



## The Relevance and Quality of Physics Education in National Unity

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### Abstract

The paper is a logical survey of the relevance and quality of physics education in national unity. The paper viewed concept of national unity, conceptual and theoretical analysis of physics education, challenges of physics education in Nigeria, and the relevance of physics education in national unity. Conclusively, the significance of Physics education cannot be over - accentuated as it forms the foundation for high-tech innovation of any nation. Physics plays a dynamic role in the development of any society; the paper recommended that government should finance physics education to provide jobs for graduates, making the world worth living and reducing unemployment among youth, government should integrate into the physics curriculum the concept of national unity and ethical topics from primary to the higher institution and should be made compulsory. Physics education remains the key that can unlock disunity.

**Keywords:** Relevance, Quality, Physics, Education and National Unity.

### Introduction

The growth of any nation correlates with the level attached to her education Aina (2013). Education is anticipated to be given top priority in national development strategies around the world. A system of education that is incapable of meeting societal needs at large by making beneficiaries fit into it or empowering them mentally, socially, politically and economically cannot improve national development. There is a need to make all school programmes to be relevant, practical and comprehensive in order to increase the interest and ability of the students; and also to regulate entities' trend in education for the attainment of applicable skills (Udoh & Akpan, 2014). There has been much confab pointing to education system as a key room where national unity may be nurtured. Education is a substantial concept both within the local and international development sectors (Urwick & Ellioit, 2010). Education has been known as the most important medium to uphold national unity. It plays an important role in eliminating and improving social justice for national development. Quality education is fundamental to National unity because it depends on the literate and trained citizenry. (Ahmad & Ahmad, 2014) believes that education is a tool for making quick development growth in every country. With this assertion, Jaiyeoba (2007) reaffirmed the importance of education as a priority area in all well-intentioned societies. Education also serves as a key driver of advancement in the fields of business, administration, economics, and culture. The Federal Republic of Nigeria's policy on Education (2013) states that education is important because;

- (i) Develops individuals into ethically sound, energetic and effective citizens;
- (ii) Integrates individuals fully into their immediate communities, Nigerian society and the world, as a global village;
- (iii) Inculcates a national consciousness, values and national unity; and
- (iv) Develops appropriate skills, mental, physical and social abilities/competencies and empowers the individuals to live in and contribute positively to society.

In line with the information confined in the policy statement, national unity can only be achieved and relevant if functional and quality education is given to all citizens at an early and formative stage of life.

Physics education is one of the science subjects that can provide national unity destined to provide the basic developments needed in technology, It is very essential to the development of any country which is why every country must take it very seriously in all establishments of learning. Many of the developed nations were able to attain so much in science and technology because of physics education. The objectives of teaching/learning physics as stated in the physics curriculum for NCE level according to the National Commission for Colleges of Education (NCCE, 2020) are to:

- i. Gain fundamental information on the hierarchical ideas and methods in viable physical science and laboratory management.
- ii. Learn how the fundamental principles of physics were developed through a process of investigation



- that produced scientific attitudes that may be applied to other facets of life.
- iii. Plan and successfully carry out physics-based lessons in classes B1 through B9 in compliance with UBE policy,
  - iv. Acquire sound basic knowledge of the physics concepts and principles to equip them for further studies in physics and related courses,
  - v. Describe the fundamentals of science.
  - vi. Utilize information technology (IT) wisely to aid students' learning physics,
  - vii. Show that you grasp fundamental physics principles by using and revising them as needed.
  - viii. Be aware of the challenges students encounter when learning physics,
  - ix. Successfully conduct formative, diagnostic, and summative evaluations of students' physics work (theoretical and practical),

