

Role of Physics Education for Technological Development for Employment and Self Productivity in Nigeria

Sani Abubakar

Department of Physics
Federal College of Education, Katsina-Nigeria

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Abstract

Physics is one of core science subject being offered in Nigerian schools and it forms the basis for the nation's technological advancement and human resource development. This paper discusses the contribution of Physics in the technological development as well as the job opportunities for Physicist and highlights some of the problems facing Physics education in our schools along with the recommendations.

Keywords: Education, Physics, Employment, Technology, Productivity

Introduction

The education in Nigeria most always be oriented towards achieving a better future. The contribution of science education in the society of today's economy cannot be over emphasized. Jibril (1986) science is most powerful tool for man's development. It has been identified as an instrument per excellence in solving socio-economic problems of good health facilities, agriculture, employment, poverty and many other problems betting development in underdeveloped nation like Nigeria. Aliyu (2011) science and technology also makes enormous impact on shaping the society of today. The values of science in spike of the positive material impact help individuals acquire desirable skills and attitudes which enable them to adapt to the life of the modern days.

Holbrook and Rannikmae (1997) science has develop the ability to creatively utilize sound science knowledge in everyday life or in a career, to solve problems, make decisions and hence improve the quality of life.

Physics is a branch of science that deals with energy and matter and their interactions. It is sometimes referred to as the science of measurement and its knowledge has contributed greatly to the production of instruments and devices of tremendous benefits to the human race. The study of Physics can leads to several scientific fields and professions such as engineering, manufacturing, mining and construction industries. Apart from this the knowledge of Physics plays a very significant role in the development of any nation.

Contribution of Physics to the Society

The importance of Physics cannot be over emphasized as it forms the basics for technological advancement of any nation.

Physics plays a vital role in the development of any society in many ways, for examples; in electronics for developing transistors, diodes and integrated circuit(ICs) which allowed the development of radio transmitters and receivers, televisions, radio tapes players and also modern machines for health services machines like X-rays were developed from the knowledge of Physics

for used in taking images of the internal structure of patients and treatment of cancer and ultrasound to scan human body for diagnosis in hospitals and other health centers services.

Solar energy is developed from the knowledge of Physics applied in the preservation, storage and utilization of sun light for preservation and processing of food and generating of electricity e.t.c. The knowledge of nuclear Physics plays a role in the preparation and processing of fuel for utilization of nuclear power, development of nuclear weapons e.t.c.

In industries mechanics brings about new kind industries which depend on human skills and brains. Machinery also developed from mechanics helps in the development of industries.

Electricity and electronics developed from the knowledge of Physics is used for the development of telephones, optics cable, phonograph fibre and also internet that brings all parts of the world together.

In transportation, cars, motorcycle, bicycle, ships, trains as well as aero planes are all development from the knowledge of Physics, this is because they all used electric motors and principles of moments in their various part.

Computers and satellite were also developed from the Physics in taking and receiving messages from different part of the world.

The contributions of Physics toward making the world worth living and boosting the prestige of several nations are too numerous to mention.

Job Opportunity for Physicists

A Physicist can work in the ministry of education and the ministry of science and technology as educator, educationist, scientific adviser and planner. Construction and engineering industries require the knowledge of Physicist for planning and developing enterprises. There is also opportunity in the aviation industry and military. Physicist can work in libraries and publishing houses as editor of scientific works and also Physicist can be valuable in research in ophthalmology and radiology therefore can find satisfaction in jobs in medical and health institutions. Physicist can be adopted in radar control at airports also as computer operator in the banks and Physicist can be fit as costumer service officer, production officer, senior technical staff, banking officer, marketing officer and programming officer to mention just a few in private sector (oil industry, banking, telecommunication and manufacturing industries) after sitting for aptitude test conducted by sector since the private sector is not only concerned about the area of specialization of applicants bur also their quality.

Oppportunity for Self Employed

A good certificate or degree in Physics education can make one self-employed. A financially buoyant individual can establish a school since he or she already has a background in education. One may also venture into the establishment of allied school, these includes: special class in Physics and mathematics, consultancy outfit (home services) as home tutors to teach Physics and mathematics. If well organized one can employ teachers and organize them into the various homes, thereby becoming an employer of labour.

