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Achieving National Stability and Economic Survival in Nigeria through Technical and Vocational Education

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Abstract
Despite the differences in the educational systems amongst the nations of the world, their aims have always remained the same – to transmit from one generation to the other, the accumulated wisdom and knowledge of the society; to prepare the citizens for future membership of the society and their active participation in its maintenance and development. Recent developments in science and technology, global economic crises, terrorism and insecurity have made the nations to lay much emphasis on the provision of technical and vocational education for their citizens to overcome these challenges. This paper examines the relevance of technical and vocational education in the development (national stability and economic survival) of a developing nation like Nigeria; the problems facing the provision of technical and vocational education in Nigeria; and what should be done to overcome these problems to make the country one of the developed nations of the world.
Key words: technical and vocational education; national stability, economic survival

Introduction
One of Africa's most respected statesmen – Julius Nyerere of Tanzania (1968), while speaking on the importance of education to the development and growth of his country Tanzania said:

> The educational system in different kinds of societies in the world have been and are very different in organization and content. They are different because the societies providing them are different, and because of education be it formal or informal has a purpose. The purpose is to transmit from one generation to the next the accumulated wisdom and knowledge of the society and to prepare the young people for the future membership of the society and their active participation in its maintenance or development …. Wherever education fails in any of these fields, then the society falters in its progress or there is social unrest as people find that their education has prepared them for a future which is not open to them….

To make sure that the education of Nigerians does not prepare Nigerians for a future which is not open to them, there is now a great emphasis on technical and vocational education especially in the science and technology which will help the citizens to develop to their fullest, their potentialities and to contribute to the social and economic development and stability of the nation.

Therefore the governments in Nigeria have introduced several measures and courses such as information technology and entrepreneural development into the students study curriculum. Much emphasis is also laid on the acquisition of industrial work experiences for

the students in training to make them proficient in their chosen careers on graduation.Therefore,it is the purpose of this paper to examine the relevance of technical education in national stability and economic survival of Nigeria.

Statement of the Problem

The need for nations to be self reliant through the developmeent and expansion of their industrial bases and production has led countries to lay much emphasis on technical education. To this end, the Nigerian government has established and is still establishing specialised academic institutions such as polytechnics, monotechnics; research institutes, technical and agricultural universities all over the country to provide the right education to its citizens. This study critically examinees: What is technical and vocational education; national stability and economic survival? What are the problems facing technical and vocational education in Nigeria? And how can these problems be eradicated to make technical and vocational education contribute to national stability and economic survival of the nation.

Technical and Vocational Education

According to UNESCO (2002) technical and vocationla education is a comprehensive term referring to those aspects of educational process involving in addition to general education; the study of technologies and related sciences; and the acquisition of skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic and social life. This definition goes on to see technical and vocational education as:

1. An integral part of general education;
2. A means of preparing for occupational fields and for effective participation in the world of work;
3. An aspect of life-long learning and a preparation for responsible leadership;
4. An instrument for promoting environmentally sound sustainable development; and
5. A method for facilitating poverty alleviation (or eradication).

The Purposes of Technical and Vocational Education

In this era of globalization and development in information technology, emphasis is on technical and vocational education if the nation and her citizens are to benefit from the processes. Today, the emphasis is on the production of self-reliant citizens – men and women who at the end of their education should be able to put into use the skills they have acquired while at school and on industrial training. There is the emphasis on linking the educational institutions with the industry because this enables the individuals to fit into the wider society on graduation, either as individual workers in paid employment or as self-employed persons; and as functional members of the political society.

Technical and vocational education has the purpose of making the citizens active participants in the nation's political processes, especially in engendering and consolidation of democracy, rule of law, responsible and responsive governance, and accountable leadership. Its relevance is to make the individuals aware of changes in their environments, especially as a result of developments in science and technology; and to be able to exploit and adapt to the changes positively. Its purpose is to empower the people economically, socially, and politically so that they will be able to participate in the making and implementation of policies affecting their lives or well-being. Its purpose is to make the

citizens and the nation to be self-reliant in the production, distribution and consumption of goods and services.

National Stability

Social stability for our purpose shall be seen as the same thing as political stability or a stable-democratic order. A stable democratic order is the only social order that guarantees individual's freedom, development and peace.

