

# THE PLACE OF TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) IN SCIENCE, TECHNOLOGY AND INNOVATION (STI) POLICY: THE NEED FOR POLICY REFORMATION IN NIGERIA

**Chukwuemeka B. Okafor**

*University of Nigeria, Nsukka, Nigeria*

**Samson O. Chukwuedo**

*University of Benin, Benin City, Nigeria*

## Abstract

*Educational policy is a fundamental document that guides the smooth running of any educational programme. If not properly planned, prepared and implemented, such education programme can be run haphazardly without any beneficial outcome. Any policy document that cannot be applied in any educational programme may be described as inadequate. A science or technology based policy should not consider only the advanced level technology in Nigeria but also integrate the lower or indigenous level technology; hence STI policy should not neglect the TVET indigenous technologies since TVET is seen as programme to promote skill acquisition for indigenous and advanced technology in any nation. This study, therefore, investigated the place of TVET programmes in STI policy in Nigeria. The study determined that the place of TVET in STI policy may be described as illusion, mirage or not comprehensive to the public because the policy formulation and implementation appears to neglect the adoption of low level indigenous TVET technologies in Nigeria which an average Nigerian benefits from. Theories and philosophical dicta were presented with respect to policy advocacy for TVET programmes in Nigeria. The place of TVET in STI policy is undefined in Nigeria, hence the need to properly integrate TVET section in STI policy or formulate an independent TVET policy. It is, therefore, recommended that applicable societal values in technology should be considered in STI policy for the realization of the Nigerian vision 20:2020. The STI policy making and implementation process should embrace 90% of the experts in the fields of science, technology, technical and engineering education, else the need for alternative policy for TVET programmes in Nigeria.*

**Key words:** *technical and vocational education and training, science, technology and innovation Policy, indigenous technology, policy reform.*

## Introduction

Every human endeavor is expected to be guided by certain procedures for effective and efficient achievement of predefined goals and objectives. This means that the lifeline and activities of any society, organisation and group of individuals can be found in a policy statement. The importance of policy making and implementation in every sector cannot be underestimated since it entails goals translated into a plan or programme. In conceptualizing



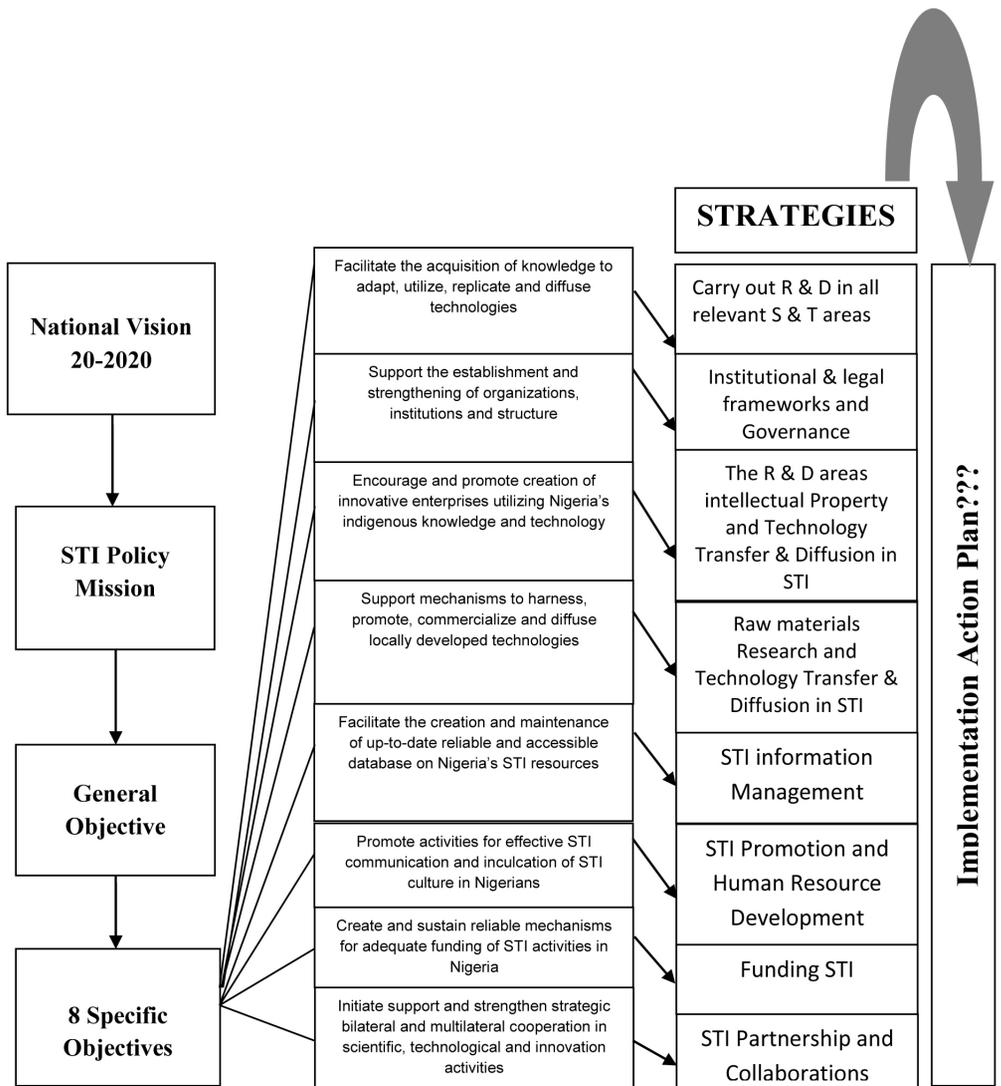
policy, Edem (2011) stated that it is the thinking at the high level of abstraction which expresses goals and the means of achieving them, in other words, policy formulation is a decision making towards the achievement of defined objectives.

