QUALITY ASSURANCE IN POLICY IMPLEMENTATION OF SCIENCE EDUCATION IN NIGERIA: PROSPECTS AND CHALLENGES.

Kabiru Isah Inuwa
Registry Department
Federal College of Education (Technical) Bichi,Kano-State
Email: kabiruiash783@gmail.com
Phone NO: 08143456184, 09165076703

Abstract

Nigeria as a growing nation can only meet up with other developed and industrialized nations when her Educational system is fully developed. It is a fact that no nation grows educationally without adequate implementation of her educational policies since it is not enough just to make policies. Therefore, there is inadequate and management of finance has lead to the inadequacy of training science facility in schools particularly in our institutions of higher learning, teachers are continually under pressure to cover the generally content- heavy syllabus and prepare students adequately to pass the examination often within limited time frame, the explanation for student attitude toward school science may be shortage of well- qualified teachers capable of providing positive experience. This paper focused on concept of science education, educational policy implementation in Nigeria, quality Assurance and it's important to education, national policy on science education, prospect of science educational policy implementation. Challenges confronting quality assurance in policy implementation of science teacher education were also identified. The paper recommended among others that, for adequate implementation of science education policies, curricula content would have to be amended to reduce dependence on text books and also include the doctrine of an ethno- science. Traditional teaching format in classrooms which focuses on passing examinations should be discouraged and assessment which covers higher levels of cognitive, affective and psychomotor ability be encouraged. Above all, funding should be adequately and promptly provide for the issues of implementation to be carried out.

Keyword: *Challenges, policy implementation, Prospect, Quality Assurance, science education,*

Introduction

Nigeria is desirous of joining in the league of developed nations by 2020. This vision can be realized if the wells spelt out educational policies are adequately implemented to stabilize and solidify our educational system. Educational policy is the bedrock upon which the educational system of every nation is founded. This explains why some educational policies are made in Nigeria to guide how educational system should be operated. However, it has also become almost normal to articulate beautiful authoritative statements and practical administrative guides for the development of educational objectives in Nigeria with little or no effort to implement them. This is a gross educational fraud that requires investigative, diagnostic, and curative attention. Thus, there is a need to look into the prospects and challenges of quality assurance of educational policy implementation in the Africa's biggest nation.

Science education is the field concerned with sharing science content and process with individuals not traditionally considered part of the scientific community. The target individuals may be children, college students, or adults within the general public. The field of science education comprises science content and teaching pedagogy. The traditional subjects included in the standards in Nigeria are Biology Education, Chemistry Education, Physics Education, and Integrated Science Education.

Science Education is to educate students who are able to experience the richness and excitement of knowing about and understanding the natural world, use appropriate scientific processes and principles in making personal decisions, engage intelligently in public discourse and debate about matters of science and increase their economic productivity through the use of the knowledge, understanding, and skills. The science content defines what the scientifically literate person should know, understand, and be able to do after attending science classes. Schools that implement the science curriculum will have students learning science by actively engaging in inquiries that are interesting and important to them.

Excellence in science education embodies the idea that all students can achieve understanding of science if they are given the opportunity. Science education takes more into consideration what students should understand and

be able to do and the manner in which students will achieve those outcomes. Students will achieve understanding in different ways and at different depths as they answer questions about the natural world. Students will achieve the outcomes at different rates, some sooner than others. However, all should have opportunities in the form of multiple experiences over several years to develop the understanding associated with the concepts of science and science education. All these are found in formal science education.

Concept of Science Education

Science is a body of knowledge and process studied for the possibilities it offers for the development and advancement of technology. It is way of providing explanation for certain events, occurrences and phenomena in nature using acceptable laws, principles and practice (Besmat Digbori, 2008) Education is undoubtedly a requirement for the emperwoment of individuals in any given society.

