

# Implementation of Industrial Technology Education policies in Nigeria and labour market demands in this technological age

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**ABSTRACT:** The paper discussed the implementation of Industrial Technology Education policies in Nigeria for meeting the contemporary labour market demands in this technological age. It examined the concepts of policy, education policy, technical or Industrial Technology Education, as well as technical or Industrial Technology Education policies in Nigeria. It further examined the implementation of technical or Industrial Technology Education policies and challenges against effective implementation of technical or Industrial Technology Education policy in Nigeria. The authors conclude that the various technical or Industrial Technology Education policies in Nigeria have been well formulated to meet contemporary labour market demands in this technological age but the problem lies largely with the implementation. The authors recommended, among others, that senior academics in the Industrial Technology Education sub-sector should be more actively involved in Industrial Technology Education policy making and implementation in Nigeria. Also, the federal and state ministries of education should take a holistic approach to improve their Industrial Technology Education policy implementation efforts.

**Keywords:** Education policy, Industrial Technology Education, implementation, labour market, technological age.

## INTRODUCTION

The present era is aptly described as the technological or digital age. This is because technology is one of the key drivers of long-term economic growth. Obviously, the world has changed significantly in the past three centuries and will continue to change because of the ever-continuous development of technology. Virtually all segments of human life have been touched directly and /or indirectly by technological growth. The products of technology are all around us; in what we do in our everyday life. At home, at work, at play and in almost all areas of human endeavour such as communication, transportation, health care, entertainment, building and structural design, security, agriculture as well as education, technology has affected us all directly and indirectly. Technology has changed our lifestyles, our eating and travelling habits, our engagement

in social activities as well as what we do in our spare time. Indeed, advances in Information and Communication Technologies (ICT) have turned the world into a global village and are transforming the world economy presenting challenges that were hitherto unthought-of (Federal Ministry of Education, FME, 2019). This source added that Nigeria aspires to attain sustainable development and enhance global competitiveness, a status that requires innovations, especially in the development of human capital. Thus, there is more need for technical or technological manpower now than ever before. This is because the nature and characteristics of the technological systems employed by people nowadays have been and will continue to be significant factors in shaping the world in which we live. These systems impact

directly and indirectly on the nature of the society, the quality of life and living as well as the nature of work which in turn influence the labour market demands.

It is worth noting that the achievement of the laudable goals of Industrial Technology Education in Nigeria depends largely on the availability of a well formulated Industrial Technology Education policy and its effective implementation. This supports the views of Adesua (2022) that the effective implementation of educational policies could foster socio-economic and political fortunes for the citizens of Nigeria and also help to emancipate Nigerians socially, economically and politically.

Over the years, several scholars such as Okorafor and Nnajiifo (2017), Anene-Okeakwa *et al.* (2020) and Udoudo and Essien (2021) have written on the implementation of TVET policies, including Industrial Technology Education policies, in Nigeria. However, none of these works has specifically linked the implementation of these policies to meeting contemporary labour market demands in this technological age. This paper, therefore, examined the implementation of Industrial Technology Education policies in Nigeria and contemporary labour market demands in this technological age under the following subheadings.

## **THE CONCEPT OF POLICY AND EDUCATION POLICY**

Policies are written or unwritten statements that guide present and future thinking, initiatives, actions and decisions of managers (Ogunode and Adah, 2020). They are written when there are documents somewhere for reference purposes and are unwritten when they are made in form of pronouncements i.e. policy statements by people in power or position of authority. A policy can also be viewed as government's programme of action which stands for various degrees of goal articulation and normative regulation of government activities, that is, what government intends to do or achieve (goals) and how it intends to do it (implementation) (Egonmwan, 2000). Educational policies are those statements that are made for the purpose of transmitting what is worthwhile to those involved in the educational system (Ogbonaya, 2010). They are general statements which contain the guiding principles and rules that govern many of the decisions that guide the management of education in a country. The educational policy can further be seen as a statement of intentions, expectations, goals, prescriptions, standards and requirements for quality education delivery (FRN, 2013).