There are some aspects of Physics education curriculum that are vocation-related. For instance, electronics and circuit network are concept that has direct bearing with electrical, electronics and computer jobs. A Physics education graduate can go for further training through apprenticeship to learn the acts of repairing radio, television, handsets, generators, computers, and other electronic and mechanical devices. Physics education has provided the pre requisite

knowledge of the mechanics of these devices. Electronics course offered are enough to provide the theoretical backgrounds for these gadgets. Electrical and circuit network also provide all theoretical knowledge of computer and electric works. Physics education graduates veered into computer engineering and internet networking as self-employed individuals. Also the balance education provided by the institutions will help in proper organization and coordination of business.

Problems Facing Physics Education In The Society

Some of the problems that Physics education is facing in our society today are as follows:

- **Lack of competent teachers to the profession**

One of the greatest problems faced by Physics teachers in our society today is that of recruitment and retention of competent people into the teaching profession (Adeyinka, 2010). The future of any nation lies in the hand of effectively trained and professional teachers. But now teaching is considered as the last hope of the hopeless that is profession of these that doesn't have any other thing better to do (Aliyu, 2011).

- **Inadequate laboratory facilities**

Laboratories in our schools are not well equipped also there is inadequate furniture in the laboratories and experimental materials as well as the competent laboratory technicians/technology.

- **Poor student's motivation**

The enrolment figures of most of student in our schools are in socials sciences and humanities which surpasses that of the student of Physics and other core science courses.

- **Lack of teaching aids**

The use of teaching aids which is necessary for better assimilation of the course is also lacking in most of our institution (Aminu, 2006).

- **Poor/ un committed students**

According to wasagu(2005) students are now a days lazy or not serious in their studies, secondary school certificate result seems to be no longer yards stick for admission, for a candidate with A-grade in Physics, chemistry, biology and mathematics will prefer to study Hausa/Social studies or arts related courses. How was he/she able to score such excellent grades but could not continue to pursue his/her science oriented courses is a matter of concern. The managed ones are committed to the task due to economic crunch and other domestic duties (Aliyu, 2011).

- **Lack of indigenous textbooks**

Most of the Physics textbook or almost all books used in our tertiary institution are irrelevant to our culture or beyond conception of the pupils or student. Inadequate science education authors to write textbooks using examples with local materials around us is a problem facing science learning (Titilade, 2006).

- **Curriculum**

As the world is being reduced to global village, national curriculum would give the way to international curriculum. Learning would become a universal system. Nationalistic or regional curriculum orientation would be replaced by global focused curriculum (Jada, 2004).

This indicates the need to review our present curriculum especially in the field of sciences (Physics inclusive) to meet our present advancement.

- **Lack of proper orientation to the students**

There is no orientation given to the student in the career choice. Students are not well guided to the course of choice for the future development.

Recommendations

For the problem stated following steps should be consider to ensure sustainable development of the nation and also the empowerment of the society.

- Recruitment of Physics teachers should be base on merit, a set of both written and verbal interviews should be conducted by all screened applicants so as to reduce impersonation. For a Physics teacher to effectively teach in a way that will lead to the development of desirable level of techno-scientific literacy he/she must be well groomed, be of sound knowledge in Physics and he/she must obtain in the relevant professional teaching qualifications along with specialized knowledge of instruction.
- Modern laboratories equipment that cannot be improvised should be imported to equip laboratories in the various schools. Well trained laboratory technicians/technology should be employed in the Physics laboratories.
- Government should provide good textbooks to the schools and the books should in an understandable language for the student to understand the context very well. This means there is a need for the government to provide the students with e-library so that they can be able to access the books of their choice.
- Government also should review the curriculum of the Physics education so that it will meet the present advancement
- Students should be counsel and guide property in the career choice also should encourage to study Physics by telling them the important of Physics in the development of the society. Proper measures should be taken to ensure that the student from the younger age to have the knowledge of Physics, therefore the government and stakeholders should find a room of organizing orientation/lectures from primary school level to higher school level.
- Political deception should be avoided in education sector by all types of government. Proper funding should be given priority attention to cater for infrastructure, learning materials, laboratory equipments e.t.c.
- Physics teachers and science teachers should be motivated by given incentives, such as a special salary scale for science teachers so as to keep them comfortable in the classroom. Attractive scholarship base on merit (performance of the students) not political scholarship scheme should be formed and made available for science students in teachers training institutions.

Conclusion

The paper discussed the important of Physics education in the society for empowerment and development of the society also looked into the job opportunity both in private sector, public sector and as self-reliance for a Physicists in the society. A problem facing Physics education in our schools and how they can be overcome has also been discussed.

Looking into the discussion above a Physicist has a great role to play in almost every aspect of entire life in general.

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