Ezeh (2005) defined science education as the process of utilization of both pedagogic principles and content knowledge in science to impart scientific facts, theories and laws of nature. It is one of the indispensable tools for national development. It has been employed by various countries of the world to solve their various national problems such as discrimination, social justice, poverty, diseases, breakthrough in science and technology, economic stability etc. Science education involves the study of some science and in addition, educational disciplines that relate especially to how scientific knowledge and the concept are learnt and verified; how scientific concepts are programmed for understanding and how science curricula can be meaningfully evaluated.

Science education consists of three areas:

Learning science (acquiring and developing conceptual and theoretical knowledge). Learning about science (developing an understanding of the nature and methods of science; becoming aware of the complex interactions between science and society). Doing science (engaging in the expertise in scientific enquiry and problem solving). Indeed, each of these aspects contribute to the development of society especially in the cultivation of scientific culture and education of the future generations in the acquisition of basic knowledge, skills and attitude for coping with the ever-depending world we live in (Uchenna, 2006). Science education was introduced into our school curriculum by the colonial administrators whose interest and objectives were not necessarily the same as those needed for development of the nation. Bajah (1982) claimed that the rudiment of science at that time was nature study that involved the teacher and pupils learning about the environment in form of observation of plants, animals and non-living things. In this way, the teaching of science was not coordinated, neither was it focused (Baike, 2000). Nkpone (2006) opined that if the development of science education in Nigeria was difficult, policy makers and those at the helm of our educational system, must reposition science and science teaching in other to avoid making the mistakes for which we are blaming the colonialist.

Concept of Policy Implementation

Educational policy implementation deals with the process of translating educational policies into specific courses of action. It is the day to day carrying out of policy document. Educational policy formulation is not complete until such policies are implemented. Policy implementation seems to be the most difficult aspect of policymaking and no policy formulated is operational without policy implementation. Every policy on education is expected to achieve its aim and this is the ultimate work of policy implementation. Educational policy implementation should be evaluated accordingly, either on the process of implementation or at the end of it. This is to ensure that such a policy achieves what it sets out to achieve. In this way, areas of improvement can be strengthened for effectiveness and efficiency.

Concept of Educational Policy Implementation in Nigeria

Educational policy implementation in Nigeria is assumed to be the responsibility of the civil servants. According to Ocho (2003), the bureaucrats, administrator, or civil servant normally uses established guidelines in carrying out this duty of policy implementation. In Nigeria, policy 3 implementation involves major interest groups and stakeholders in education such as the Federal and State Ministries of Education, the National Universities Commission, the National Board for Technical Education, the National Commission for Colleges of Education, the

Nigerian Educational Research and Development Council, the Post Primary School Management

Board, the State Universal Educational Boards, the Local Government Education Authorities, the

National Council for Nomadic Education and the National Business and Technical Education Board among others (Ogbonnaya, 2014). According to Oriaifo (2006), implementation of policies in Nigeria is the responsibility of all stakeholders, ranging from students, teachers, parents, administrative staff (academic and non-academic), all curriculum workers as well as the staff of the various Ministries to all parastatals of education. The different boards, organs, stakeholders, agencies, and ministries are vested with the power to implement educational policies made by the government. The importance of educational policy implementation cannot be over emphasized. It is established

that for every one naira spent on effective educational planning and implementation, the nation; (i) saves unquantifiable amounts in time and resources;

(ii) Enjoys overall improvement in productivity and job opportunities;

(iii) Experiences considerable decline in crime rate; and

(iv) Begins to relish the fruition of social, economic, cultural, political, scientific andtechnological advancement (Oriaifo, 2011:26) Therefore, those involved in the implementation of educational policies should convert policies into workable blueprint. They should develop programmes for the implementation of policies. They should coordinate, monitor, assess, and appraise the implementation of educational policies in relationship with its main objectives. It is in implementing policy guideline that weaknesses or limitations of the current policy are discovered, suggestions made on how to improve the policy and adjustment effected. This is important because, as Oriaifo (2006) argued, it is not expected that there should be problems in the planning and implementation of educational polices. Sometimes such corrections, criticisms, and recommendations give birth to new policies.

Quality Assurance and why is it Important in Science Education?

