
Entrepreneurial And Functional Physics Education As A Means Of Achieving The National Objectives Of Vision 2020 In Nigeria: Challenges And The Way Forward

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Abstract

The world presently is experiencing economic recession. Every country is looking for ways of addressing the problem. In this period of economic crash, Nigeria is yearning to become one of the world largest 20 economies by the year 2020. In order for the country to realize this dream, there is need to develop entrepreneurial skills among her teeming school leavers and graduates by way of functional science and technology education-physics in particular. This paper therefore focused on the concepts of entrepreneurial education and physics, functional physics education as a means of developing entrepreneurial skills and achieving vision 2020, challenges and the way forward. This paper recommended among others that there should be regular power and energy supply and teaching and learning of science-physics in particular should be made in such a way that school leavers and graduates could be made to develop entrepreneurial skills so that they become self-employed on graduation.

Introduction

An anonymous Chinese poet who lived around 400 BC said in Okecha, (2008: 21-24) that:

If you are thinking a year ahead, sow seed. If you are thinking ten years ahead, plant a tree. If you are thinking one hundred years ahead, educate the people. By sowing seed you will harvest once. By planting a tree you will harvest ten fold. By educating the people you will harvest one hundred fold.

Education therefore is an agent of change and transformation. It transforms an individual or society from primitive way of life of the dark age to the modern society of today which is full of scientific and technological inventions. Nations rise and fall because of their level of educational attainment. Nigeria today is in the process of national reconstruction and education is the bedrock of national reconstruction. In recognition of the relevance of education for national development, the National Policy on Education (NPE, 2004:6) stated that “education is an instrument for national development; to this end, the formation of ideas, their integration for national

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development and the interaction of persons and ideas are all aspects of education". Infact, any country that toys with her education could be regarded as toying with the future of that country.

In order for Nigeria to achieve the laudable objectives of vision 2020, a functional science and technology/physics education in particular must be in place. This is because functional physics education would produce, advanced scientific, technological and cultural humanistic knowledge on the basis of which Nigeria would be transformed into a truly human society that satisfies adequately, the material, moral social and cultural needs of her people.

The study of physics is crucial for any nation that wants to maintain its lead among the community of nations. Infact the technological potentials of any nation could be more accurately gauged by the quality of its physics education, for without physics, the technological culture of her citizens cannot be firmly rooted (Ogunleye, 2001).

The Concepts of Entrepreneurial Education, Physics and Vision 2020

Entrepreneurial education is needed for the growth and development of any nation particularly in this period of economic down turn. This is because with entrepreneurial skills, an individual can venture into a business that could help him/her to earn a living and become self-employed. Entrepreneurial education is a process of equipping one with knowledge and skills which he/she could use to venture into business that could help he/she to become self-employed.

According to Iheonumekwu (2003), entrepreneurship education refers to the attitudes, skills and actions of an individual starting a new business. He sees one engaged in entrepreneurship as a creative person, a risk bearer, and one, who recognizes an opportunity, analyse it, makes decision, looks at necessary resources and comes out with programmes that will lead to the establishment of a new profit making enterprise. Entrepreneurship education therefore has to do with the development of the attitudes and skills of people in such a way as to help them fully realize their potentials, (Ozaji, 2009).

Physics on the other hand is the study of nature. It is the study of matter in relation to energy, (Usman, 2009). Edwin and Richard, (1999) regard physics as a branch of science which comes from a Greek word meaning knowledge of nature which attempts to describe the fundamental nature of the universe and how it works. In their own words, Young and Freeman, (2004) defined physics as an experimental science.

A vision is a clear mental picture of the future which in any case represents a significant improvement on the current state. Macmillan School Dictionary (2004) defined 'vision' as the ability to think about and plan for the future, using your

intelligence and imagination. Vision 2020 therefore is a detailed framework designed and planned by the Nigerian government aimed at stimulating and revolutionizing the economic growth of the country by the year 2020. In line with this, Abdullahi, (2009) defined vision 2020 as a comprehensive framework designed to stimulate economic growth in the country.