Educational policies play very significant roles in the educational development of every country, including Nigeria. Ogbonaya (2010) posited that educational policy specifies a country's national goals and governmental programmes of action towards achieving these goals which are contained in the nation's laws. Secondly, it specifies the nations' educational goals as well as the

means and procedures for achieving them. Thirdly, educational policy serves as a guide to educational administrators when deciding lines of actions along which the educational system of the country should be conducted.

Moreover, education policy stipulates government's way of realizing that part of the national goals which can be achieved using education as a tool. It provides the standards, structures, strategies and general guidelines for effective administration, management and implementation of education at all levels of the country's educational system (FRN, 2013). A nation's educational policy establishes the main goals and priorities pursued by the government in matters of education – at the sector and sub-sector levels – with regard to specific aspects such as access, quality and teachers, or to a given issue or need (UNESCO, 2013). Thus, the educational policy of Nigeria contains principles, regulations and rules that govern many of the decisions on how to educate children, where to get them educated, where to get them employed, whom to teach them, how to finance their education, what to teach, how to impart skills, the goals, objectives and even the nation's education philosophy (Ogunode and Adah, 2020).

Nigeria's National Policy on Education (NPE) is contained in a document titled "National Policy on Education" which was first published in 1977 as the first edition and reviewed in 1981, 1998, 2004, 2009 and 2013 as the second, third, fourth, fifth and sixth editions respectively. The latest (6th) edition of the policy published in 2013 consists of 10 sections on various critical issues of the educational system such as the Philosophy and Goals of Education in Nigeria; Basic Education; Post-Basic Education and Career Development and Mass and Nomadic Education. Other sections include Tertiary Education; Open and Distance Education; Special Needs Education; Educational Support Services; Planning and Administration of Education and Funding and Partnerships. Each of these sections highlights the main issues it is concerned with, its objectives as well as measures for attaining the objectives. For instance, section 3 which focused on Post-Basic Education and Career Development has two sub-sections (A) Senior Secondary Education and (B) Technical and Vocational Education and Training (TVET).

## **INDUSTRIAL TECHNOLOGY EDUCATION AND ITS IMPORTANCE**

Industrial Technology Education is one of the Vocational Education courses offered in many educational institutions in Nigeria. It is also known by other names such as Technical Education, Technology Education, Industrial Technical Education or Industrial Technology Education. It is that aspect of education which leads to the acquisition of practical and applied skills, as well as basic scientific

knowledge (Ogwo and Oranu, 2006). Technical Education has to do with the study of “technologies” and it emphasizes the acquisition of technical “know how” or knowledge of how to solve problems or get things done using basic scientific knowledge (NOUN, 2015). Technical Education has been an education concerned with work especially in its traditional scope. Today, its concern has extended to include man’s vocational development and education about work and what work involves (Essien and Udoessiet, 2019).

Technical / Industrial Technology Education is offered in Nigerian schools at three levels. These are at the Upper Basic Education (junior secondary school) level, Senior Secondary / Vocational Schools and Technical Colleges at post-primary school level, and the Polytechnics/Monotechnics, Colleges of Education/Colleges of Technical Teacher Education and Universities at the post-secondary school/ tertiary level. At the Upper Basic Education (junior secondary school) level, Technical Education is offered as Basic Technology (formerly Introductory Technology) which is a pre-vocational subject that integrates topics from many technical subjects such as Technical Drawing, Woodwork Technology, Metalwork Technology, Auto-Mechanics, Applied Electricity and Basic Electronics. Others are Building Construction, Food Storage and Preservation as well as Ceramics, Plastics and Rubber Technology (Udoudo, 2011).

At the Senior Secondary School level, Technical Education is offered as distinct technical subjects such as Applied Electricity, Woodwork Technology, Metalwork Technology, Basic Electronics, Technical Drawing, Auto-mechanics and Building Construction Technology, among others. The Federal Republic of Nigeria (FRN, 2013) listed 27 subjects recognized as technical subjects at the Technical College level to include but not limited to the following: Agricultural Implements and Equipment Mechanics’ Work; Automobile Engineering Practice (auto body repair and spray painting, auto electrical work; auto body mechanics work and auto body-building). Others are Air-conditioning and Refrigeration Mechanics’ Work; Mechanical Engineering Craft Practice; Welding and Fabrication Engineering Craft Practice; Foundry Craft Practice; Electrical Installation and Maintenance Work. Radio, Television and Electrical Work as well as Block-laying, Brick-laying and Concrete Work.