The concept of quality in academics is the concept of quality of educational input in its entirety. Quality can be considered as a baseline standard in education. These standards imply accepted principles, rules, guidelines, or levels established by groups of people, organizations or societies. Standards address the issue of accountability in educational practice in terms of the use put in materials and personnel. A bison (2000) is of the opinion that the educational enterprise has to do with establishing and maintaining standards which form the basis for evaluation. The America Society for quality defines Assurance as: the planned and systematic activities implemented in a quality system so that quality requirement for product or service will be fulfilled (Kauffman, 2005) in (Dada and Job 2006). According to Lawal (2008), quality assurance is an inbuilt systemic mechanism aimed at sustaining and enhancing all the key components and processes in system with a view to ensuring that the system progresses towards the attainment of the goals for which it was designed. Stressing this further Walklin (1992) in Akinbobola and Ikitole (2008) sees quality assurance as the avoidance of non performance by pre-empting failure through proper planning, execution, monitoring and evaluation. This will ensure a way of managing an organization so that every job, every process is implemented right first time and always. Furthermore. Akinbobola (2008) explained that quality assurance in the school setting is made possible through planning by the management which involves all the staff in the functions of planning, execution, monitoring and evaluation using set standards and objectives. From all these, quality assurance in science and technology teacher education could be viewed as the success with which adequate, relevant and effective training (teacher preparation) are provided to teachers for the effective conduct of their duties.

Qualitative Science and Technology Teacher Education

According to Adebisi (2008), the quality of education is weak and varies considerably within and across states. There are inadequate systematic and reliable information on student's learning outcomes. Ciwar, (2005) opined that, "in all forms of education be it formal or non-formal, liberal, professional or technical, the teachers input is undoubtedly a requirement". In science and technology education as opposed to liberal education, teacher preparation, quantity and quality are critical factors because of the very skills that must be taught and an imperative in the successful implementation of the skill clusters under the Universal Basic Education (UBE) and secondary schools for the nation's technology and economic development. The need to meet teacher quality and quantity for Nigerians education and technological development was highlighted by the National policy on Education (FGN, 2004) as observed by Anukanu (2004) in Umar (2008) who stated that, the national policy on education stressed the importance of teacher education in the nations education planning and development by stating that; the purposes of teacher education are; -

-To produce highly motivated, conscientious and efficient classroom teachers for all levels of our education system;

- To encourage further the spirit of inquiry and creativity in teachers;

- To help teachers to fit into the social life of the community and the society at large and enhancetheir commitment to national goals. The implication of the foregoing, Okebukola (2007) argued, is that any teacher that will teach effectively and efficiently must: a. Be-well prepared during his/her pre-service days;

b. Possess high morale;

c. is highly motivated;

d. Have very good knowledge of the subject matter;

e. Possess adequate skills/competence required for teaching and improvisation;

f. Be highly committed to teaching.

National Policies on Science and Technology Education

Nigeria is not left out in the global embrace of science and technology education for sustainable development. She is not lacking in terms of policies and programs for actions. The federal government recognizes education as the greatest investment that the nation can make for the quick development of its economic, political, sociological and human resources and stated categorically in the introduction to the National Policy on Education that "the federal government of Nigeria has adopted education as an instrument per excellence for effecting national development" (FRN, 2004). The national policy on science education as contained in the National Policy of Education (FRN, 2004:29) states that: Science education shall emphasis the teaching and learning of science processes and principles. This will lead to fundamental and applied research in the sciences at all levels of education.

The goals of science education shall be to:

(i) Cultivate inquiring, knowing and rational mind for the conduct of good life and democracy

(ii) Produce scientist for national development Service studies in technological development; and

(iii) Provide knowledge and understanding of the complexity of the physical world, the forms and conduct of life.

One of the strategies for implementation of the policy guideline towards achieving the science and technology objectives using education is ensuring a sound science foundation during the first six years of the 6-3-3-4 educational structure (Osobonye, 2007); the compulsory teaching of science and technology at the junior secondary schools and the requirement that at least one of the three science subjects–Physics, Chemistry and Biology as core subject in senior secondary schools (Uchenna, 2006).