Educational policy evolves from practices and procedures followed in any organisation or institution over a period of time (Toby, 2000). In similar perspective, Jekins, cited in Ogbonnaya (2010), presents policy as a set of interrelated decisions by a political actor or a group of actors concerning the selection of goals and the means of achieving them within a specific situation where those decisions would, in principle be within the powers of those actors to achieve, in other words, policy is formulated and implemented by political or government personnels who stipulate the policy. In line with this, the question of what guidelines are employed in policy becomes necessary. Jones, as cited in Ogbonnaya (2010), identifies the guidelines to include policy problem identification, programme development, implementation, evaluation and termination while Ogwo (2009) enlisted the policy cycle as agenda setting and policy formulation, adoption, implementation, impact, evaluation/assessment and reformation.

As a country with different sectors, different policies guide the various sectors in Nigeria. The different policies that guide the sectors are national policy on education (NPE), economic policy, defense and foreign policy, social policy, ICT policy, agricultural policy, industrial policy, science and technology innovation (STI) policy, just to mention but a few (Ogwo, 2009; Osinem, 2012). An investigation into the various policies in Nigeria will reveal that neither technology nor science has separate policy. This means that technical and vocational education and training (TVET), a technology based programme is submerged into one or more of the policies, and this may be found in NPE and STI policies but STI policy seems more specific to TVET, hence the need for this paper to critically x-ray the place of TVET in STI policy in Nigeria.

Since independence in Nigeria, various administrations have shown interest and appreciation in the roles of science and technology in socio-economic development. This may be seen from the utilization rate permissible for products or goods made from science and technology. The first National Science and Technology (S&T) policy in Nigeria was propounded in 1986 (Federal Republic of Nigeria, FRN, 2011). The S&T policy was design to create harmony in the pursuit of knowledge about the environment through research and development (R&D). The policy has undergone review in 1997, 2003 and 2005 as a result of the lapses identified in the document (FRN, 2011). In the realization of the Nigerian vision 20:2020, another improved STI policy document was produced in 2011, however additional review was made in 2012 where the policy is termed the New STI policy (Federal Ministry of Science and Technology, FMST, 2012; National Centre for Technology Management, NACETEM, 2014).

Generally, the initial and the new STI policies have similar vision, mission, objectives and provisions, of which the explanation of the totality of the policy is beyond the scope of this paper; however an overview of the STI policy is presented in Figure 1.



**Figure 1: Overview of the New STI Policy (source: NACETEM, 2014).**

Figure 1 revealed that the new STI policy was derived from the vision 20:2020 intension. The policy has general and specific objectives. The strategies towards achieving the objectives are shown but the implementation of the policy is questionable. From the information provided in the overview, the researchers therefore ask; what place does STI policy holds for TVET programmes in Nigeria?