At the tertiary level (Polytechnics, Monotechnics, Colleges of Education (conventional and technical)), Technical Education is usually offered as three major options namely Automobile/Metalwork (or Mechanical) Technology, Electrical/Electronics Technology and Building/ Woodwork Technology. At the university level, it is offered using various nomenclatures such as “Technical Education”, “Industrial Technical Education”, “Technology Education” or “Industrial Technology Education”. The degree programme in Technology Education is offered to impart relevant knowledge, skills, attitude and values to

students in five major trades which include Mechanical, Electrical/Electronics, Metal work, Woodwork and Building technology (NUC, 2022). Acquisition of the above attributes, enable students to acquire self-sufficiency and self-reliance thus making them to be useful to their society, community, and environment. They will also be employable in the world of work.

Technical Education or Industrial Technology Education is an integral aspect of Technical Vocational Education and Training (TVET) which is a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (FRN, 2013). The policy document stipulates that TVET shall cover Technical Colleges, Vocational Enterprise Institutions (VEIs) and National Vocational Qualifications Framework (NVQF). Thus, TVET is an all embracing comprehensive education and training programme, involving lifelong learning for responsible citizenship, and the promotion of environmentally sound development and social transformation (Okorafor and Nnajofo, 2017). Technical Vocational Education and Training is very wide in scope. It consisted of, but not limited to, Agricultural Education, Business Education, Computer Education, Home Economics Education, Industrial Technical Education and Health Occupations, among several others (Udoudo and Essien, 2021).

Technical Vocational Education and Training (TVET) policy in this context therefore refer to a written formal tool of thought through which formalized practices in TVET are made for decisions and actions towards strategy implementation in TVET, by management and subordinates (Anene-Okeakwa *et al.*, 2020). A TVET policy can be sector wide covering the entire TVET system or it can be limited to a particular sub-sector such as Business Education, Computer Education or Industrial Technology Education. This paper is specifically focused on Technical Education /Industrial Technology Education policy which simply refer to those provisions made for Technical Education/Industrial Technology Education in the various editions of Nigeria’s National Policy on Education.

## **INDUSTRIAL TECHNOLOGY EDUCATION POLICIES IN NIGERIA**

In Nigeria, TVET policy which covers Technical Education/Industrial Technology Education is enshrined in the National Policy on Education (NPE). Okorafor and Nnajofo (2017) stated that major educational reforms and policies in Africa and Nigeria in particular started with the restructuring of the colonial education system with more emphasis on vocationalization. The liberal or grammar school type of education policy inherited from the colonial

masters was merely aimed at developing the citizen's literacy (ability to read and write) and numeracy (ability to count) to enable them serve as interpreters for missionary work and clerks for the civil service (Udoudo and Essien, 2021). There was not much appreciable emphasis on acquisition of technical skills. Consequent upon the attainment of independence, it was discovered that the colonial education system did not meet the needs and aspirations of Nigerians. The blatant inadequacies of the colonial education system led to the introduction of 6-3-3-4 education policy in 1982 which featured increased vocationalization of the secondary school system with the introduction of pre-vocational and vocational subjects at the junior secondary and senior secondary school levels respectively.

The 6-3-3-4 system was changed to 9-3-4 system in 2006 with the inception of the Universal Basic Education (UBE) Programme. The 9-3-4 system entails 9 years of basic education (6 years of Primary education and 3 years of Junior Secondary Education), 3 years of senior secondary education and 4 years of higher or tertiary education (FRN, 2013). According to Okorafor and Nnajofofor (2017), Nigeria has long acknowledged TVET, at least in policies, as the master key to unlocking the future. For instance, the 6-3-3-4 education system policy introduced a functional technology-based education which could sustain the Nigerian economy by making far reaching provisions for the development of vocational skills. In addition, it was designed to allow an exit point after nine years of schooling to enable youths who cannot continue to senior secondary education to pursue careers through apprenticeships or other vocational training programmes.

