

Nigerian Teacher Education for Global Competitiveness: A Critique of Pre-service Teacher Curriculum

Udoye, Ngozi T. Ph.D.

Abstract

This study discusses and critiques the curriculum used to prepare professional teachers in Nigeria. The discussion is an effort to explore teacher education as a preparatory tool for global competition. The author's opinion is presented based on what pre-service teachers and those in the field believe about their being able to meet global competition. Formal teaching-learning starts the moment a child steps into the four walls of a school. This formal learning makes an upward move, though in pyramidal form, until a time the child – now adult – is ready to contribute to the national development in order to launch the nation into global competitiveness. To a large extent, this readiness depends on the quality of the education received. The quality of education received depends on the quality and competence of the teacher, whose quality and effectiveness depend on the teacher-education. Meanwhile, no nation can compete rigorously in this milieu if science and technology are not strictly significant parts of the teacher education curriculum. In the researcher's views, Nigerian teacher education curriculum is robust but the marginal pre-service teacher enrolment in core science and technology subjects and the preparatory processes jeopardize the production of teachers. Hence, human and material resources – soft and hard – needed for authentic training of global competitors are not produced. It is recommended that the Nigerian government should provide attractive reinforcements to encourage its young citizens to choose teaching profession in science-

Udoye, Ngozi T. Ph.D.

Email: nt.udoye@coou.edu.ng

Department of Educational Foundations

Faculty of Education

Chukwuemeka Odumegwu Ojukwu University

Igbariam, Anambra State, Nigeria

related subjects. Also, it is recommended that stringent processes of ensuring quality implementation and instruction of teacher education curriculum be put in place by the government.

Keywords: *Global competition, Educational bi-activity, Quality education, Teacher education, Standards, Pedagogy.*

Introduction

The general presupposition of the term “quality” is excellence. When people speak of quality education, others immediately think of an education which is marked with and assured of excellence. Mohammed (in Nworgu and Bidmos, 2012) refers to quality assurance as that which is a systematic checking for input and output processes of products to ensure they meet specified requirements and minimum standards. One who has received quality assured education is the person who has the education that sets him or her apart and distinguishes him/her from his/her class or counterparts. Usually, the essential characteristic that marks peculiarity in an education received is the quality or lack thereof in the expression of the learning achieved by the educated. Ferrari (2002) used the terms *excellence* and *quality* interchangeably in his description of special educational endeavours. The quality of any received education is measured when examination or a problem is presented to the one who receives the education. The degree of excellence is further assessed or evaluated within the local, national or international benchmark along with others who receive same level of education.

Structures and systems set in place, or their absence, makes or mars the quality of education a child is supposed to receive. Citing Yoloye (1976), Mbakwem (in Nworgu and Bidmos, 2012) listed six considerations for assuring quality education. They are facilities, teachers, instruction, evaluation procedure, administration/management, and morale (Nworgu & Bidmos, 2012). Curriculum is assumed to be soft structure and system of formal education. The quality of the curriculum and the six considerations above can be robust or watered down. The quality of the above-mentioned systems and structures defines the quality of any education. When education is said to be watered down, people insinuate that these systems and structures as designated are seen to be deficient in their

operations. When this happens, even those who are not in the system can easily observe the side effect in a given society. It is at this point that some describe such education as that which is 'compensatory' and no longer qualitative.

Nigerian learners in most cases do not have the freedom to choose or evaluate their teachers and their curricula. Whether a teacher teaches well or not, children still go to the school. Whether a teacher sticks to or deviates from the curriculum, learners still attend to the instruction presented. One can choose which physician or lawyer to go to but school children seem to have no choice as to who teaches them. Whether resources are available, amenities are provided or learning is not going on well, teaching still goes on and learners sit to listen to whatever is presented. Unfavourable conditions sometimes prevail in Nigerian schools. In these conditions, school children still attend to instruction. When this happens, someone is usually responsible, namely the government or the proprietor. Even when the condition is most deplorable, teaching still goes on. Nigerian learners unlike their counterparts in the developed country, at least from higher education level, seem to have no voice. Stakeholders and government could provide what Zimmerman and Schunk, (2003) term 'cultural enrichment' as opposed to 'cultural deprivation' by giving the learners some voice such as in the evaluation of their teachers and their input on curriculum reviews. The teacher and the curriculum make to define what could be called quality education.