TVET is a technological based formal and non-formal education programme meant to equip the recipients with the practical skills needed in business, agriculture, industries and other domestic and indigenous technologies. According to TVET Working Group (2012) TVET is an umbrella term used to describe the education that prepares the individual to be gainfully employed in technological related occupation. It is the holistic inclusive and



responsive approach, through either formal or non-formal delivery, that develops quality-assured, worthwhile, employable and lifelong skills, values and attitudes for the formal and informal sectors. The FRN (2004) defined TVET as a comprehensive term referring to those aspects of education process involving, in addition to general education, the study of technology and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economy and social life. This definition was supported by Osuala (2004) and Ekpenyong (2011) who affirmed that TVET is a technological based programme and employs scientific applications for technological advancement.

TVET programmes in Nigeria are obtainable at the formal and non-formal educational institutions such as technical colleges, colleges of education, polytechnics, universities, NDE schemes, NABTEB certificate programmes. The trades obtainable in these programmes are common in the formal and non-formal TVET institutions, and such trades include electrical technology, building technology, agricultural studies, automobile technology, electronic technology, clothing and textile technology, to mention but a few (FRN, 2004; Osuala, 2004; Toby, 2000; Ekpenyong, 2011). These trades are no doubt technology based. How then has the STI policy made provision for these trades in TVET for the realization of vision 20:2020? Apparently, if there is any provision it may not be realistic.

Deriving from the conceptualization of TVET, it is evident that TVET programmes are technologically based and should be guided by technology based policy, which STI policy should have been able, but the policy document seems ambiguous, over ambitious and vague because of the complexity of science and technology fields of studies. In Nigeria, science based programmes are obtainable in areas of studies such as Mathematics, Chemistry, Physics, Environmental Biology and the likes while technology based programmes are obtainable in areas of studies such as engineering and allied technology programmes, such as vocational and technical education. It is therefore imperative to ask in this paper, where does TVET belong. Can a single policy serve science and technology? Is it necessary to split STI policy into two separate and independent policies? These are part of the questions that form the basis for this paper.

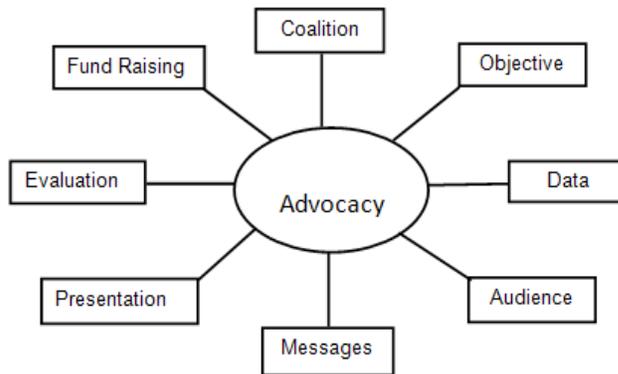
The dynamism in technological advancement has also proved that the fields of engineering and technology in Nigeria need improvement and this must start from the low level indigenous technology to the advanced levels technology. This can be achieved if the Federal Government of Nigeria ensures functional policy. One field of study that is responsible for such simple complex technological growth in Nigeria is TVET. The TVET programmes in Nigeria should be guided with functional policy in order to address the growth of indigenous technology from simple to complex. In addressing such technological advancement the policy must address fundamental areas in TVET. It is, therefore, imperative to ask whether STI policy has such provision for TVET programmes in Nigeria. Can STI policy provision help improve TVET based technological programmes? These are also the problems upon which this study is based.

The purpose of this analysis, therefore, was to x-ray the extent STI policy has integrated TVET programmes and helped in achieving the objectives of TVET programmes for industrial development through the provisions of the policy in Nigeria. This was achieved through analysis of the STI policy document and other related literature.

## Theoretical Framework

The theories upon which this study is based are the model of policy advocacy and the six theories of policy change.

**1. Policy Advocacy Model** – adapted from Ogwo (2009). While specific policy advocacy techniques and strategies vary, there are basic elements of advocacy which serve as building blocks for effective policy advocacy. Eight basic elements form the advocacy model and these are objective, coalition, data, fund raising, evaluation, message, presentation and audience. These elements are interactively combined to achieve a functional policy advocacy. The elements are no doubt the considerations for policy actors in order to make and implement a good policy, such as STI which should be able to integrate TVET programmes in totality. Each of the elements of the model is meant to give obvious light of the strength and weakness of the STI policy provision towards TVET programmes and development. This model helps to determine the decision for either policy restructuring or development of a new policy. The model is presented in figure 2.