Functional Physics Education as a means of Developing Entrepreneurial Skills and Achieving Vision 2020 in Nigeria

The key goals of Nigeria vision 2020 are:

1. **Polity:** By 2020 the country will be peaceful, harmonious and have a stable democracy.
2. **Macro-economy:** A sound, stable and globally competitive economy with GDP of not less than \$900 billion and a per capital income of not less than \$4000 per annum.
3. **Infrastructure:** Adequate infrastructure services that support the full mobilization of all economic sectors.
4. **Education:** Modern and vibrant education system which provides for every Nigerian the opportunity and facility to achieve his/her maximum potential and provides the country with adequate and competent man power.
5. **Health:** A health sector that supports and sustains a life expectancy of not less than 70 years and reduces to the barest minimum, the burden of infectious diseases such as malaria, HIV/AIDS and other debilitating diseases.
6. **Agriculture:** A modern technologically enabled agricultural sector that fully exploits the vast agricultural resources of the country which will ensure national food security and contributes significantly to foreign exchange earnings.
7. **Manufacturing:** A vibrant and globally competitive manufacturing sector that contributes significantly to GDP with a manufacturing value not less than 40%.

These are laudable goals which if pursued with courage, would place Nigeria among the largest 20 world economies by 2020. These goals could be achieved by way of functional science and technology and physics education in particular. This is because the study of physics leads to scientific and technological development of any nation. The knowledge of physics is required for the study of engineering, medicine, agriculture and manufacturing which are among the goals of vision 2020. In line with this Usman (2009) opined that knowledge of physics is required for the study of engineering and some science related subjects. functional physics education would produce competent teachers, entrepreneurs, agriculturists and doctors which could serve as skilled man power that Nigeria needs for the achievement of vision 2020. In consonance with this, Abdullah and Ajoku, (2001), states that building the foundation for economic development of any nation will not be possible without building the indigenous capacity for achieving it.

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Also, with functional physics education in schools, learners could develop entrepreneurial skills in the areas of iron bending, repairs of electrical/electronic gadgets like radio and television through creative work and hence, become self-employed on graduation. The big question here is, is Nigeria prepared to achieve the vision 2020 objectives? The answer is capital “No” because Nigeria is still paying lip-service to her science and technology development. That is why Udongwo, (2010) opined that our enthusiastic voyage to the year 2020 and beyond is likely to remain bumpy and slow if the role of science and technology continues to be accorded a mere lip-service.

Challenges

Two major factors would likely hamper Nigeria’s efforts of achieving the vision 2020 project. These are:

- i. Internal factors and
 - ii. External factors
- (i) Internal Factors

1. Education Sector

One of the goals of Nigeria’s vision 2020 agenda is for the country to have a modern and vibrant education system which would provide every Nigerian the opportunity and facility to achieve his/her maximum potential and provide the country with adequate and competent manpower. Barely 10 years from now for Nigeria to achieve vision 2020 many Nigerian pupils are still receiving lessons under the tree, classrooms are in deplorable conditions, science laboratories are not well equipped where they exist, teaching resources are inadequate or even not available, inadequate competent science and technology teachers, poor salary packages for teachers, incessant strikes by teachers as a result of non-payment of benefits and so on. There exist in virtually every facet of Nigeria’s educational system an acute, even embarrassing, shortage of teaching resources and facilities and when available they are of low quality (Sulaiman, 2001).

In his own view Okecha, (2008) stressed that education is very poorly funded in Nigeria. He further argued that Nigeria has, up till, now refused to comply with UNESCO recommendation that at least 26% of every country’s annual budget be spent on education. She spends less than 7% of her budget on education. Botswana spends 19.0%, Swaziland, 24.6%; Lesotho, 17.0%; South Africa 25.8%, Cote d’Voire 30.0%, Burkina Faso 16.8%, Ghana 30.0%; Kenya 23.0%; Uganda 27.0%; Tunisia 17.0% and Morocco 17.7%. Other internal challenges include the deplorable condition of the economy and a falling educational system (Abdullahi, 2009).

2. Power and Energy Sector

Nigeria has to put more efforts in the area of power and energy supply. There is no scientific and technological development in the world that stands the test of time without regular and efficient power supply. The current situation of electricity

distribution and supply in Nigeria is one of the major problems facing the effective teaching and learning of Science Technology and Mathematics (STM) subjects, in schools Usman, (2009). There is no technological subject that can be offered anywhere and at any level without regular electricity supply Aderounmu, (2006). Nigerian government for the past eleven years pumped billions of dollars in the power sector but the desired result is yet to be achieved. There is no part of Nigeria today that experience 24 hours electricity supply. This also poses threat to vision 2020.

3. Implementation of Vision 2020 Economic Transformation Blue Print

Nigeria's vision 20:20 Economic Transformation blue print which seeks to position Nigerian within the 20 largest economies in the world by the year 2020 with a Gross Domestic Product (GDP) of not less than \$900 billion and a per capital income of over \$4,000, was approved by the country's decision-making Federal Executive Council (FEC) on 15/10/2009. Based on their approval, it means that implementation should commence. Nigeria infrastructural development in the past has failed to produce the desired result as a result of poor or lack of implementation.

