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**SCIENCE EDUCATION AS A FOUNDATION FOR POLITICAL STABILITY AND  
GROWTH IN NIGERIA**

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**Abstract**

*This paper focused on science education as a foundation for political stability and growth in Nigeria. Concept of science, education and science education; importance of science education, political stability how science education contribute to growth and development of Nigerian, and relationships of science education to political stability and recommended science education will be foundation for political stability and growth. The world is powerful and stable because of its scientific advancement. Scientific achievements have led to longer healthier and better lives. Science education prepares students to socially fit into the society they find themselves. The importance of science education to society is to produce literate persons (scientist) such as Chemist, Physicist and Biologist who are employed by state (politics) to research and find the sure ways of solving societal problems and later pass the findings to technologists. Engineer etc who put suitable forms to correct the situations. Like planning, materials to control population growth, drug control or cure diseases. The political stability is the durability of current government regime, which is determined based on the amount of violence and terrorism expression in the nation and by the citizens of the state. A stable society is one that is satisfied with the ruling party and their system of operation. The paper look at relationship of science education to political stability and growth in Nigeria looks at how Nigeria political economy and institutions determine the rate of growth and development which is based on technical issues like on the rate of stable, how a country mobilizes people, resources directed towards economic growth and development. The improvement of the lives of the people and how the educated create room for stability instead of instability based on the aforementioned points, Some recommendations of how science education provides a foundation for political stability and growth in Nigeria. The government and private sectors should be committed to the development of science education, provision on necessary science equipment in research institution, there should be training and the retraining of science educators to achieve the desired goals, encourage supportive relationship among science teachers and students. Raise the quality of science education within secondary and universities through conference, workshops seminar and training the trainee and award of scholarship.*

### **Background of Study**

Before I end up the background of this topic, comments must be made in science, education, and science education, branches of science education and its importance.

### **Concepts of Science, Education and Science Education**

Science is gotten from a Latin word *scientia* meaning what is to know, what is a fact, truth or certain. Science has so many facets. Science is both a body of knowledge and process. Science is a way of discovery what's in the universe and how those things work today, how they worked in the past, and how they are likely to work in future.

Mbajorgu (2003), states that science is an act of doing and more concerned with various investigation processes and activities with regard to developing, acquiring, evaluating skill capacity and attitude about natural factors of the environment. It means that science is a way of knowing facts, theories among others. Today science can be expressed in term of its method and process. i.e. what scientist do, produce, knowledge acquired in the form of facts, concepts, laws and theories. But Ogunniyi (1986) state that science is an attempt by human beings to organize their experience about nature into meaningful system of explanation of science Otuka (1993) defines science as man's attempt to understand his environment. In accordance with advance learner's dictionary, 6<sup>th</sup> edition science is the knowledge about structure and behaviours of the natural and physical world, based on facts that can prone for example by experiment. Michael (2008) defines science as a systematic process of making inquiry.

The science manpower in the U.S.A defines science as "a cumulative and endless series of empirical observation which result in the formulation of concepts and theories with both concepts and theories being subjected to modification in the light of further empirical observation" (Alamina, 2008) Science is both a body of knowledge and the process of acquiring and refining knowledge (Collette 1975). Some components of science are biology, chemistry, physics and Health science.

Education is not about the learning about facts, but the training of the mind to think. Urevbu (2009) state that education is the total process of human learning by which knowledge is impacted and skills developed.

Fafunwa (1974) defines education as the aggregate of all the processes by which a child or young adult develops the abilities and other forms of behaviour which are positive value to the society in which we lives. It is the process f receiving or giving systematic instruction, especially at a school or university. It could also be defined as the process of facilitating learning, or the acquisition of knowledge, skills values, beliefs and habits.

Education is the only means of transformation of society, it equips people with knowledge, skills and competences which make them functional and contribute to the development of a nation, education as agent of growth, key to poverty reduction and engine for even distribution of income (Dreze and Sen, 1995).

Science education is a field of practice. It is a field concerned with sharing science content and process with individuals not traditionally considered part of the scientific community. Science education is not science perse but education in science.

Therefore, Ogunniyi (1986) states that people confuse science and science education, while science like other subjects has well defined discipline such as biology, chemistry physics and health science. Science education cuts across many fields of human endeavor such as the nature science mention earlier, sociology, philosophy, psychology history, Art, language among others. The science education lays the foundation for future work in science and science related field by acquitting the students with certain basic knowledge, skills and attitude.