**Figure 2: Basis Elements of Policy Advocacy (Source: Ogwo, 2009).**

The eight elements of the model must not be used in the order it is presented. Coalition is the element that indicates the number of individuals in support of a particular policy. In terms of TVET, it is believed that many Nigerians are in support of reformation or change of STI since the realization of vision 20:2020 is apparently not at the door of the public. The objective element shows the goal of a policy. The STI policy goals and objectives toward TVET are apparently vague and ambiguous. In the case of audience element, the STI policy does not seem to integrate the right people, authority for the policy formulation and implementation (NACETEM, 2014). Summarily, all the elements of the policy advocacy model demonstrate similar characteristics about the strength and weakness of STI policy TVET for programmes in Nigeria.

**2. The Six Theories of Policy Change** – adapted from Ramalingam (2011). There are two broad classifications of the six theories which policy actors should select separately or in totality for policy formulation and implementation. These are namely global theories and theories relating to strategies of tactics. The summary of the theories are presented in Table 1.



**Table 1. Summary of the Six Theories of Policy Change and/or Advocacy.**

	<b>Theory (Key Authors)</b>	<b>Proposition of the Theories</b>	<b>How Change Happens</b>	<b>This theory may be useful when:</b>
<b>Global Theories</b>	<b>1. “Large Leaps” or Punctuated Equilibrium Theory</b> (Baumgartner, Jones)	When conditions are right changes can happen in sudden large bursts that represent significant departure from the past.	Like seismic evolutionary shifts, significant changes in policy and institutions can occur when the right conditions are in place.	<ul style="list-style-type: none"> <li>• Large-scale policy change is the primary goal</li> <li>• Strong capacity for media advocacy exists</li> </ul>
	<b>2. “Coalition” Theory or Advocacy Coalition Framework</b> (Sabatier, Jenkins-Smith)	Individuals have core beliefs about policy areas, including problem’s seriousness and causes.	Policy change happens through coordinated activity among a range of individuals with the same core policy beliefs.	<ul style="list-style-type: none"> <li>• A sympathetic administration is in office</li> <li>• A strong group of allies with a common goal is in place or can be formed</li> </ul>
	<b>3. “Policy Windows” or Agenda Setting</b> (Kingdon)	Some issues get attention in the policy and others do not.	Policy can be changed during a window of opportunity when advocates successfully connect two or more components of the policy process: the way a problem is defined, the policy solution to the problem or the political climate surrounding their issues.	<ul style="list-style-type: none"> <li>• Multiple policy streams can be addressed simultaneously (problem definition, policy solutions and/ or policy climate)</li> <li>• Internal capacity exists to create, identify, and act on policy windows</li> </ul>

Theory related to Strategies or Tactics	4. <b>“Messaging and Frameworks” or Prospect Theory</b> (Tversky & Kahneman)	Rational decision are made by weighing different options’ costs and benefits and then choosing the most beneficial.	Individuals’ policy preferences or willingness to accept them will vary depending on how options are framed or presented.	<ul style="list-style-type: none"> <li>• The issue needs to be redefined as part of a larger campaign or effort</li> <li>• A key focus of the work is on increasing awareness, agreement on problem definition, or an issue’s salience</li> </ul>
	5. <b>“Power Politics” or Power Elites Theory</b> (C. Wright Mills, Domhoff)	The power to influence policy is concentrated in the hands of few.	Policy change is made by working directly with those with power to make decisions or influence decision making.	<ul style="list-style-type: none"> <li>• One or more key allies is in place</li> <li>• The focus is on incremental policy change (e.g., administrative or rule changes)</li> </ul>
	6. <b>“Grassroots” or Community Organizing Theory</b> (Alinsky, Biklen)	Power is changeable and dynamic, not something held exclusively by elites.	Policy change is made through collective action by members of the community who work on changing problems affecting their lives.	<ul style="list-style-type: none"> <li>• A distinct group of individuals is directly affected by an issue</li> <li>• The advocacy organization can and is willing to play a “convener” or “capacity-builder” role rather than the “driver” role</li> </ul>

Source: Ramalingam (2011) and Stachowiak (n.d.)

The six theories can be applied to the advocacy elements in order to help for policy modification or change. These theories should be combined in policy making and advocacy. These should be the internal ideas, assumptions, objectives and provisions of the STI policy, which did not adequately address TVET programme for public comprehension and appreciation. The STI policy formulation process did not seem to consider the six theories in order to add the indigenous TVET technologies for the realization of the nation vision 20:2020. There is a need, therefore, for the STI policy to be reformed in order that the lower level indigenous technologies in Nigeria are considered in the policy document.