Okorafor and Nnajofofor (2017) analysed the following as some policy statements enshrined in various education policy documents in Nigeria that promote TVET which have not been fully implemented:

1. Recognizing that TVET is an integral part of technological development, a greater proportion of education expenditure shall continue to be devoted to vocational education at Federal and State levels (FRN, 2004, section 7, 52 pp. 35).
2. In recognition of the fundamental importance and cost intensive nature of TVET, government shall provide adequate funds for TVET (FRN, 2004, section 7, 56 pp. 35).
3. The purpose of development of individuals is to enable them contribute to the development of the society. For this reason, the plan lays emphasis on TVET as the "master key" to unlocking our future (FME, 2012, pp 2).
4. The ability of Nigeria to realize the vision of becoming one of the twenty largest economies in the world by the year 2020 is largely dependent on the capacity to transform its youths into highly skilled and competent citizens .... It is for this reason that commitment to

TVET must be strengthened (FME, 2012, pp. 54; FME, 2009, pp. 14)

These policy provisions and statements are well appreciated. It should however be noted that the success of any educational policy depends on how well it is implemented.

## IMPLEMENTATION OF INDUSTRIAL TECHNOLOGY EDUCATION POLICIES IN NIGERIA

Formulating a policy is meaningless except if it is properly implemented. Obilo *et al.* (2021) agreed that no matter how laudable and lofty the goals of any policy (educational policy inclusive) might be, it would remain a mirage except it is properly implemented by policy implementers (including the teachers) with the appropriate structures put in place for its implementation. Policy implementation is the stage where the approved policy options are executed. It is the action stage of the policy process and it involves the mobilization or assembling of resources (financial, human and material), allocating resources and utilizing resources (operations), in order to achieve policy objectives. It is the stage where the policy content is made specific and meaningful to the general public or the organization concerned. Educational policy implementation, therefore, refers to the process or act of putting the educational policies that have been formulated into action. It also means executing the educational policies that have been formulated through structures that have been put in place (Obilo *et al.*, 2021). Policy implementation is a critical stage in the policy process because it links the policy plans to their actual performance.

According to Okorafor and Nnajofofor (2017), many educational policies have evolved in Nigeria over the last decades but with outcomes falling behind expectations. The present state of TVET in Nigeria is a clear indication that TVET policy provision is divorced from the actual practice because there are wide gaps between the policy provisions and what is actually done. The authors identified the following as some of the wide gaps between TVET policy provisions and their actual implementation: First, the policy stipulates that technical colleges are expected to feed polytechnics just as secondary schools are to feed universities. The prevailing situation however is that the total products of Technical Colleges in Nigeria represent only a very small percentage (about 17%) of available spaces in polytechnics. This implies that right from the onset, the mission of technical colleges feeding polytechnics is not being met. This explains why the country tends to be producing more theoreticians than technology experts (Odukoya, 2013 in Okorafor and Nnajofofor, 2017).

Another case is that the NPE stated that every technical college shall establish and operate a production unit for

on-the-job training of students and commercial activities to sustain the college operation, as well as encourage cooperation with industries (FRN, 2013). Unfortunately, most technical colleges lack adequate facilities and functional workshops, not to talk of operating a production unit. These and many other gaps existing between the TVET policies and practice have posed many challenges to TVET in realizing its goals (Okorafor and Nnajofofor, 2017). The ineffective implementation of TVET policies and programmes in Nigeria is undoubtedly caused by some challenges in the Nigerian educational and political system.

### **CHALLENGES TO IMPLEMENTATION OF INDUSTRIAL TECHNOLOGY EDUCATION POLICIES IN NIGERIA**

Implementation is the transformation of educational policy into action. Unfortunately, educational policies and goal attainment have been irreconcilable due to implementation constraints. According to Okoroma (2006), it is actually difficult to realize one hundred per cent of planned policy objectives due largely to either faulty planning or faulty implementation. In other words, most of the problems of policy implementation in Nigeria are traceable to the planning stage. Obviously, good planning that can facilitate effective implementation ought to consider such factors as the planning environment, social environment, political environment as well as finance and statistics. In reality, educational policy implementation is a prominent national problem that has taken the centre stage in most developing countries, including Nigeria. This is because it is seriously hampered by various challenges and constraints.