Pumber and Humbe (2009), as a process of teaching or training especially in school to improve one's knowledge about environment and develop one's skill of systematic inquiry natural attitudinal characteristics. Science education involves the study of science in depth and in addition, educational knowledge and concepts are learnt and verified. Science education equips teachers, learners and society with knowledge, skills, equipment and freedom to perform noble task useful for improving socio-economic standard.

So science education is the bedrock upon which scientific and technological development depend. Science education produces scientist who contribute meaningfully to academic excellence of the society to raise the economic level of a nation.

### **Importance of Science Education**

The main aim of science educator is to produce scientifically literate person (scientist) the scientists such as chemist, physicist and biologist are contacted or employed by the state (politics) to research and find out the best way of solving societal problems. The scientist pass their findings to the technologists, engineers etc. who put usable forms to arrest the situation e.g. family planning techniques, drugs and material to control population growth, drugs to control or cure disease, electromagnetic waves to improve communication, these will go a long way to solve the problem of a nation. Thus, contributing to the development of the nation, without Science Education Information Technology would be impossible. Science and technology will not be possible without science education for instance engineering, medicine, Architectures etc. will not be possible if there is no one to teach the students the core subjects needed for these courses.

Biology education is very important to a growing economy like Nigeria. Many graduate of biology education are self employed and employer of labour; many owed schools for themselves where people work and earn their livings.

There are colleges of education where students of chemistry department are taught how to make dye and chalk; graduates of the department can establish their own chalk business.

A graduate of physics education can be self employed. Some have the knowledge of electronics and can stand as electronic technicians. Semi-conductor is very important in the modern technology that if properly learnt it will be enough for one to stand upon for a living, in semiconductor, is very important in a growing economy like Nigeria, it is useful in ceramic industry and a well trained physics education graduate can be well established in ceramic industry.

Other products of science have helped immensely to develop the nations as a global village. Take for instance, internet, chatting, teleconferencing, data conferencing, video conferencing, electronic funds transfer, World Wide Web services, point cast, in-Box-direct, on-line career centre, and the electronic machine for voting. (Card reader) the developed world is so powerful

and stable because of its, science and technological development therefore the scientist is a key to political stability and growth.

### **Political Stability**

Political stability is the durability of current government regime. This is determined based on the amount of violence and terrorism expression in the nation and by citizens associated with state. A stable society is one that is satisfied with ruling party and system of operations and is not interested in revolutionary or despotic idea. A stable science is one where the ruling government is favoured by population and does not experience strong indicators of social unrest. While there are problems within any nation, and time of war or hardship are common a stable political system is one that can withstand these occurrence without major societal upheaval and ongoing endurance of the circumstance. According to Sottilotta, (2013) the concept of political stability is a very controversial concept. Sottilotta defines as absence of domestic civil conflict and widespread violence. In this sense, a country can be considered rid of instability when no systematic attack on person or property takes place within its boundaries. Political stability draw on the lack of structural change that is, the absence of internally or political stability and economic growth in Nigeria.

Characteristics of a stable country are as follows;

- ❖ Improvement in employment
- ❖ Protection of culture and unity
- ❖ Provision of basic infrastructure and service
- ❖ Adequate power supply (electricity)
- ❖ Sufficient water supply
- ❖ Increase and improvement in health care.

According to Wolfensohn (2002) said that development can be viewed in form of improvement of the lives of poor people by providing them basic need such as education and health care.

So if the above stated characteristics are put in place there will be a stable country, thus enhancing growth and development.

### **How Science Education Contribute to Growth and Development in Nigeria**

According to Osabuohien (1995) development means a process of improving the total circumstance of the citizenry by satisfying his physical, psychological and psychic need with consequent mastery of his environment.

Igwe (2008) in Nwogu (2011) development means reduction in poverty, illiteracy, and unemployment and income inequality. Science education has necessitated the growth of Nigeria in the world by improving living condition of human race and socio-economic and political development of individual and the world at large.

English Wikipedia defines growth as an increase in size, number, value, and strength.

Friedman in his fashion defines growth as an expansion of the system leading to the structural transformation of social system.