Science Education Policy Implementation Curriculum Issues

Effective implementation of school curricula within any given society greatly paves way for its development. The recognition of the enormous contributions of science to the nation's economic and technological advancement has earned science a pride of place in our school curriculum. In the school, most of the things the learners are exposed to are contained in the curriculum and they are organized, controlled and supervised by the teacher. According to Eniayeju (1997) the implementing science education policy has been hampered by the concept of the intended and implemented curriculum. He contended that there are disparities between the two. In his opinion, the contents of the intended curriculum are relevant and functional using the Tyler or Johnson parameter of curriculum development, but the implementation is poorly done and grossly inadequate. The implementers (teachers) depend on textbooks that do not properly define the scope of the subject matter with poor sequence for instruction laid out (Ihuarulam, 2006). The stereotyped textbook type of curriculum does not utilize the learner's immediate environment.

Teacher Qualification Issues

Teachers are the bedrock of attaining educational aims and objectives; their services are therefore indispensable to the nation. This is because, the teachers as the facilitator of learning, have a lot of impact on the child and the society at large. Research suggests that the main factor determining attitude towards school science is the quality of the educational experience provided by the teacher (ASE, 2004). Part of the explanation for student attitude towards school science may be shortage of well-qualified teachers capable of providing positive experience therefore, the production of high level, well trained and motivated science teachers cannot be over emphasized in the implementation of science education policy. The sophistication that is required in teaching needs to be preceded by a largely improved teacher education program and the provision of adequate material resources in the use of both teacher and student (Agbunno, 2006). Finance Issues

Nigeria educational programs had often suffered due to misappropriation of funds or underfunding. The fact that 5.6% of the country's recurrent expenditure is the sectored allocation to education (primary, secondary and tertiary levels) as against 9.6% and 6.9% to defense and police respectively (ASUU, 2002) attest to the fact that formal education system is grossly underfunded in this country. Inadequate and management of finance has lead to the inadequacy of training science facilities in schools particularly in our institutions of higher learning (Gesinde, 2008). Indeed, that there is acute lack of resources (laboratories, libraries, equipment, and materials etc.) for teaching science in our schools is to a large extent due to acute lack of fund to procure these resources that are generally expensive. These facilities are part of the government strategies for the implementation of its policy guidelines towards achieving science and technology using education (Osobonye, 2007).

The Examination System

Our education system is very much examination oriented. There is much emphasis on passing examination, which is predominantly writing tests (theoretical) through which science skills acquisition is rarely assessed. There is hardly

the use of comprehensive approach i.e. combination of written tests with practical exercises, assignments, projects, field trips and so on (Ezeh, 2005). Teachers are continually under pressure to cover the generally content - heavy syllabus and prepare students adequately to pass the examination often within limited time frame.

Prospects of Science Educational Policy Implementation in Nigeria

Implementation of educational policy in Nigeria will go a long way to benefit the nation and all the stakeholders in the educational system. Some of these prospects are:

1. Quality Decision: It is obvious that educational policy implementation helps to fecundate well researched, tested, reliable and constructively criticized decision. It makes decisions easier as well since the day to day decisions can be extracted from the impressions in the policy blueprint. 2. Educational Stability: Consistency of decisions stabilizes educational system and this is only possible with the implementation of educational policies. In this case, the operational guidelines of schools or educational system do not depend on the administrative officials and so, a change in administration does not destabilize the educational system.

3. Sense of Direction: Educational policy gives a sense of direction when its implementation isin progress. Everyone in the school system knows what expected in particular 8 situations are. Results of actions are predetermined because practical guidelines are available. All stake holders become aware of the principles at play in every decision in the school system.

4. Orderliness of Action: Policy implementation ensures orderliness in the educational system.No one does what he or she likes. People know what they are expected to do and how to do it. In this case, there is uniformity of action and similar processes. This ensures orderliness and eschews confusion and anarchy.