4. Nigerian Politics/Governance

The current state of Nigerian politics and the way the country is governed is not encouraging. The politics of bitterness and rancor among our politicians which is widely spread across the country must be addressed for the country to achieve the vision 2020 agenda. For example, there are inter and intra party problems in most Nigerian states resulting in poor governance from the top to the lower levels of government. These would also pose a challenge for achieving vision 2020 in Nigeria.

5. Human Capital Development

The need for the development of human capital is paramount for the achievement of Nigeria's vision 2020 project. According to the National Forum for Policy Development NFPD, (2007) the literacy quotient shows that the ratio of engineers and scientists in China and Japan for instance is over 4,500, while in Nigeria it is about 150. This blue print is an indication that Nigeria would face the challenge of human capital development for the achievement of vision 2020. No wonder Professor Wole Soyinka in Abdullahi, (2009) lamented that the development of human capital will be the greatest challenge facing vision 2020 and the nation. Nigeria ranked 154 in 2009 among 182 countries in UN's human development index.

6. Security

The current security situation in the country is worrisome. No nation would develop under an atmosphere of insecurity. For example there is the problem of ethnic and religious crises in some northern states, kidnapping/abduction in the south-east and armed robbery. These problems would deter foreign investors from investing in the country which would consequently affect the Nigerian vision 2020.

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7. Corruption

Another major problem that would deter Nigeria from achieving vision 2020 agenda is the issue of corruption. Corruption has pervaded almost every sector of the Nigerian economy. This brings us to the situation where the rich are becoming richer while the poor are becoming poorer; hence, no nation would develop under this ugly trend of high corruption. Corruption if not properly tackled, would pose a great challenge for the Nigeria's vision 2020.

(ii) External Factors

1. Globalization

The issue of globalization would be an external challenge for Nigeria's attainment of vision 2020. This is because globalization has both economic and political positive and negative effects on a nation like Nigeria. Globalization here means how Nigeria would be able to integrate both its economic, political and technological ideologies into the global economic system. Globalization is the integration of, economic, cultural, financial, ecological and technological systems into the global economy (Abdullahi, 2009). In this situation Nigeria needs to do everything possible to compete and expand her resources into the global mainstream so that vision 2020 could be achieved.

2. Foreign Policies

Nigerian vision 2020 would likely have a set back if Nigerian foreign policies are not adjusted to suit international standards. Our foreign policies should give room for easy transportation of goods and services within the African sub-region and the world at large. One of the Nigeria foreign policy objectives declared in 1976 is the promotion of, and defence of justice and respect for human dignity, especially the dignity of a black man. Nigeria is beginning to lose this objective in the African sub-region and other parts of the world as many Nigerians were recently sentenced to death in Libya and China. This calls for Nigeria to improve her foreign relations if she wants to achieve the vision 2020 objectives.

Strategies/Way Forward

The following strategies would assist Nigeria to achieve the laudable objectives of vision 2020:

1. There should be more vibrant and functional science and technology education system that will be geared towards self-reliance.
2. There should be an efficient and regular power and energy supply in the country. This would go a long way in boosting the economy of the country, hence achieving vision 2020.
3. Nigerian government should involve people who are God fearing in the vision 2020 committee. This would go a long way in ensuring that monies released would be used judiciously.

4. Nigeria should adopt China's policy on corruption charges on people found wanting. China's policy here means applying death sentence penalties on people found to be guilty of various corrupt offences.
5. Nigerian government should create conducive atmosphere for foreign investors to come in. By so doing, it would help in reducing the problem of unemployment in the country and hence stimulate national development.
6. Entrepreneurial education should be introduced in all the sectors of Nigerian education system. This will go a long way in providing job opportunities for the young school leavers and graduates.

Conclusion

The yearning by Nigeria to become one of the world 20 largest economies by the year 2020 would be realizable if governments at all levels make science and technology education a priority. A functional education system that would provide opportunities for entrepreneurial skills acquisition among her teeming school leavers and graduates is also paramount for the achievement of vision 2020. The issue of power and energy should also be given utmost attention because no science and technology driven economy would stand the test of time without adequate and efficient power supply. Nigeria should also pursue all the millennium development goals (MDG's) with vigour as doing this would likely put Nigeria among the 20 largest economies by the year 2020.

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