For any nation including Nigeria to grow, there is need to recognize science education as priority area of education for her citizen (Ogunmade, 2006). A better education in science for

child can also mean better things for the society by helping students develop into more responsible citizen who helps to build a strong economy, contribute to a healthier environment and bring about a brighter future for everyone. The more science — literate individual are, the stronger the society can be. Specifically, the knowledge and skills science gives us can have effects that help make more responsible citizen, a strong economy, a healthier environment and a brighter future for everyone.

There have been rapid developments in education since independent in Nigeria. More particularly, there has been rapid development in tertiary education with respect to science and technology in the last two decade. This is due to the role of science and technology in the development of nation. Science education in Nigeria concentrates on the teaching of science concepts, method of teaching and addressing misconceptions held by learners regarding science concepts. Science education is very important to the growth and development of any nation that is why every nation must take it very serious in all institution of learning. Many of the developed worlds were able to achieve so much in science and technology because of science education.

Science education has made information and communication technology possible. When there is enough scientist or technocrat our science equipment and infrastructure in our schools will not be lying wasted.

### **Growth of Nigerian through Science Education**

Science Education can help Nigeria to grow and develop in the following ways:

1. Production of responsible citizen: Students have learnt how to think critically and shun skepticism. Also, the sense of responsibility and caution that science provides — along with the understanding of how things work (be they chemical reactions, human development or nutritional need) can help future parent to provide safe, healthy environment for their own children and be more responsible neighbours.
2. Helping to build a strong economy and communication, research, reporting and collaboration: Skills that science provides produce a generation of individuals who are better prepared for any career and make greater contribution to society. Also students who have solid knowledge base in science will later be more open to emerging technologies and ideas that can boost businesses and stimulate the economy. It has been noted that the difference between developed and developing countries is based on the quality and quantity of science and technology they possess (Ochu, 2007). Adikwu (2008) maintained that Nigeria, if Nigeria must survive as a nation we need science and technology used and managed by Nigeria.

Science and technology is a know force that triggered global change. Innovations in ICT fundamentally alter how people live, work and play. Specifically, the internet creates new channels to market and generates entrepreneurial opportunities by allow people to share ideas and collaborate without being part of a formal organizational structure (Austin, Stevenson & Wei-Skillern 2006). For example, mobile telephone supports social connections. It enables the timely sharing of information. It also opened significant economic possibilities for millions through mobile banking money transfer. Information and communication technology is becoming ever faster, cheaper and ubiquitous.

The effect has been tremendously and wholesales change in how the world communicate, which has spawned an array of new media, mode of communication and social

behaviours. In turn, this advancement has led to exponential growth of digital information, accompanied by complex issues relating to data storage and security (Johnson, Smith Levine & Haywood, 2010).

At the same time, information and communication technologies have dramatically recast how we understand and experience the world. Modern technologies, paired with human ingenuity, have redefined how we live, work, communicate and learn, making the once unimaginable routinely possible (Castells, Caraca & Cardoso, 2012).

3. Contribution to a global health: Scientific achievements have led to longer, healthier, better lives. Generation that understands and honor or celebrates past achievement welcome and pave way for future discoveries and inventions that improve physical and mental health. Also a healthier society, tend to produce more productive society.
4. Contributing to informed decision that impact the world by emphasizing and explaining the dependency of living things on each other and on the physical environment, science fosters the kind of intelligent respect for nature that inform decision on the use of technology to improve the world for human and living things.
5. Provision of opportunities for unemployed graduates in science and technology fields: Ensuring future support of scientific research and advancements. A science literate society provide the necessary support, funding and promotion to ensure future generations continue to improve upon advances that benefit everyone. A society aware of the benefits of science work to ensure it remains scientifically competitive

#### **Relationships of Science Education to Political Stability and Growth in Nigeria**

The Nigeria political economy and institution determine the rate of growth and development. Development has to do with technical issues which depend on the role of state, country mobilize people, resources and direct them towards economic growth and development. Sustainable development could only be achieved with effectively role of state. Science education has help in producing scientist who assist in technical issues and contribute to a stable and national growth and development.

