
**TAKING PROACTIVE NATIONAL DEVELOPMENT IN ITS STRIDES: A
SPECULATIVE PEEP AT EMERGING TRENDS IN SCIENCE AND TECHNOLOGY
EDUCATION AS A SURE PANACEA.**

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ABSTRACT: *This paper seek to make a brief account on the nature of Basic Science and Technology, it equally has interest in a systematic exposition of selected issues in integration in order to shed light into dangerous and treacherous concepts and solicit support for the reasons not beyond “a productive and reliable science and technology for national development”.*

KEYWORDS: National Development, Emerging Trends, Science, Technology, Education

INTRODUCTION

Precisely, Basic Science and Technology is the bedrock and mother of science education a.k.a integrated science. It is a multidisciplinary approach designed to resolve the issues of systematic ambiguity in teaching and learning of science. This is evidenced in Erinoshio (2004), she affirmed, “for science to meaningfully impact on development, a new approach in science education that incorporates the fundamental principles and concepts that are rooted in the tradition, cultural environment, daily experiences, and resources within the community is necessary (Cobern, 1993; Kroma, 1995; Alebiosu, Afuwape and Odukoya, 2012, Owino et al, 2014; Bilesanmi-Awoderu, Afuwape and Jolaosho, 2015). It is an inevitable corner stone in science education.

At this juncture, I will like to make an open pronouncement of the dimension (s) of this paper but before moving on permit me to observe one of the greatest achievement of Prof. Saburi Adesanya, the vice chancellor, Olabisi Onabanjo University, Ago-Iwoye for initiating a compulsory teaching staff academic seminar presentation in all departments of the university. In doing this, join me to raise the song “(Baba O) ^{3x}Oluwa da baba si fun wa,(baba o) ^{3x} oluwa da baba si fun wa) ^{2x} My consideration cannot leave some eminent scholars of our time behind, who have been contributing immensely to the development of humanity, in particular “Dr Moses Olanrewaju Afuwape” and the community at large. No other persons than the erudite and astute scholars, Professors Erinoshio, Odunaike, Kayode Ajayi, Hassan, Oyedeji, Abeke Adesanya, Alebiosu, Gbadamosi, Edun, Akinsola and others I may not be able to mention. I pray that your days shall be long to reap the fruit of your labour in Jesus name Amen.

To those who desire development of the nation, it should be of interest that this paper is a systematic exposition of selected issues in integration in order to shed light into dangerous and treacherous concepts and solicit support for the reasons not beyond “a productive and reliable science and technology for national development”.

Foundation of interest

Indeed, change is paradox and constant. The entry point to integration in science is to view the concept science and science education. Science is the systematic study of natural phenomena, nature and the universe at large. According to (National Policy on Education, 2014) section 7, 39(a-d), it claims.

- a. Science education shall emphasize the teaching and learning of science processes and principles. This will lead to fundamental and applied research in the sciences at all levels of education.
- b. The goals of science education shall be to :
 - i. Cultivate inquiring, knowing and rational mind for the conduct of a good life and democracy
 - ii. Produce scientists for national democracy
 - iii. Service studies in technology and the cause of technological development; and
 - iv. Provide knowledge and understanding of the complexity of the physical world, the forms and the conduct of life.
- c. Special provisions and incentives shall be made for the study of the sciences each level of the national education system. For this purpose, the functions of all agencies involved in the promotion of the study of science shall be adequately supported by government.
- d. Government shall popularize the study of the sciences and the production of adequate number of scientists to inspire and support national development.

Article number 42, with specific goals of technical and vocational education states;

- a. Provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical level,
- b. Provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development,
- c. Give training and impart the necessary skills to individual who shall be self-reliant economically.

Section three (3) says:

Basic Education shall be of 9 year duration comprising 6 years of primary education and 3 years of junior secondary education. It shall be free and compulsory, it shall also include adult and non-formal education programme at primary and junior secondary education levels for the adults and out-of-school youths. Ladies and gentlemen, looking at the above, how faithful are we to the policy? The specific goals of basic education shall be the same as the goals of the levels of education to which it applies (i.e. Primary education, junior secondary education and adult and non-formal education).

To conclude, the goals are as follows:

- a. A free and democratic society
- b. A just and egalitarian society
- c. A great and dynamic economy
- d. A land full of bright opportunities for all citizens.

This position of Education in Nigeria is strengthened by

“American National Research Council (2002) Points out that rethinking and assessing curriculum, teaching, assessment and teachers’ especially development depends on whether they facilitate understanding study and whether they agree with the seven principles of learning with understanding put forth in the 1990s. In accordance with the seven Principles of curriculum design features structured learning activities that, in a real or simulated fashion, allow students to experience problem solving and inquiry in situations that are drawn from their personal experience and real-world application”.

In pursuance of the above statements of the policy on education, it is important to note that “Basic Science and Technology” remains the science subjects of universal basic education with the general consensus and slogan “EDUCATION FOR ALL”. Take note, Basic Science and Technology Education programme and its trinal powers are derived from “LIFE, MATTER and ENERGY” this is a tremendous express route into laying a solid foundation for “PHYSICS, CHEMISTRY and BIOLOGY”. Though but WHY, WHAT and HOW is the practice? The establishment of trinal powers cannot be found outside the mainstream of God the father, God the son and God the holy-spirit. The tripod stand for “a productive and reliable science and technology for national development.