It is undisputable fact that an important means of enlightenment is physics education. Physics education enables beneficiaries to function well and gives its part to the development of societies. Preparing its citizens for a responsible and productive future is one of the fundamental objectives of physics education in every country. This will enable them to contribute successfully, professionally, and effectively to society. Nigeria is a nation with a severely diversified culture; it is made up of about 250 ethnic groups. National unity is the coming together of people with different cultures, ethnic and religion for common goals. National unity, according to Eme-Uche (2012), is a sentiment of shared goals that unites individuals of all cultures, colors, and ethnic nationalities as one. National unity cuts over every range of human life, National unity by some scholars as equate to means national unity, nation-building, national integration, and consistency. Morrison et al. (n.d.) claim that national unity is the cycle by which individuals from a social framework establish connections and areas so the lines of the framework persevere over the long haul and the limits of sub-frameworks become less critical in impacting conduct. National unity is the method of building and teaching a coalescing spirit, a positive assertiveness among the citizens of a society or nation that exists through peaceful cohabitation, according to Alapiki (2005). National integration is characterized as the feeling of coherence, coordination, faithfulness to the country, patriotism, and tolerance among the citizens of a country. It may also be described as a sense of shared purpose and direction. In order to encourage learners and students

to acquire a spirit of patience and a sturdy feeling of nationalism that will encourage the development of the country at large, Nigerian education at the basic, secondary, and tertiary levels should instill the values of unity, togetherness, and undividedness in them. This essay aims to discuss how Nigeria's physics education might be made more significant.

### **Concept of national unity**

The concept of national unity can be seen as a desire of being unified as a country exactly in positions of distress. Unity as a concept means a buildup of many elements into an indissoluble oneness. Unity sees individuals as a single unbroken entity. In other words, it is the process of banding together to combat anything that impedes a certain set of people's ability to develop as human beings. Being a normative concept, the phrase "national unity" can mean different things to different people. Ojo (2009) defines national unity as the process of bringing a community together in order to make it a harmonic metropolis that its citizens perceive as equally harmonious people, who are unified, identify each other as one, irrespective of individual variances, meanwhile, Nigeria is a multiethnic country, a global with various individuals and societies, a transporter of various religions and world-sees and a country with the different convictions of its kin.

Ojo in Onifade (2013) referred to a sense of community among individuals who are members of the same political body as national unity. Being unified, working together, and committed to shared goals is a state of mind or temperament. It is this unity that can spread peace and bring about successful socio-economic and political development. Unity springs from people who understand each other in any ecological setting. Nigeria is noticeable as a major example of citizens that are separated along ethnic lines. There is important to note that no ethnic group in Nigeria—major or minor—shares a common dream. This is due to the fact that the worldviews of the various ethnic groups are totally different, including their prospects of their leaders, notions of government, moral standards, insights into and understanding of religion, ideas about how to live and adjust their lives, as well as their objectives and missions as ethnic nationalities. According to Ali (2011), encouraging discussion and tolerance by all levels of government is necessary to create national unity and peaceful coexistence. According to Shuhaib (2012), "massive enlightenment must ensure" that there is continued



peace and unity in Nigeria. The government must work to educate the populace, particularly the uneducated and uneducated, about the importance of equality and coherence as well as unity and peaceful coexistence among the peoples. When ethnic groups work together to create consensus and a social structure and function that promotes social order within a political context, national unity becomes possible.

### **Conceptual and Theoretical Analysis of Physics Education**

The development of any nation is directly proportional to the level of education attained by the citizen. Education is always preparing individuals for the future, despite the fact that it is challenging to define education precisely. Education facilitates learning, or the development of information, abilities, values, morals, beliefs, and habits. The method of acquiring knowledge and skills is called education. Education, according to Okafor (1992), is a process of acculturation that aids a person in realizing their full potential and activating it when necessary for the correct reasons, enabling them to achieve perfect self-fulfillment.

In Nigeria, the National Policy on Education (NPE), which outlines the nation's educational objectives and guiding principles, serves as the primary source of inspiration for science education. The development of the student into a morally upright, patriotic, and useful citizen is among the objectives of education in Nigeria, along with the development of the student's social skills and abilities as tools for assimilating into society and making a contribution to its advancement (FRN 2013, 2013). The objectives of science education must comply with national policy and include:

- (i) Develop a curious, knowledgeable, and cogent mind for the advancement of democracy.
- (ii) Produce scientists for national development
- (iii) Service studies in technology and the cause of technological development; and
- (iv) Impart information and comprehension of the complexity of the physical universe, as well as the shapes and behaviors of life (FRN, 2004).