The concept of democracy has as many definitions as there are writers on it. Today, democracy is defined as a system of government by the elected representative of all the peoples, groups and interests within the society (Akwara, 1996). According to Christensen et. al. (1972), it is a system of government in which the citizenry voluntarily consent to, and are major participants in their governments. To Karl Popper (1950, 1988), democracy is not emphatically a rule of the people because it is the government that rules, but a rule of law that postulates the bloodless election and dismissal of the government or the political office holders by a majority votes. If the majority has mistakenly elected a dictatorship into power, democracy also implies that the people should have the ability to remove such government from power through the same electoral process that brought them to power.

It is only when a country can produce its own goods and services through the provision of the right educational training; has independence in making and executing its own decisions and national policies; makes rational use of its scarce material and manpower resources that it can achieve national economic and political stability and development.

Economic Survival

Economic survival means the same thing as "self-reliance". The concept has also been used by scholars and statesmen to mean different things at different times. It means health confidence in ones' ability; and the right and ability of a person or group to set its own goals and realize them through its own efforts, using its own resources and technology. (Akwara, 1998; Ikeokwu, 1996).

It relates to the autonomy of a person in decision-making and the will to build and use capacity for autonomous decision-making and implementation in all aspects of national development. The nature, content, direction and rate of the development has to be defined and executed with reference to the needs of the people and their environment. Self-reliance therefore calls for a clear conception of ones needs and methods of satisfying them without being subjected to undue control or constraints from external bodies. It means the ability to fashion out things the way a person or group wants them (Ikeokwu, 1996).

The Nigerian government emphasizes self-reliance as part of its national ethics due to over-dependence of the country on imported goods and services at the expense of locally produced goods and services. Developments in science and technology in the west (Europe and America) have made our peoples to start nursing the desire for the things that cannot be produced from our immediate environment using locally available materials and skills. It has also created new consumption pattern alien to our culture. Economic survival therefore implies the adaptation of alien technology to our immediate needs and environment. This can only be made possible through technical and vocational education. As Akwara (1998) noted, economic survival implis self-reliance, and self -reliance is not the same thing as self-sufficiency for no one nation or individual is self-sufficient. We need our neighbors''

technologies, goods and services as much as they need ours to complement ours, but not as substitutes ours entirely.

The Relationship between Technical and Vocational Education, National Stability and Economic Survival

Anyone who is trained in technical and vocational education is self-reliant. Economic survival implies being self-reliant. A self-reliant nation as Ikeokwu (1996) and Akwara (1998) pointed out is one that is capable of doing the followings things:

1. Producing her basic needs using as much as possible locally sourced raw materials and technology.
2. A nation that is capable of making the people participate actively in the politics and economy of the nation (only a self-reliant person can participate actively in the political and economic process of his country; and make meaningful contribution to the development of his country).
3. A self reliant nation would make rationale use of her available national human and material resources (maximization of production and utility, using minimal resources available to one).
4. A self-reliant nation would do away with indolence among the citizenry because self-reliance calls for certainty and originality in thought and production because it is ideas that lead to development.
5. A self-reliant nation would adapt available technology (both local and foreign) to local needs and purposes because adaptation is necessary for continuity and survival within any given environment.
6. A self-reliant nation would maintain the security of the nation at all times. Every nation needs to be self-reliant in its production and deployment of defense capabilities and personnel at all times.

Technical and vocational education therefore promotes self-reliance. Self-reliance promotes human capital development (entrepreneurship ability) or economic survival which in turn promotes national stability.Self-reliance promotes competition among producers, which in turn produces improved technology. Improvements in technology lead to lower costs of production and increase in profits, economic growth, modernization, affluence and or economic development.

As entrepreneurs make more profits, they invest the profits into production by building new plants or by expanding the existing ones. By so doing, they create new jobs for the unemployed (who have the requisite skills), produce more goods and services for the economy, make more profits, re-invest and create more jobs. As the process is repeated, more people in the society are provided with jobs, are paid handsomely to improve their material well-being and social conditions. This helps to reduce poverty and economic inequality in the society. And once the society is affluent, democratization becomes easier and possible (Mule, 1998; Saint Paul and Verdier, 1992; Simpson, 1990; Schmidt, 1996; Mclean, 1994; Prezeworski, 1991; Nelson, 1994 and Lipset, 1960).