5. Cost Reduction: Administrative expense that goes along with regular decision-making isreduced considerably when educational policy is operational and fully implemented. The administrative officials do not have to congregate always, in all cases, to waste time and money in order to take administrative decisions since some of these decisions are already contained in policy document. What is just needed is for the administrator to look at the policy document and give their verdict in the line of particular situation covered in the blueprint.

6. Assurance of Justice: Implementation of educational policies gives workers confidence thatthey will not be maltreated at their places of work. Policies are there to ensure that everybody is 'measured' or appraised based on the policy guideline. It does not matter whether the administrative officials like a particular teacher or not. What matters is what is contained in the policy statement. Every worker is judged by the policy statement. There is no preferential treatment.

7. Responsibility and Control: The knowledge of one's responsibility and sense of control is oneof the assurances of educational policy implementation in Nigeria. It has been pointed out that one of the obstacles to educational development in Nigeria is the issue of responsibility and control that leads to conflicts between the Federal, State and Local Government in the management and control of various levels of education (Adeyinka, n.d). This idea of responsibility and control is bound to be permanently solved if 9 educational policies are well implemented as defined. Each tier of government will know its level of responsibility and control at each levels of education in the country.

Challenges Militating against Quality Assurance in Policy implementation of Science and Technology Teacher Education

The challenges affecting quality assurance in policy implementation of science and technology education are many but in the subsequent paragraphs a few of them will be discussed.

i. The Period of Pre-Service Training: The number of years teachers are exposed to learning skills or arts of teaching is relatively small. Prominent education scholars like Okebukola, (2005) argued that the B.Ed/B.Sc Ed programme in Nigerian Universities are education loaded to the detriment of the teaching subjects and have therefore canvassed for adjustment in favour of teaching subjects. The, period for training a graduate teacher in the university is relatively short when compared to those of other such professionals as doctors, pharmacists or engineers. ii. Quality Assurance and Standards Agencies It is common place in Nigerian tertiary institutions to find out that they operate freely and independently with very limited supervision by the agencies responsible. Academic programmes are run without periodic checks. Where they do take place, it is common place to find out that, accreditation is granted even when there are noticeable problems. According to Tahir, (2008) we sometimes become laughing stock to bureaucrats and policy makers in government when we fail to establish any harmony between budget requests and accreditation reports. Whereas there is high positive accreditation score of a programme on one hand and a fat budget request for the provision of basic facilities, equipment and personnel for the programme on the other hand.

iii.   Production of Inadequate Number of Qualified Teachers: this is a quite noticeable challenge in our institutions of learning. In this regard, Obanya (2006) in Okeke, (2008) opined that the Colleges of Education and University Faculties of Education operate below capacity in terms of enrollment relative to those applying to the universities. Okeke referred to a press release by JAMB in July 2007, in which the registrar regretted that in-spite of the emphasis on technical and teacher education, Nigerian youths are systematically shunning Technical and Teacher programme. In a research study by Akinbote (2007), he showed that the few students who opted for teacher education are those who could not secure admission elsewhere or those who wished to use the Colleges of Education as stepping stones to other institutions.

iv.   Inadequate Funding The issue of funding is closely related to the production of poor quality teachers. The lack of adequate infrastructure and facilities for full development of teacher's competencies leaves us with incompetent and poor motivated teachers and consequently half baked college products.

v.   Inconsistency in Education Policies It is true that Nigeria has formidable policy to guide the enterprise of education in this country; in fact it may be seen as one of the best things to have happened to strengthen education. However, there are many reviews of National Policy of education (NPC) which took place in 1981, 1998. 2004 and2008. All these were occasioned to accommodate innovations and changes in the educational system since the society is dynamic. But the rate if too frequent can be a spanner in the wheel of progress. New policies emerging with every in-coming administration. According to Okeke, (2008) a typical example of inconsistency in policy is the education reforms embarked upon by the then Minister of Education Oby Ezekwesili which came with a fire brigade approach and almost threw the education sector into turmoil. During a NBC meeting in Katsina 2007, the new minister was asked if the reforms will be sustained to which she replied that "they will be reviewed to ensure that they conform to the rule of law." Another disturbing issue with regards to policy formulation and regular changes is that most of the policies are usually drawn up without our institutions today.

