ebonyi State, imprudent and careless management of fund meant for science education, embezzlement of fund meant for science education by political office holders, improper or wrong channeling of science education fund, inadequate accountability of the fund released for science education project, supply or buying of inferior teaching and learning science materials and delay or non-release of fund allocated for science education work or projects. The study fail to establish the over dependent of secondary schools on government for science education funding.

The research question 2 have it that there is always poor maintance culture of science teaching and learning materials on the part of teachers and students, improper or inadequate supervision of science education teaching and learning materials and activities by the education administrators, partiality in science teacher recruitment, posting, seminars and workshops, lack or improper implementation of government policy on science education, delay in taking policy action on science education programs and non-inculcating or involvement or inclusion of parents and students in decision making in science education. It also at the same time fail to support that, rewards and punishment are wrongly or inadequately applied to the deserving science teachers and students, employment of quacks and unqualified science education teachers and Multiple and confusing administrative mechanism in science education.

Research question 3 made some suggestions on ways to resolve the challenges of this study, they include; Government to increase science education funding, appointing people of proven integrity form committee that be managing science education fund, Parent Teachers Association (PTA) to be inculcated in science e education administration and decision making, having adequate reward and punishment for good deeds and indiscipline respectively in science education activities, creating well defined channels for information dissemination for all consigned and that science teachers should be involved in sourcing local material for teaching learning science. The study disagree with the idea that, Students' reactions and performance should be used for posting and placement of science teachers.

On the hypotheses the study deduced that, there is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state, also no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state and lastly there is no



significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

### **Educational Implications**

The following educational implication can be deduced from the study;

- 1 There is poor, imprudent and careless management of science education fund in secondary schools in Ebonyi State, this calls for government and education administrators to sit-up to their in the area supervision, monitoring of how fund are utilize to ensure prudence in the science education fund management..
2. The study also saw that there is always issue of negligence of science education equipment. The implication of this negligence is that science equipment that cost much money are allowed to spoil or in most times damaged by some individuals. To solve this, there should be a well build place in very secondary school in Ebonyi State where science equipment should be stored and protected through mounting serious security on the store.
3. Teachers should do more in inculcating scientific culture in their students. This will reduce some of excesses of science education students that always bring about damaging of scientific equipment.
4. Study observed that teaching and study of science in secondary schools shouldn't be all comers affair. Those who will teach or study science in secondary school should always be those who have passion for it. This will create seriousness in teaching and learning of science in the state.
5. This study encourages better remunerations for both teachers and students involved in teaching and learning sciences in secondary schools of the state. This will be done through sponsoring teachers and students for workshops, seminars and conferences and their entitlements promptly paid them.
6. Increase funding of science education at all levels. As this study discovered that science education in the state is poorly funded. It is always treated like other subjects that have no practical.

### **Conclusion**

This was carried out in order to determine innovative approaches to overcoming political problems associated with teaching and learning of science in secondary schools in Ebonyi state. This employed weighed mean, standard deviation and t-test statistics in analyzing the data collected from students and teachers of secondary schools in the state. The analyses revealed among other things that; Science education is poorly funded in secondary schools in Ebonyi State, imprudent and careless management of fund meant for science education, embezzlement of fund meant for science education by political office holders, improper or wrong channeling of science education fund, inadequate accountability of the fund released for science education project, supply or buying of inferior teaching and learning science materials and delay or non-release of fund allocated for science education work or projects. It also identifies poor maintenance culture of science teaching and learning materials on the part of teachers and students, improper or inadequate supervision of science education teaching and learning materials and activities by the education administrators, partiality in science teacher recruitment, posting, seminars and workshops, lack or improper implementation of government policy on science education, delay in taking policy action on science education programs and non-inculcating or involvement or inclusion of parents and students in decision making in science education. On the hypotheses the

study have it that; there is no significant difference on the opinions of students and teachers on the political financial problems associated with the teaching and learning of science in secondary school in Ebonyi state, also no significant difference on the opinions of students and teachers on the political administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state and lastly there is no significant difference on the opinions of students and teachers on the political financial and administrative problems associated with the teaching and learning of science in secondary school in Ebonyi state.

## **Recommendations**

Based on the results of this study the researchers make the following recommendations:

1. Government should increase science education funding in the state.
2. Proper and adequate supervision is needed in science education in order to overcome the issue of poor, imprudent and careless management of science education funding in the state.
3. Government and education administrator should endeavour to provide enough teaching aid for the teaching and learning of science education.
4. Teachers and students involved in teaching and learning of science should encouraged financially and materially by education administrators.
5. Science teachers and students should made to attend regular workshops, seminars and conferences to update themselves to the recent trends in teaching of sciences.
6. Government and educational administrators should to always put academic research work to use especially those involving teaching and learning of sciences.

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