Issues in Integration

Research Studies in science education shows different dimension of challenges students have in solving problems in different areas of science (Afuwape and Olatoye, 2004) taking cognizance of the role and functions of science for national development. It then becomes pedagogical cankerworm for immediate flush of ideas and alternatives. Let me open the page with Bajah (1988) in his inaugural lecture, he quoted Onocha (1985) doctoral dissertation that the genesis of elementary science which has now metamorphosed into Basic Science and Technology in Nigeria today is one of evolution rather than revolution.

The evolution started in 1859 as nature study, when science teaching was basically observation of plants, animals and non-living things. Science is designed to provide opportunities for students to do it. The unit and department of science and technology, Olabisi Onabanjo University is one and only producing resources for faculties like Agriculture, Basic Medical science, Engineering, Medicine e.t.c. Let me ask, should we desire evolution or revolution comparing the phase of modern science to the old? Change is constant.

Inadequate Infrastructural Facilities: It is a pity activity oriented style of learning is changing, where even practical work in Nigeria Secondary School public examination has been replaced with alternative to practical, standard laboratories went to extinction and site and workshops are not visible, instead of development, we work for mediocrity under the presence of indiscipline and lack of fund. While policy discusses experimental and inquiry practical work, the system adversely and short sightedly discusses and emphasizes moderated chalk and talk system of teaching (conventional). Alebiosu, (2001a) and Murithi and Wachira (2013) has raised the issue that energy (physics) remains an incomplete metamorphosis in as much as practical work remains an indelible story line. By this paper, the unit of Basic Science and Technology Education, STED, OOU, Ago-Iwoye solicit for a standard workshop and site of about 4000sq/meter for science and

technological activities, all in the interest of a productive and reliable science and technology education for national development.

Disposition to duty: A teacher's attitude is very important in making students achieve any goal. It is regarded as a favourable or an unfavorable reactions towards some experience, situation, or activity as a result of the way such an individual perceives and conceptualizes them (Odubunmi, 1998). What now happen to a teacher who will not teach and still want to examine students or anxious to collect wages not worked for, is that not assassinating, criminal and unethical? Good teacher-Bad Student? Enough of conceptual imposition. Where is the position of pedagogy? Rather than facing serious academic exercises, it could be disheartening to note that teachers known to be agent of change engages in some crooked and deadly activities of destruction to humanity. What a nation? Daily Sun News, Tue 10th May 2016: Only rule of law can check tyranny, Oppression in Nigeria. Hear the quote of Steve Jobs More "The only way to do great work is to love what you do. If you haven't found it yet keep looking. Don't settle" I want to ask Mr. Teacher, what have you done, are you a teacher or a cheater? "Do your little bit of good where you are; it's those little bits of good put together that overwhelm the world" Desmond Tutu More. (Proverb 14:16) A wise man feareth, and departeth from evil: but the fool rageth, and is confident. Chapter 10:12 Hatred stirreth up strife's: but love covereth all sins. However, verse 30 the righteous shall never be removed: but the wicked shall not inhabit the earth. By this note, teachers are encouraged to plant productive and reliable trees of life.

Development of Phobia: Phobia discourage students from learning science especially when it comes to mathematical computation, graphical illustration, critical and logical thinking (Koya and Boyack, 2013). This situation poses challenges to all mathematical educators by bringing in the position of method to achieve goals. Students are expected to understand the Origin and usage of formulae and equations in sequence not just using them to solve sums. This will go a long way in making them understand science better than before.

Inadequate Mobilization: It should be recorded that children science has not been given adequate mobilization in Nigeria. If not, the nation's unemployment problems will persist for life and economic complexities will persist until the grass root causal agent is trashed out by supporting and encouraging Basic Science and Technology Education. It is not too late to wake up from slumber. If by now the nation is worried and concerned with science and technology for national development we should have proposed "Institute for Children Science" in Nigeria with adequate and appropriate infrastructure, and personnel. If not, now is the time for us to achieve it.

Enrolment: Poor enrolment is most Challenging arising from students social interest and lack of scientific background, poor mathematical orientation, teachers low standard pedagogical contact knowledge Adegbija, (2014) & Bilesanmi-Awoderu, Afuwape and Jolaosho, (2015). Also, Alebiosu, (2012) jingled the bell during her inaugural lecture that low patronage and unencouraging performances in the field of science and science education are emergent issues. This trend could have rather received a better treatment if higher institutions of learning in Nigeria were to have developed interest in science and technology education for a national development by eliminating sentiments and giving adequate respect to policy document on 60: 40 ration

admission rule in all faculties, departments and units of our universities but today, the reverse is the case.

Teacher Welfare: Many administrators fail today in Nigeria because they lack recognition for staff or teachers welfare. Alebiosu (2003), Adeyemo (2012)... lamented, and frown at such acts: remuneration for science teachers, delay and failure to promote teachers as at when due. Issues of this nature amounts to starvation and setting death trap, taking a queue from popular adage that says “ JUSTICE DELAY IS JUSTICE DENY”. It is God’s promise for every individual that we shall not labour in vain and ye shall eat in plenty, and be satisfied, and praise the name of the Lord your God, that hath dealt wondrously with you; and my people shall never be ashamed. (Joel 2: 26) By this paper, appeal is hereby made to necessary and appropriate authorities , in particular, Olabisi Onabanjo University, Ago-Iwoye that all outstanding salaries and allowances should be paid as a matter of urgency and promotions should be effected without delay. Knowing fully that these factors will serve as weapons of productivity.

CONCLUSION

Arising from the above revelations on the state of affairs of science education in Nigeria bearing in mind that national development is clouded in “a productive and reliable science and technology education” it then becomes paramount that efforts should be geared towards improving the teachers of science and the system for improved performance.

Thank you.

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