Recommendations

Science is one of the most powerful instruments for enabling all members of the society to face new challenges and to find their roles as productive members of the society. The issues that Nigeria must address in order to evolve enlightened vision of science education will include the following: -

1. Implementation of standing educational policies.
2. Enhancing the status of science teachers as well as science and technology programs ininstitutions of learning.
3. Examination bodies and all that are concerned with assessment should structure their questionsin a fashion that will cover the various levels of cognitive, affective and psychomotor levels, from relatively low to higher levels.
4. The content of our curriculum should be reduced as they contain more concept and fact whoseexamples are foreign. Doctrine of ethno-science should be included.

5.Empowering Quality Assurance and standard Agencies: Quality assurance and standards agencies like NCCE and NUC should as a matter of urgency deliberate and implement policies that are of standard and expose those anomalies in the system that

Hamper progress from time to time. Where saboteurs are discovered then let the be shown the way out There should be a dynamic teacher curriculum to guarantee a conducive learning environment, subject teachers should be trained and re-trained for them to be effective and conduct their responsibilities well.

6.   Involving Stakeholders in Policy Formulation and Encourage Consistency: All stakeholders in the education enterprise like parents, teachers. PTA,

AMCOPPSS,

NUT, TRCN, STAN, Provosts, Rectors and Vice Chancellors should be involved early enough in policy formulation to chart a way forward. Also the usual practice of successive government in power abandoning previous governments' policies, projects and programed irrespective of value should be avoided as much as possible. Unless and until we learn to sustain good policies and programs, the education sector will continue to suffer.

7.   Funding should be made a top priority of government. This will ensure necessary infrastructure; classrooms, materials and other necessities can be procured for students and be made available with little or no cost.

Conclusion

It is an indisputable fact that only education could prepare the individual with knowledge, skills and attributes necessary for mental liberation and gainful employment in a changing and competitive world. In this discourse, a

number of factors or problems have combined to impede the implementation of science education policies in our society. Some possible measures have been offered. The practice of these suggestions has potential for eliminating the problems of Nigeria's science education and thus paves way for better science literacy.

References

Academic Staff Union of Universities, ASUU (2002). The staff of the nation. *Publication of ASUU*.

Adebisi. Y (2008) Education is one of Yar'adua's Seven point Agenda. *New Nigerian Newspaper* Nov. 11th(2008).

Adeyinka, A. A. (n.d). *Current problems of educational development in Nigeria.* Retrieved from www.unilorin.edu.ng on 25/06/2016.

Agboghoroma, T. E. (2006). Repositioning science technology and mathematics (STM) education in Nigeria. *Journal of Research Development. 7(2)1-5.*

Agbunno, J. A. (2006). Perspective in universal basic education. *In: annual conference of association for encouraging qualitative education in Nigeria Held at Benue State university, Makurdi.* Association for Science Education (2004). Science education in schools. *w w w . t i r p . o r g / p u b / d o c u m e n t s / T L R P - s c i e n c e - c o m m e n t o r .*

Akinbobola, A. O. & Ikitde G.A . (2008) Strategies for achieving quality assurance in science education in Akwa Ibom State of Nigeria. *Africa Research Review: An international multidisciplinary journal,* Ethiopia, 2(3):146-159.

Akinbote, O. (2000) Problems of Poor Quality in Primary School Teacher and Preparation A Study of Nigeria's Colleges of Education. *African Journal of Education Planning and Policy Studies* 1(1):33-39.

Baike (2000). Enriching Science, technology and mathematics education: Problems and prospects. A keynote address. *STAN 41st Annual conference proceeding.* Ibadan: Heinemann educational books.