It is widely believed that scientific education is a distinct area of study within education, and it is concerned with how science is taught and learned as well as with specific science reprimands. Science education develops understudies' interest about the world and upgrades logical reasoning. Science

education in Nigeria emphasizes on the educating of science ideas, technique for teaching and tending to misinterpretations held by students in regards to science ideas. Science education encompasses three subjects to be specific biology, chemistry and physics which are collective with education.

Physics can be described as a science that allows for creating idealized model of the world (Katarin, 2013). Physics is everyday activity around us, physics teachers must find a way to relate what is taught to daily life. A significant subfield of science education, physics education focuses on the teaching and learning of physics at the secondary and postsecondary levels as well as the development of physics teachers and the general understanding of physics. Physics education is the dissemination of scientific knowledge to those who are not often regarded as being part of the scientific community. These people can be students, farmers, market women, or an entire community. In Nigeria, physics education focuses on dispelling myths about science concepts held by students as well as teaching science principles and teaching methods. Without the importance they gave to physics in the classroom, the Russian government's launch of Sputnik on October 4, 1957, would not have been conceivable. In order to notice national unity in Nigeria government needs to understand the relevant of physics for national development.

Physics education is crucial since it serves as the basis for every country's technological growth, hence its significance cannot be overstated. For instance, physics is dynamic in the growth of any society; for developing transistors, diodes, and integrated circuits (ICs), which enabled the development of radio transmitters and receivers, televisions, and radio tape players, a graduate of physics education can be independent and have knowledge of electronics sufficient for them to be able to have a brief period of training as learners and then stand alone as an electronic technician. In addition, current medical devices like X-rays and ultrasound that scan the human body for diagnoses in hospitals and other healthcare facilities were developed using understanding of physics. X-rays are used to take pictures of patients' internal structures and treat cancer. Solar energy is developed from the acquaintance of Physics, solar energy in physics is part of what any graduate in physics will learn and should learn. For example, solar is very important in this advance technology that if well learnt it is sufficient for one to depend upon for survival; in a developing nation like



Nigeria, where the economy is still in its infancy, solar energy is extremely important. It may be used in both the home and the workplace to save, store, and use sunlight for many purposes, including the processing and preservation of food and the creation of power, physics is used in nuclear technology, which includes the creation of nuclear weapons, the production and processing of nuclear fuel, etc. A new class of enterprises dependent on human intelligence and talent is created by mechanics. Additionally, derived from mechanics, machinery aids in the growth of industries. Physics-based knowledge of electricity and electronics was utilized to construct telephones, optical cables, phonograph fiber, and the internet, which connects every country in the world. Because they all used electric motors and the principle of moments in various parts, vehicles like cars, motorcycles, bicycles, ships, trains, and airplanes were all developed using the knowledge of physics. In order to take and receive messages from various regions of the world, computers and satellites were also developed from the field of physics.

Even with all these benefits to nation-building, improving the quality of life for everyone, and lowering youth unemployment, physics education continues to be the key to overcoming division.

### **Challenges of Physics Education in Nigeria**

It is no longer news that Nigeria's education system has been in a disaster; rather, it is a catastrophe that will impede the country's progress toward economic, social, and political stability. In recent time, the school system had experienced a heavy draw of violent attacks fluctuating from the kidnapping of students, teachers including lecturers which had claimed many lives, even the devastations of valuable infrastructure in the school atmosphere. The following have been recognized as part of the encounters that affect physics education conflict, religion crises, insecurity, ethnic diversity, bad governance, poverty, lack of economic opportunities, low level of economic development, political instability, inequality, corruption in the education sector, strikes action, poor remuneration and poor working condition, poor school admission policies, poor physics laboratories, inadequate classroom, poorly equipped physics libraries etc.

Numerous arguments have been made emphasizing the school as a crucial setting for fostering national unity, Nigeria has a very good National Policy on Education published in 1977 and reviewed in 1981 and 1998. The Nigeria's education as it is today cannot assist the

country to accomplish the five main national objectives as stated in section 1 of the National Policy on Education.

1. a free and democratic society;
2. a just and egalitarian society;
3. a united, strong and self-reliant nation;
4. a great and dynamic economy;
5. a land of bright and full opportunities for all citizens.