There are numerous challenges against the effective implementation of educational policies, including Technical or Industrial Technology Education policies, in Nigeria as recorded in many educational literature. Some of them include weak data and information base due to the constraints in data collection such as the absence of reliable data bank and population base, marking of many official records as "secret", poor and inadequate ICT facilities (NOUN, 2010). Others are Inadequate quality manpower for effective implementation of educational policies; inequitable educational opportunities; excessive bureaucracy; inefficient resource allocation for technical and technology education as well as inadequate funding of technical and technology education (Udoudo and Essien, 2021). Other challenges against the effective implementation of Technical and Technology Education policy in Nigeria include lack of continuity in policies and corruption (Okoroma, 2006).

Furthermore, Okorafor and Nnajofofor (2017) identified faulty policy and institutional frameworks, political instability, lack of political will and corruption as other challenges or constraints against the implementation of education policies generally. Agreeably, corruption is a

major factor which stagnates the development of education in Nigeria as it often occurs at various stages of implementation. For instance, the budgets for the implementation of the policies are often passed by lawmakers (national and state) with strings attached to them. Even when the budgets are passed, the executive arm of government is often reluctant to release adequate funds to facilitate its implementation. Moreover, the inadequate funds often released to the operators of the education system (primary schools, secondary schools and tertiary institutions) are not honestly and fully utilised to promote the cause of education as many officials corruptly divert much of the available educational resources to serve their personal interests. Okorafor and Nnajofofor (2017) noted that some policies are not very expensive to implement if there are good people and the structure is right but educational administrators and other stakeholders divert institutional/faculty/departmental resources as their share of the national cake. Worst still is that the bodies set up to check this ugly situation, have formed allies with the stakeholders.

### **LABOUR MARKET DEMANDS IN THIS TECHNOLOGICAL AGE**

The labour market is where the demand for labour meets the supply of labour and where in principle, the needs and interests of workers for employment meet the needs of employers. There are many categories of labour for different labour markets. One common categorization of labour is by skill levels namely; unskilled, semi-skilled, skilled, semi-professional and professional. The difference among the various categories lies in the level of knowledge and education acquired. Highly skilled labour is generally characterized by advanced education (college and higher), possession of knowledge and skills to perform complicated tasks, ability to adapt quickly to technology changes, and creative application of knowledge and skills acquired through training in their work (International Labour Office, 2011).

The present era is appropriately described as the technological age because technology is one of the key drivers of long-term economic growth. Obviously, the world has changed significantly in the past three centuries and will continue to change because of the ever-increasing development and innovations in technology. The extraordinary rate of technological development has affected every facet of human endeavour, including the nature of work and consequently, the labour market demands. Consequently, there is a greater need for technical or technological manpower now than ever before in the world of work.

According to Essien and Udoessiet (2019), the world of work with respect to Technical or Industrial Technology Education is based on the following assumptions: First, Technical or Industrial Technology Education is economic

education and it is geared to contribute to national economic strength. This implies that educational improvement leads to a better standard of living for the individual and this in turn becomes a gain to the society as a whole. Secondly, Technical or Industrial Technology Education can develop a marketable man by developing man's ability to acquire skills and perform tasks that extend this ability as a tool of production. Through Technical Education or Industrial Technology Education, people are taught how to use their brains and hands to fabricate, repair, manufacture, dismantle, build and couple things. Graduates of Technical or Industrial Technology Education can get paid jobs in industries or public and private institutions, they can become self-reliant by establishing their own enterprises.

In specifying the expectations of Industrial Technology Education graduates in the contemporary labour market, The National Universities Commission (NUC, 2022) stated that the Philosophy of Industrial Technology Education programme is to produce a complete development of the individual student teacher to be a committed and efficient breed of the programme for Nigerian secondary schools and colleges; and also to produce high calibre professionals in the various trades endowed with analytical and critical knowledge of the major sectors in contemporary business world to influence the development of a virile economy. The commission added that graduates of the programme should be able to occupy teaching and leadership positions in secondary schools, technical colleges, colleges of education, monotronics, polytechnics, universities and training programmes in industrial establishments. Also, they should assist students in the mechanical (automobile) trades; electrical/electronic trades; woodwork trades; metal trades; and building trades to become entrepreneurs. Moreover, they are expected to acquire 21st century skills which include the following: digital literacy; self-management; interpersonal communication skills; creativity and innovation; decision making; investigative skill; advocacy for ethical values; and team profession.