Science education has played a vital role in the nation by producing science literate society who has contributed immensely in improving people's cost of living and standard of living. Wolfensohn (2002), said that developed is viewed in form of improvement of the lives of poor people but providing them basic need such as education and health. When people are educated and employed, there will be no room for instability. More so, if Nigerians are able to achieve the stated objectives in the nation, policy of education through science education, it will embrace growth and stable nation. It will also attracts investment climate that provide favourable condition for international trade, good governance, invest in human physical capital, equality of the institutions, rule of laws, competition and the gender equality (Wolfensohn, 2002), close relationship between government and industry, effectiveness of government and absence of corruption, good policy tend to lead institution building, financial regulation and co-operative structure promote growth.

Scientists contribute to issues or problems of society by providing solution and this has helped Nigeria to grow or improve in the area of health, education, environment sustainability,

communication and information. Science is life and life is science, remove science and its product man will found himself not better than the beast of the forest.

Science and Technology are two crucial component of all effort aimed at fostering growth and socioeconomic development of a nation (Thiam in Kerr, 2009). Science education provides opportunity for awareness creation and exploration at primary and secondary. It is also responsible for training and producing middle and higher scientific and technological manpower for national development. In development and growth, science plays important role in transformation and development and is concerned with mental processes in reasoning, problem solving remembering and evaluation. It also involves ability to perceive value issues and feeling and skill acquisition.

According to (Dreze and Sen 1995) education is the only means of transformation of society. It equips people with needed knowledge, skills and competences which makes them functional and contribute to the development of the nation, education as agent of growth, key to poverty reduction and even distribution of income.

Olaniyan and Okema Kinde (2008) opined that education is an investment in human capital which is a critical output for innovation, problem for development of Africa is poor education expansion to stimulate growth and development.

Science education constitutes the core human development and political stability because it is a key for transformation and sustainable growth and development of nation. Science education is an instrument for empowering young people with knowledge and skills which in turn provide them to productive employment, thus contributing to the growth of a nation.

Science education has increase tertiary education and also rapid development in education since independent in Nigeria. Science education produces scientific literate person which helps to improve the quality of life and governance of the polity. Science education satisfies people's need (i.e. both physical and psychological needs), reducing poverty, illiteracy, unemployment, income inequality thus, embracing growth and stability. Science education has necessite the growth of Nigeria by improving condition of human race, social economic and political development of the individual and the nation.

### **Conclusion**

Science education plays a significant role in preparing science students become socially fit into the society. The scientists are keys to political development and growth. The developed world is so powerful and stable because of its scientific and technological development.

Science education is the only means of transformation of society. Science education fosters growth and socioeconomic development of a nation. The development and growth of any nation depends directly on its level of scientific literacy. Science education if fully implemented will accelerate development and growth of Nigeria by providing the bedrock up on which technological advancement of the nation is built. Science education needed to be given a special attention in the scheme of things that requires no emphasis.

### **Recommendations**

- ❖ Government and private sector should put more effort and resources toward the development of science education.

- ❖ Government should also provide necessary science equipment in research institute so that Nigeria scientist can carry out research work without fears especially as regard to economy of the country.
- ❖ More science laboratories should be established and few existing ones equipped and staffed so that student can have enough facilities to research on.
- ❖ Qualitative and afforded science education should be made available for all Modern learning aids such as computers, internet, website facilities, over head projectors firm etc should be provided in schools.
- ❖ Science teachers should be well paid so that they can put their best in teaching the student.
- ❖ Government private spirited individual NGO' s should as a matter of fact be involved in funding of education and science education to achieve the development aspiration in area of science and technology.
- ❖ Science education curriculum at all level should be revisited and reviewed in line with changing global trends.
- ❖ There should be training and re-training of science education teachers to keep abreast with curriculum trend in science education.
- ❖ Science education teacher should be helped through seminar, conference, support supervision and journal publication to acquire a range of skill for effective classroom interaction in science education.
- ❖ Science education teacher should always adopt stimulating methods to stimulate students' interaction and positive feeling towards science subjects.
- ❖ Science education teacher should ensure lessons they are;
- ❖ Encourage science students' participation collaboration.
- ❖ Provide help/clarification to science students.
- ❖ Encourage supportive relationship among science teacher and student.
- ❖ National educational policies should establish strong link between stake holder in education to ensure curriculum development across the full developmental process, also taking into account the need for coordination between scientist and technologist from academia should be included in designing the curriculum.
- ❖ There is need to raise the level of academic quality of science education particularly within secondary and university educational sector.

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