Bajah, S. T. (1982). *Teaching integrated science creatively.* Ibadan: Ibadan University Press. Besmart – Digbori, E. D. (2008). Science and technology education: Challenges for the 21st Century. *Journal of research development. 10(1) 28-32.*

Bisong, J. O. (2000). Quality and competence in teacher education. In A. M. Wochocha (Ed), *Quality in Nigerian Educations Agenda for Action.* Port Harcourt: Osia International Publishers Ltd.

Ciwar, A.M. (2005). Science Technology and Mathematics (STM) education and professional development. Key note Address Proceedings of the 46th Annual Conference of STAN. Ibadan, Heinemann Educational Books (Nigeria) Plc.

Eniayeju F. A. (1997). Curriculum at the tertiary Level: Relevance and functionality. *A lead paper presented at the 2nd annual regional conference of the world council for curriculum and instruction (WCCI), federal college of education, Kano, 20-24 October.*

Ezeh. D. N. (2005). Science technology and mathematics (STM) education in Nigeria. *Journal of research development. 7(2) 1-5.* Federal Government of Nigeria (2004). *National policy on education.* Lagos: NERDC Press.

Ezeugbor, C. O. & Nwachukwu, E. A. (2011). Adopting e-learning in university education: prospects and problems. *Unizik orient journal of education,* vol. 6 no. 1&2, 145-151.

Federal Republic of Nigeria (2004), *National policy education*. Abuja: Federal Government Press.

Gesinde, S. (2008). education can't develop without Improved funding.*h t t p : / / w w w . t r i b u n e . c o m . n g / 1 9 0 6 2 0 0 8 / t h r / e d u . h t l m*

Ihuarulam A. I. (2006). Repositioning the relevance and functionality of science in contemporary Nigeria. *Journal of research development. 7(2) 49-56.*

Jada, M.S. & Job, U.I.(2006). Quality assurance in the education of persons with disabilities: The way Forward. Paper presented at the 16th National council for Exceptional Children (NCCE) at Federal College of Education(FCE) Yola 7th- 10th August.

Lawal, A (2008). A systematic frame work for quality assurance in teacher education. A lead Paper Presented at the nation conference on quality assurance in teacher education, organized by the national commission for colleges of education (NCCE) at the Federal College of Education, Zaria 15-16thDec, 2008. Lawal, S (1992). Planning education for national development the option for years ahead. In Ipaye B.(Ed) *Education in Nigeria; Past, Present and Future*. Ibadan, Macmillan.

Nkpone, H. L. (2006). Intervention strategies for repositioning science education in Nigeria. *Journal of research development 7(2) 57-66.*

Ocho, L. O. (2003). *Educational policy making, implementation and Analysis.* Enugu: New Generation Books.

Okeke, E.A.C (2008). Attainment of the seven-point Agenda: Challenges for teacher education, being a lead paper delivered at NCCE National Conference in F.C.E, Zaria Dec. 2008.

Okebukola, P. A. (2007). Innovations and best practices in teacher education in Nigeria. A lead paper presented on the 1st international conference of teacher education, University of Lagos, June 25, 2007.

Osobonye, G. T. (2007). Science education for all: An assessment of science education policy implementations for capacity building in the UBE scheme. *Journal of qualitative education, 3(3) 120-125*

Ogbonnaya (2014). Educational policy implementation in secondary schools in Nigeria. In G. O. Unachukwu & P. N. Okorji (Eds.). Educational management – a skill building approach (pp. 647-652). Anambra: Rex Charles & Patrick Limited. Oriaifo, S. O. (2006). *Planning and Implementation of policies in Nigerian education: Issues, problems and prospects.* Benin: Dasylva Influence Enterprises.

Tahir, G. (2008) Vision 20:2020 and the imperatives of teacher education in Nigeria: Being a Key note addressed at the NCCE National Conference Education, held at FCE Zaria, Kaduna State Dec. 15, 2008.

Uchenna, C. (2006). Repositioning science education in Nigeria. *Journal of research development 7(2) 87-96.*

Umar, A. (2008). The teacher education curriculum to Nigeria: An Agenda for reform. Paper delivered as the 3rd annual distinguished guest lecturer of federal college of education Yola on the 22nd of July 2008.