As Lipset (1960) observed, the more affluent a society is, the more it invest on education of the peoples. And the more educated a population is the more it demands for the democratization of the political process of the nation because the education would have inculcated the value orientations necessary for the development and sustenance of democracy once it has been established. We can therefore see that technical and vocational

education promotes human capital (achievement, motivation and entrepreneurship ability) by making the recipients to be self-reliant.

Entrepreneurship promotes technological development which in turn promotes economic development and modernization. Economic development and modernization will in turn promote democracy. Illiteracy creates poverty which manifests itself in the income inequality among peoples. This economic inequality is being aggravated by the transfer of skill-enhancing technologies from the developed nations to the developing nations. Those who have the skills in the developing nations have enhanced wages and income; while those without the skills have reduced wages. And to eliminate the inequality, the unskilled must acquire the needed skills through technical and vocational education.

But the ability of the unskilled to acquire the skill is a function of two factors:

(1) The development of the capital market (economic development)
(2) The availability of educational institutions and the appropriate training programs.

As it stands today in Nigeria, only very few persons have access to the capital and institutional training and are able to exploit the opportunities provided by the globalization process and developments in information technology. All others are trapped in low-skill, low wage jobs due to the globalization process. We can therefore say that the globalization process rewards only a certain group of people in Nigeria and creates economic inequality. And to eradicate this inequality or poverty among the people, the government now lays much emphasis on the education of the citizens in technical and vocational skills.

Economic inequality is bad for the nation's economic growth and democracy because it has led to a great level of national and economic instability, riots, strikes, violence, assassinations and crimes rampant in the country today. The instability makes people to invest less in the economy than they otherwise would have done. And with less investment, there is less growth, with less growth, there is less chance for the sustenance of a nascent democracy. Inequality creates frustration, anger, violence and crime. People take to the streets because the ballot boxes are no longer effective to bring about desired changes. Then, the desired changes must come about through sound technical and vocational education made available to all, irrespective of age, sex, religion, ethnic origin or geographical region.

How Technical and Vocational Educational (Science and Technology) Can Contribute to National Stability and Economic Survival in Nigeria

As has been noted earlier in this paper, vocational and technical education promotes self-reliance, self-reliance promotes human capital, human capital promotes technological development, technology promotes economic growth, economic growth promotes economic development (economic survival) and democracy (national stability). But technical and vocational education cannot do these unless the education is in the sciences and technologies, and not only in the arts and social sciences. That is why the government of Nigeria lays much emphasis on the education of Nigerians on the sciences and technologies, and, has stipulated an admission policy of 70% for the sciences and technologies and 30% for the arts and the social sciences in our higher institutions of learning. And for the sciences and technologies to be able to make Nigerians self-reliant, science and technology have to be "domesticated" (Egila, 2003).

By domestication, Egila (2003) implies to get people accustomed to the application of sciences and scientific researches; technologies and technological development for the

service and development of man. Technology in this context implies purposeful human activity of designing and making products ranging from such simple objects as toys to complex objects as computers. It also means a special kind of knowledge which technologists use when solving practical problems in the society (Egila, 2003).

The Asian Tigers or the developing nations of South-East Asia – Korea, Singapore, Indonesia, Malaysia, China Taipei, China Hong-Kong are able to develop economically because they have been able to domesticate technology (both foreign and native) for their national development. And every domestication is adjudged successful if it takes into consideration efficiency in performance, reliability, durability, cost of production, ecological impact and end-of-life disposability and of course, the culture of the people (Egila, 2003). This is what really makes Japanese products very unique. Japanese products are characterized by what Egila (2003) has termed "complex simplicity" – the products are small and precision built; light weight yet robust, energy-fungal, and miniaturized with equality – all these attributes express the Japanese culture.

If we in Nigeria are to domesticate technology for economic survival and national stability, we must relate it to the Nigerian culture. In this way, it becomes appropriate – meet our needs, uses our resources, fits our environment and lifestyles. The past four decades have seen emphasis by the various governments in Nigeria on the development of science and technology. And they have taken diverse steps towards the achievement of this desire; the most manifest being the establishment of the Ajaokuta Steel Complex by the Federal Government and other steel complexes by State Governments; the establishment of Federal Polytechnics; the National Board for Technical Education,; Federal Universities of Technology; Federal Technical Colleges of Education; the National Institute of Chemical Technology; the Federal Institute of Industrial Research; the Product Development Institute; Raw Materials Research and Development Council and a host of other research institutes all over the country.