### Philosophical Framework

In any policy making, there are fundamentally based philosophical questions that must be considered, hence the need for philosophical framework in this study. Policy making and implementation is, therefore, based on public, social and empirical assumptions and findings that should be derived from some philosophical dicta. The philosophical frameworks adopted in this paper are the pragmatism and progressive education and the axiology.



**1. Pragmatism and Progressive Education:** the most prominent of the pragmatists whose dicta has been applied in policy making and implementation and in education process are Charles Sanders Peirce, William James and John Dewey (Airoboman, 2011; Omatseye, 2004). Pragmatism has to do with the usefulness, workability and practicability of an arrangement or situation. This philosophical basis is applicable to STI policy process because the usefulness, workability and practicability of any policy must be ascertained in all applicable areas of study that the policy is meant to address. This may not be true about the place of TVET programmes in STI policy. Epistemologically, pragmatism is a half-way house between empiricism and rationalism (Omatseye, 2004). In other words, pragmatism helps to determine the process of policy making by taking the steps of hypothesis formulation, data gathering and analysis for typical policy empirical and rational inquiry. One issue raised here is how and of what process is the STI policy made and implemented to make provisions for TVET in Nigeria? The answer is that these bases were not considered in the STI policy making and implementation for TVET.

Progressive education is the educational manifestation of pragmatism as practical philosophy. It evolved as a result of pragmatists' agitation for a new educational orientation which would alter the direction of schooling on vocational, scientific and political life (Omatseye, 2004). The basis of STI policy should not be based on just vision 20:2020 which is apparently not aligned with the objectives of TVET programmes in Nigerian institution. The benefit of STI policy must be linked to its growth in progressive education such as TVET programmes for indigenous technologies. It is, therefore, necessary that the usefulness, workability and practicability of STI policy be made effective on TVET programmes since TVET is the fundamental source of indigenous technology in Nigeria.

**2. Axiology:** This has to do with the philosophy of value. This philosophical dictum considers the ethical and aesthetical values of a society even in policy making and implementation. One basic question that must be considered in policy making is whether the policy is beneficial to the masses. STI policy is a public policy that must be beneficial to the public. According to Airoboman (2011) axiology etymologically means value discourse. It does not deal with values generally but only the values that pertain to ethics and aesthetics. For any policy to be functional, it must put into consideration the value of the beneficiaries. STI policy cannot reach out to Nigerians if TVET programmes are not fully integrated into the policy else the need for a separate technology/TVET policy. The policy must be able to create dialogue between the common Nigerians and the elites with respect to technological values. In another dimension, the value of the policy actors (policy-makers) can affect the functionality of the policy.

NACETEM (2014) affirmed that the new STI policy makers do not possess the adequate knowledge of science and technology. This may be linked to the fact that elites form the national policies, and the values of the public may not be considered adequately. TVET is the technology outreach of the public, hence should be fully considered in STI policy making in Nigeria. This study hereby posits that the technological value of the common Nigerians, which emanates from TVET programmes should be considered in the reformation of the STI policy, or alternative TVET policy be made.

In order to achieve the objective of the study, theoretical analysis of the STI policy document in relation to TVET and the analysis of literature in terms of other research findings are based on STI policy. The study made use of published empirical and non-

empirical secondary data on the progress, implementation and contributions of STI policy towards TVET programmes were adopted. Primary data and additional statistical tools were not employed in this study; however, the literature analyses were used to generalize the findings to TVET programmes in Nigeria.

### **STI Policy Provision and Contribution to TVET Programmes**

The STI policy has overtime been criticized by scholars, but many appears not to link it to TVET. This paper, therefore, discusses the literature analysis of the STI policy as it relates to TVET programmes in Nigeria. The analysis is carried out as follows:

**1. *STI Policy Making and Objectives in relation to TVET:*** the STI policy making process in Nigeria has always been trusted in the hands of the stakeholders. Ewa (2013) affirmed that the development and validation of the new STI policy was done by stakeholders. In most cases the knowledge and level of awareness of the stakeholders about Nigeria technology status and the distinction between science and technology is questionable. NACETEM (2014) found that the STI policy stakeholders are usually law makers or legislatives who are not literate enough to make and utilize STI indicators in policy process in Nigeria. This might have also prompted Omofonmwan (2011) to urge that equal considerations be given to science and technology in merging the two concepts. The STI policy making process is, therefore, defective, thus the need to integrate relevant experts in the policy process.