Strengthening TVET policies, which includes Technical or Industrial Technology Education policies, is the key to sustainable skills development in the African region. Skilled and competent workforce, according to UNESCO (2013), is key to promoting youth employment, national productivity, economic growth, and market competitiveness both regionally and globally. This viewpoint is shared by International Labour Office (2011) which pointed out that the cornerstones of a policy framework for developing a suitably skilled workforce are: broad availability of good-quality education as a foundation for future training; a close matching of skills supply to the needs of enterprises and labour markets; enabling workers and enterprises to adjust to changes in technology and markets; and anticipating and preparing for the skills needs of the future. This source added that when applied successfully, this approach nurtures a virtuous circle in which more and better education and training fuel

innovation, investment, economic diversification and competitiveness, as well as social and occupational mobility – and thus the creation of more but also more productive and more rewarding jobs. Moreover, good-quality primary and secondary education, complemented by relevant vocational training and skills development opportunities, prepares future generations for their productive lives, endowing them with the core skills that enable them to continue learning.

Unfortunately, compared to the newly industrializing countries (NICs) of the world such as Korea, China, Malaysia, India, and Singapore, African countries including Nigeria, are yet to produce adequate skilled manpower perhaps due to lack of awareness of enabling policies, or poor formulation and implementation of best policies and practices in TVET. TVET is an indispensable component of national development strategies in many nations because of its impact on productivity and economic development. Any nation that premises its developmental efforts on science and technology in this contemporary world would be rated among the top world economies (Okorafor and Nnajofofor, 2017).

There is renewed agitation for an improved TVET system that provides adequate knowledge, skills and attitude to the citizens in many countries. Okorafor and Nnajofofor (2017) contended that immediately after Nigeria attained independence in 1960, the first education policy reform done by the government was to change the curriculum from the one inherited from the colonialist to a vocationalised one with the introduction of 6-3-3-4 system in 1982. Furthermore, the government of Nigeria found it worthy to establish the National Board for Technical Education (NBTE) to coordinate the programmes of all technical colleges, polytechnics and monotronics as manpower-producing institutions which was an initiative that will address the manpower gap identified in the third national development plan. The present technological age which is characterized by the technology driven economy requires participatory job ethics in which individuals are rated on what they can do practically, not on paper qualifications. In other words, the contemporary labour market finds no place for individuals who cannot perform, but is interested in what individuals can offer practically and pragmatically.

## CONCLUSION

The authors conclude that the various Technical or Industrial Technology Education policies in Nigeria have been well formulated to meet contemporary labour market demands in this technological age, if well implemented. There are laudable and far reaching provisions for promoting skills development in the country. The government's intention was that the far-reaching provisions set out for Technical or Industrial Technology Education in the various education policies should transform all aspects of the nation's education system over

time and also transform the country technologically, economically, socially, politically and morally. However, the problem lies with the poor implementation of the policies due to several implementation constraints. For the implementation of Technical or Industrial Technology Education policies in Nigeria to meet the contemporary labour market demands, there is an urgent need to address the various challenges squarely in order to make the products of the TVET system marketable by being sufficiently equipped with practical skills for sustainable performance. The stakeholders in the TVET sector generally need to continuously persuade the government to take proactive actions to ensure the effective implementation of the TVET policies in the country otherwise, the laudable and far-reaching provisions set out in the policy may only be a mirage.

### Recommendations

From the above discussion, the following recommendations were made:

1. Senior academics in the Technical or Industrial Technology Education sub-sector should be more actively involved in Industrial Technology Education policy making and implementation.
2. Federal and State ministries of education should take a holistic approach to improve Industrial Technology Education policy implementation efforts.
3. The three tiers of government in Nigeria should ensure that enough financial, human and material resources as well as time are provided for effective implementation of Industrial Technology Education policies.
4. The Federal and State ministries of education should ensure that those entrusted with the implementation of Industrial Technology Education policy provide clear directives to the subordinates to facilitate successful implementation.
5. Students studying Industrial Technology Education in tertiary institutions should be awarded scholarship to motivate them and ensure a steady supply of skilled Industrial Technology Educators for the education system.

### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

### REFERENCES

- Adesua, V. O. (2022). Implementation of educational policy for socio-economic and political emancipation in Nigeria. *British Journal of Education*, 10(10), 51-59.
- Anene-Okeakwa, J. E., Chukwurah, M. O., & Ikenga, E. E. (2020). Policy reforms in Technical and Vocational Education and Training (TVET): Lessons for the Nigerian government towards sustainable industrial growth. *Vocational and Technical Education Journal*, 2(2), 316-322.
- Egonmwan, J. A. (2000). *Public policy analysis: Concepts and applications (Revised Edition)*. Benin City: Reysin (Nig) Company
- Essien, E. O., & Udoessiet, P. J. (2019). Technical vocational education and training (TVET) and entrepreneurship for sustainable industrialization. *Intercontinental Journal of Education, Science and Technology*, 3(2), 79-86.
- Federal Ministry of Education (FME) (2019). National policy on information and communication technologies (ICT) in education. Abuja: Federal Ministry of Education.
- Federal Republic of Nigeria (FRN) (2013). *National policy on education* (6th Edition). Lagos: NERDC Press.
- International Labour Office (ILO) (2011). A skilled workforce for strong, sustainable and balanced growth: A G20 training strategy. Retrieved 20th December 2022 from [https://www.ilo.org/moscow/information-resources/publications/WCMS\\_345398/lang--en/index.htm](https://www.ilo.org/moscow/information-resources/publications/WCMS_345398/lang--en/index.htm)
- National Open University of Nigeria (NOUN) (2010). *EDP 917: Implementation of educational policy plans*. Retrieved 12th March 2019 from <https://nou.edu.ng/coursewarecontent/EDP%20917.pdf>.
- National Open University of Nigeria (NOUN) (2015). *VTE115: Introduction to vocational education*. Retrieved 22nd June 2020 from <https://nou.edu.ng/coursewarecontent/VTE115.pdf>.
- National Universities Commission (NUC) (2022). Core curriculum and minimum academic standards for the Nigerian university system. Retrieved on 20th December 2022 from <https://nuc-cemas.ng/downloads/>.
- Obilo, I. P., Sangoleye, S. A., & Urenyere, R. U. (2021). Education policy implementation in Owerri education zone of Imo state, Nigeria: the way forward. *Serpentia Foundation Journal of Education, Science and Gender Studies*, 3(3), 351-359.
- Ogbonaya, N. A. (2010). *Principles and Applications of Educational Policies*. Nsukka: University Trust Publishers.
- Ogunode, N. J., & Adah, S. (2020). Educational policy in Nigerian: Challenges of Implementation and Ways Forward. *Middle European Scientific Bulletin*, 4, 1-9.
- Ogwo, B. A., & Oranu, R. N. (2006). *Methodology in formal and non-formal technical/vocational education*. Enugu: Ijejas Printers and Publishers Company
- Okorafor, A. O., & Nnajiifo, F. N. (2017). TVET policies in Nigeria: why the gap. *European Journal of Education Studies*, 3(4), 612-625.
- Okoroma, N. S. (2006). Educational policies and problems of implementation in Nigeria. *Australian Journal of Adult Learning*, 46(2), 243-263.
- Udoudo, N. J. (2011). Effects of Multiple Intelligence-based instructional approach on students' cognitive achievement in Introductory Technology. *Journal of Sustainable Education*, 3(2), 1-13.
- Udoudo, N. J., & Essien, E. O. (2021). Critical appraisal of Technical/ Industrial Technology Education policies in Nigeria and their implementation challenges. In: Eya, P. E., Nwaeke, G. C., Osaigbovo, J. A. (eds.). *Issues, challenges and prospects of Technical Vocational Education and Training in Nigeria* (pp. 44 -67). Onitsha, Nigeria: West & Solomon Publishing Company Ltd.
- United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2013). UNESCO Handbook on education policy analysis and programming. Retrieved 12th March 2020 from <https://unesdoc.unesco.org/ark:/48223/pf0000221189>.