For the domestication of technology to be successful in Nigeria, Egila (2003) is also of the view that there is the need for:

(a) researches by the institutes and the industries;
(b) co-ordination of research activities;
(c) research and development;
(d) commercialization of research findings; and
(e) incentives to scientists and students.

(a) Researches

No nation can achieve any technological advancement if it does not invest in researches and in the development of new products – this is where the research institutes are very important. They have to identify the nation's needs in terms of upgrading indigenous technologies and their traditional methods of production and preservation, especially for staple food items whose essential body-building properties are destroyed and wasted in the attempts to preserve them; and most of which are exported at prices which are too low and unrewarding, in comparison with what it costs to import the same materials back into the country in processed form.

(b) Co-ordination of Research Activities

If we must domestic technology, attempts must be made to harness the efforts of the various research institutes and institutions of higher learning. The government must set up multi-disciplinary result-oriented units that would co-ordinate research activities in the country. This unit would assist the Ministry of Science and Technology in its efforts to bringing into focus the nation's capabilities to transfer its resources into goods and services for better quality of life for the people. This unit would serve as a clearing house for research and development in addition to providing sources of technical and financial support for research and development (Adeyeri, 1989). In other words, the governments at all levels must encourage and support researches.

(c) Commercialization of Research Findings

The commercialization of research findings as Egila (2003) sees it amounts to bridging the gap between the industry and the academic institutions and research institutions. The recommended research and development clearing house should be involved in bridging this gap. Our local business-men and chambers of commerce and the Manufacturing Association of Nigeria (MAN) should be made aware of research findings otherwise the industrial sector would remain unaware and underdeveloped in spite of innovations made in science and technology. Furthermore, industries should be encouraged to spend a portion of their profit in researches and development of products that would serve as the basis for raw material and industrial development in the country. This can be enhanced through regular conferences and seminars sponsored by the proposed Research and Development clearing house in conjunction with the educational institutions and research institutes in the country. The institution can jointly commercialize their products through the establishment of Research and Development unit and the incorporation of a Technology Research Limited (a business venture) to market their research findings. This will create entrepreneurial drive or zeal in the institutes and institutions because the nation cannot raise scientists and technologists with entrepreneur capability if we are not entrepreneur ourselves.

The poor funding of our academic and research institutions has today called for these institutions to seek out ways to generate most of the funds that they need and make the best use of their intellectual assets. They must encourage these intellectuals to be more involved in research by strengthening them in conjunction with the industry; by professionally patenting and exploiting their increasing range of inventions and developments. Due to the poor funding of institutions by the government, most institutions lack funds to embark upon ventures of these sorts. The National Science and Technology Development Agency should be involved in the management of innovative projects such that the technology, financial backing, production capacity and business plans are all developed at the same time (Essien, 1986).

(d) Incentive to Scientists and Students

If Nigeria is to be successful in the domestication of technology, the training of personnel in the relevant fields of science and technology must be pursued vigorously. This will start by making our students to be interested in the sciences at very early stages in their education. They lost interest in the sciences because they cannot see our scientists as role-models to emulate. Scientists in this country are neglected and unrewarded for their efforts. No student would want to study physics. Students want to be bankers and footballers. Not even teachers

and lecturers. This therefore calls for the motivation of scientists and technologists in the country so that their jobs would be appealing and appreciated by the younger generations who would replace them when they retire.

(e) The Role of Educational Institutions

It is a fact in Nigeria today that academic knowledge is no longer a guarantee for a good job. The rising level of unemployment in the country today is a case in point. This now calls for a mix of practice with theory in the education of the citizens especially in science and technology. And for the academic institutions to do this, they must be properly equipped and funded.