A reflection on the objectives of STI policy as presented in figure 1 revealed that the objectives are slightly applicable in TVET; however, the basic building blocks of TVET are not specified in the STI policy provisions. The failure in the implementation of the policy objectives has always resulted in the consistent review of the policy (Adole, 2014). Adole stressed that the policy specification of space technology has been criticized by many since it is somewhat above the level of average Nigerians. This simply implies that the policy document should have been from simple to complex technology specifications. The simple TVET indigenous technology should be considered first before the complex ones.

**2. *STI Policy Strategies and Implementation in relation to TVET:*** one of the strategies in determining the STI policy objectives is the application of R&D in relevant S&T areas, and this is where TVET would have been somewhat integrated into the policy via research reports of the educational institutions. Whether TVET researches are applied or not still remain an illusion since the place of STI policy in TVET cannot be determined. Osinem and Nwoji (2010) affirmed that policy and legislative inadequacies have engulfed the effectiveness and functionality of STI policy. The authors stated that the strategies and implementation measures are in adequate because the amorphous merger situation called S&T has given pure sciences more consideration and, therefore, overshadows most considerations that would have been accorded to technology. If this remains the case, it calls for demerger to give room for technology growth via simple to complex as regards TVET in Nigeria.

**3. *Technologies that are Drives towards Implementation of STI Policy:*** Ewa (2013) identified the following as the technologies for the new STI policy implementation; biotechnology, building and road technology, technology management, solar technology, space science and technology, laboratory technology and leather technology. The rest of the



technologies are technology incubation, natural medicine and science technology, material science and technology, chemical technology, renewable energy technology, food science and technology and engineering infrastructure technology (Ewa, 2013). It is, therefore, posited in this paper that about 65% of these technologies are not easily reachable to the public via TVET programmes in Nigeria. The achievement of these technologies seems complex because there are no clear definitions of these technologies in the STI policy document; hence the policy technological provisions can be described as vague, ambiguous and over ambitious. Until the indigenous technologies are clearly defined, determined and categorized in the policy document, the place of TVET in STI policy still calls for policy reforms.

## Conclusions

The distinction between science and technology/TVET programmes is not very wide; however, the two concepts are not exactly the same especially in the education system. Science is the knowledge about the structure and behavior of the natural and physical world based on facts that can be proved by experiments leading to technology and innovation, while technology and innovation is the scientific application of new things, ideas and ways of doing something in the industry in designing new machines, and the practical skills needed to convert experimented ideas for the production of concrete products.

Realizing the fact that TVET is an integral part of technology programmes, it is necessary that the fields of science and technology are treated equal in Nigeria without giving more consideration to one. TVET programmes are silent in the STI policy. The STI policy provisions have failed to embrace more of the indigenous TVET technologies in the policy document, hence did not take into consideration that technology advancement is from simple to complex. Since Nigerians directly or indirectly rely on the simple indigenous technologies for day to day activities, it is imperative that the STI policy is reformed either by clearly spell out provision of TVET programmes in the policy or by complete change of the policy so that science policy will be entirely different from technology policy. The latter is better because it is like a mirage when attempt is made to find the place of TVET programmes in STI policy in Nigeria.

## Recommendations

Based on the analyses so far, it becomes necessary that the following recommendations are made in this study:

1. The new STI policy should be reviewed into two interfaces of science interface and technology interface. This should be achieved by ensuring that the specific objectives are also split into two interfaces of science and technology.
2. It will be better if separate science innovation policy is made from technology innovation policy. This will also lead to creating two separate but corresponding ministries to oversee the affairs of the respective policy.
3. The actors of the policy making should consist of 90% of the experts from the fields of science and technology.

4. The societal values as regards the nature and level of technology should be highly considered and not just the choice and values of the elites. Preliminary survey study will help to determine this.
5. Government should not discourage separate policies for science and technology, but enough funds should, therefore, be made available to make and implement the policy.