The policy includes excellent national educational goals and objectives as well as great national values. Only via practical education can these national educational purposes and objectives, national values, and goals be fulfilled. Nwachukwu (2012) identified that a good science education Programme is expected to achieve an appreciable national development and unity. It is true, however, that Nigeria as a whole has not progressed and that there is no coherence. What is popular in Nigeria right now has had an impact on the development of physics education, and the solution is that if the government, religious leaders, and individuals are prepared to come together and live in harmony with one another, Religious leaders must preach peace to their followers. The law should cover all aspects of life and not just money, so that any government official who gave preference to anyone for admission, employment, or promotion based on ethnicity or religion should be fully sanctioned as someone who stole public funds. Citizens must be prepared to wage war against corruption. Teacher's salary and other allowances should be paid as when due to prevent Strikes action, equipment are to be supplied by government and provision of workable laboratory with qualified teachers including functional library. Additionally, serious attention needs to be paid to poverty and widespread unemployment, which are known to have helped fuel violence in Nigeria. The government should develop jobs so that young people are gainfully employed and independent.

### **The relevance of physics education in national unity**

No nation's technological advancement can be made without the foundational science of physics, hence its significance cannot be overstated. The development of any civilization and the maintenance of national unity are both crucial components of physics. Development would not be possible without unity. Anywhere in the nation, a physicist can work as an educator, educationist, scientific adviser, or planner for the



ministries of education and science and technology. For the purpose of planning and developing businesses, the engineering and construction sectors need physicist expertise. The military and aviation sectors are likewise full of possibilities. Physics-based research led to the development of solar energy, which is used in the processing, storage, and preservation of solar energy for uses such as producing electricity and food processing, nuclear science expertise. The processing of nuclear fuel for use in nuclear power plants, the creation of nuclear weapons, and other applications all involve physics. Since physicists can be useful in research in ophthalmology and radiology and can work in libraries and the publishing industry as editors of scientific works, they may find employment in medical in order to diagnose patients and treat cancer, devices like X-rays and ultrasound scanners were created using the knowledge of physics. These devices are utilized in hospitals and other health facilities.

As the world has become a global village thanks to computers and satellites, which were also developed in the field of physics, physicists can be employed in radar control at airports, as computer operators in banks, and as customer service officers, production officers, senior technical staff, banking officers, marketing officers, and programming officers in the private sector (oil, banking, and telecommunications).

He or she could become self-employed with a physics education. Given that they have prior educational experience, someone with sufficient financial means can start a school. One may also consider starting a related school, such as one with specialized classes for math and physics or one with a consulting firm that provides home tutoring for those studying those subjects. Some topics covered in physics classes are relevant to certain professions, the development of transistors, diodes, and integrated circuits (ICs) in electronics, which enabled the creation of radio transmitters and receivers, televisions, and radio tape players, as examples. Physicist can come together not minding their tribe, religion etc. to work for the development of the nation. A graduate in physics education can pursue additional training through an apprenticeship to learn how to fix radio, television, handsets, generators, computers, and other electronic and mechanical devices, which will create employment and unity. Graduates in physics education also often go into computer engineering and internet networking as self-employed individuals.

## Conclusion

The study comes to the conclusion that physics education is a mechanism for achieving national unity in Nigeria. Functional education is required to advance a progressive and united nation. To achieve this, physics programs need to be current, practical-focused, and relevant for the development of relevant skills and the individual's mental, physical, and social abilities and competences as tools for living in and contributing to the national unity of the society. Citizens must remain firm and ignore all other elements producing divisiveness, such as tribalism, nepotism, and other behaviors displayed by the so-called leaders in Nigeria, in light of what happened in Nigeria after independence and the government's lack of true commitment to establishing national unity.

## Recommendations

1. Government should integrate in the physics curriculum the concept of national unity from primary to higher institution and should be made compulsory.
2. The awareness of unity in assortment should be established into the minds of Nigerians predominantly the younger children. These ideas can be achieved by enlighten them inform of poem, rhyme songs, jingle, drama etc. at all level of education.
3. Government should employ qualified physics teachers, Teacher's salary and other allowances should be paid as when due to prevent Strikes action, equipment are to be supplied by government and provision of workable laboratory and also functional library.
4. Religion leaders should preach peace to their followers; Citizens must ready to wage war against disunity.
5. The aspects of Physics education curriculum that are vocational-related should be practically well taught by the teacher.

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