There is also the urgent need for the development of new science and technology curriculum that emphasizes practical application as local needs dictate. This will help in the production of self-reliant Nigeria graduates. This is very essential because science education as it is today in our schools is stereotyped, teacher-centered, examination tailored, and worse still, misunderstood by the teachers themselves, most of whom were ill-prepared and thrown into the schools, and are expected as Obioha (1987) puts it, "to make meat out of saw dust"

(f) Cultural Re-orientation

Education in science and technology as Eyibe (1987) pointed out should not be seen as being restricted to direct application of knowledge only, but equally a process of enabling cultural transmission and change to take place. Our acquisition of technology must take care of our kind of science, so that we can attain a better life for our people. This means that we must mobilize local standards, just like the Japanese, for appropriate technology suited for our requirement (Gomwalk, 1985). This can be achieved if we inculcate the right attitudes, discipline, honesty, patriotism and technicality in our products. Honesty has been underlined because for some time now, our markets have been flooded with fake and life threatening products, especially pharmaceutical products. Thank God that the war against sub-standard and fake products by the Standard Organization of Nigeria (SON) and the National Agency For Drug Administration and Control (NAFDAC) is yielding results. It is common today to find that many products in the markets carry labels of products not contained in their containers.

Science teaches conscious, logical and systematic ways of making observations and therefore stimulates critical thinking (Nwafor, 1975). This approach facilitates the production of people who can be creative and so are capable of making new discoveries. Unfortunately, our cultural orientation does not allow full realization of this all important statement. For example, children are not allowed to develop independent cultural thinking due to our cultural orientation. And any challenge of the status-quo by the youths is viewed in bad faith. This does not augur well for the development of science and technology in Nigeria.

(g) Discipline and Patriotism

Patriotism means love for one's country. A patriot is one who truly loves his country and selflessly serves his country. And discipline according to Achebe (1983) means:

(a) Control gained by enforcing obedience to natural laws and order in natural life.
(b) Orderly or prescribed conduct or pattern of behavior expected of persons in given positions and offices in society.

(c) The ability to submit one's desires and actions to the restraint of orderly social conduct in recognition of the rights of others in society.

Patriotic and disciplined Nigerians will not mix used engine oil with new one in order to amass wealth, neither would they sell a mixture of kerosene and petrol to households as kerosene. An undisciplined environment does not encourage hard work and most of us parents are not showing good examples to our young ones in our conducts. We need to give our children a pleasant image of hard work by working hard, by being honest in our daily pursuits, by loving our fellow Nigerians through the production of safe products. Finally, we must reward honesty, discipline and hard work to achieve the domestication of technology for economic survival and national stability.

Summary and Conclusion

This paper has examined in details the topic under discussion and defined the concepts: Technical and Vocational Education, National Stability, and Economic Survival. In doing this, it equated national stability with democracy, and economic survival with economic development and modernization. It has also examined the relationship between the concepts "education", "democracy" and "development", putting forward how education, especially technical and vocational education can lead to economic development and modernization, and then, to democracy by creating a self-reliant society or nation (though this may seem like the chicken and egg question, we only know that the cock is the father of the egg and the chick, as an unfertilized egg will never hatch a chick). So education is at the center of all development be it economic, political, cultural, scientific, and or, technological; and for education to be able to perform this pivotal role, it has to be broad-based.

A broad-based education, according to UNESCO (2002), is one that is capable of:

(a) Being an integral part of everyone's general education in the form of initiation to technology...., and standards for responsible citizenship;
(b) May be freely and positively chosen as the means by which people develop talents; interests and skills leading to an occupation in various sectors or to further education;
(c) Allows access to other aspects and areas of education at all levels including institutions of higher learning by being grounded in solid general education;
(d) Allows transfer from one field to another within technical and vocational Education;
(g) Is available to people with disabilities and to socially and economically disadvantage groups such as immigrants, refugees, minorities, demobilized soldiers in post-conflict situations, and underprivileged and marginalized youths, in special forms adapted to their needs in order to integrate to them more easily into the society.

When technical and vocational education is tailored to the needs and aspirations of the nation and the citizens, UNESCO (2002) observed that it:

1. permits the harmonious development of personality and character, and foster spiritual and human values; the capacity for understanding judgment, critical thinking and self-expression;
2. prepares the individual for life long learning by developing the necessary mental tools, technical and entrepreneurial skills and attitudes;

3. develops capacities for decision-making and the qualities necessary for active and intelligent participation, term-work and leadership at work and in the community as a whole;
4. enables an individual to cope with the rapid advances in information and communication technology;

Technical and vocational education therefore, leads to national stability and economic survival of a nation by making its recipients self-reliant persons and the nation a self-reliant society. Technical and vocational education can only do these if science and technology has been domesticated in the country through researches, co-ordination of research efforts, commercialization of research findings, giving incentives to scientists and technologists, proper funding of our educational and research institutions, cultural re-orientation of the people, discipline and patriotism.

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