## References

- Adole, A. (2014, August 14). How science, technology can transform Nigeria. *Vanguard*. Retrieved 14/08/14, from <http://www.vanguardngr.com/2013/12/how-science-technology-can-transform-nigeria/>
- Airoboman, F. A. (2011). The main branches of philosophy: Axiology. In P. Ujomu, P. Omonzejele & C. Maduka (Eds.) *Philosophy and Logic: An Introduction*. Benin city: The General Studies Unit and Department of Philosophy and Religion, University of Benin.
- Edem, D. A. (2011). *Introduction to educational administration in Nigeria*. Ibadan: Spectrum Books Limited.
- Ekponyong, L. E. (2011). *Foundations of technical and vocational education: Evolution and practice for Nigerian students in TVE and adult education, policy makers & practitioners*, Benin City: Ambik Press.
- Ewa, I. O. B. (2013). *Implementation of the Nigerian science, technology and innovation policy for national development*. Presented by the honorable Minister of Science and Technology at the Ministerial Round Session on “Harnessing Science and Technology for Development” of the 16<sup>th</sup> Session of the Commission on Science and Technology for Development in June at Geneva, Switzerland. Retrieved 02/08/14, from [http://unctad.org/meetings/en/Presentation/CSTD\\_2013\\_Ministerial\\_STI\\_Nigeria.pdf](http://unctad.org/meetings/en/Presentation/CSTD_2013_Ministerial_STI_Nigeria.pdf)
- FRN (2011). *Science, technology and innovation (STI) Policy*. Abuja: FMST.
- FMST (2012). *Nigeria national science, technology and innovation (STI) policy*. Abuja: FMST.
- NACETEM (2014). *An assessment of literacy level of policy makers in the utilization of science, technology and innovation policy indicators in policy making process in Nigeria*. National Centre for Technology Management, Obafemi Awolowo University supported by NEPAD Transformation Africa. Retrieved 02/08/14. from [http://www.nepad.org/system/files/ASTII\\_Nigeria\\_Report\\_web%5B1%5D.pdf](http://www.nepad.org/system/files/ASTII_Nigeria_Report_web%5B1%5D.pdf)
- Ogbonnaya, N. O. (2010). *Principles and administration of educational policies in Nigeria*. Enugu: University Trust Publishers.
- Ogwo, B. A. (2009). *Policy issues in vocational/technical education*. Unpublished Lecture Note – VTE 507 of the Department of Vocational Teacher Education, University of Nigeria, Nsukka.
- Omatseye, J. N. (2004). *Educational philosophy and the African school*. Benin City: Mindex Press.
- Omofonmwan, G. O. (2011). Merging science and technology innovation in technical education as a direction for national development. *Technical and Vocational Education Journal*, 3(1); 75-85.
- Osinem, E. C. (2012). *Policy issues in TVET*. A Lecture note on VTE 507 for M.Ed Programme in the Department of Vocational Teacher Education, Faculty of Education, University of Nigeria, Nsukka.



- Osinem, E. C. & Nwoji, C. U. (2010). *Students' industrial work experience in Nigeria: Concepts, principle and practices*. Enugu: Cheston Publisher.
- Osuala, E. C. (2004). *Foundations of vocational education*. Enugu: Cheston Agency Ltd.
- Ramalinga, B. (2011). *Six theories of policy change*. Retrieved 09/08/14, from <http://aidontheedge.info/2011/04/20/six-theories-of-policy-change/>
- Stachowiak, S. (n.d.). *Pathways for change: 6 theories how policy change happens*. Sarah Stachowiak Organisational Research Services. Retrieved 09/08/14, from [http://tamarackcci.ca/files/pathways\\_for\\_change\\_6\\_theories\\_about\\_how\\_policy\\_change\\_happens.pdf](http://tamarackcci.ca/files/pathways_for_change_6_theories_about_how_policy_change_happens.pdf)
- Toby, U. T. (2000). *Essentials of management and leadership in vocational and technical education* (2<sup>nd</sup> ed). Plateau, University of Jos: Nigerian Association of Technology Teachers

*Received 01 September 2015; accepted 18 October 2015*



**Chukwuemeka B. Okafor**

M.Ed, Industrial Technical Education, PhD. Student, Department of Industrial Technical Education, Faculty of Vocational and Technical Education, University of Nigeria, Nsukka, Enugu State, Nigeria.  
E-mail: benchukwuemeka@gmail.com



**Samson O. Chukwuedo**

M.Ed, Industrial Technical Education, Assistant Lecturer/Ph.D. Student, Department of Vocational and Technical Education, Faculty of Education, University of Benin, P.M.B. 1154, Benin City, Edo State, Nigeria  
E-mail: onyeluka.chukwuedo@uniben.edu