A firm control over schools and the choice to provide quality education is what distinguishes a nation and marks it as developed. The problem is that it is not always easy to measure 'quality education'. Human resource industry is the slowest when it comes to measuring the dividends of education, or even education research. In any case, the curriculum and the teacher quality can be assessed when proper rubrics are put in place.

Professionalism involves three distinct but related constructs, namely *content-knowledge*, *pedagogical-knowledge* and *pedagogical-content knowledge* (Davis & Krajcik, 2005). In other words teacher education programme entails content knowledge of Nigerian 6-3-3-4 curriculum – depending on the level to be taught; pedagogical knowledge of teaching as an art, a science and a profession; content-procedural knowledge that

requires creativity and adjustments in the classroom, and metacognitive knowledge of continued learning as well as development of learning ability. Even under the most robust curriculum, it is the extent of development in the above variables that defines competent professional teachers.

In a classroom lecture, Morgan (2005), an educational psychology professor, categorized teacher education courses into above three, namely those that provide content knowledge, those that train for pedagogical knowledge, and those courses that help teachers develop metacognition in content-pedagogical knowledge. This is another way of saying that the programme involves teacher education curriculum, teacher development practices and continued learning activities that train for expertise. They form the core of improving the goal of schools for the nation (Desimone, 2009; Okafor, 1988). Darling-Hammond and Youngs (2002), explaining the term “highly qualified teachers”, posit that teachers matter for student achievement, but teacher education and certification are not related to teacher effectiveness or quality.

One can make a case that a worthwhile curriculum of teacher education should prepare students to be not just thinkers but critical thinkers, who continue to find ways to connect teaching-learning to achievement. Hence, pre-service teachers should not be trained to be just problem solvers, but creative problem solvers. Ability to take what is good in one context and make it better and even the best, beneficially, in another context, is a quality of being a critical thinker and creative problem-solver (Hoffman, 2007). It is a unique type of intelligence, and one advocates for this type of intelligence for Nigerian teacher education curriculum. Developing this intelligence involves developing the science of learning and research with strong reliance on technology.

Quality Education

The quality of education a nation provides is what puts such nation in the globalization race for success or for failure. Although there are no known universal measures of standardization, quality of education is commonly assessed in the graduates and their after-school lives. Globalization is believed to be a process, not an ideology. If that is so, then Nigeria must be prepared to join the process by its education,

characterized by its quality. One joins the globalization process when one is prepared to share ideas, skills of science, arts and technology with the rest of the world. Only when a nation joins in the process, by a presentation of its education products does the quality of the nation's education catches international interest.

Popular indices are used in measuring a nation's development and its education quality considered to be or not to be standard. Such indices include *economics, politics, socials* and *geopolitics*. What is not clear is the yardstick for measuring these indices. However, it is worth knowing that these indices to a large extent depend on the quality of education a nation can boast of. Education is not an index, probably because it is difficult to assess a nation's quality of education. It is a cognitive socio-cultural constructed phenomenon. Education is excluded from globalization indices for measuring authentic development, but the results of education are not, namely the graduates. That shows that, although education is not in the list of globalization indices for measuring development, it is silently imperative.

Technology advancement is another index not mentioned. Yet, it is a general understanding that a nation's quality of development is assessed by its technological advancement. Research is not included in the list. Research includes research production and research consumption. How does a nation share or receive information if their technology and methods of scientific inquiry are not on par with the rest of the world through research? Technology and research advancements are concomitant results of quality education.

Some scholars include *environmental* and *cultural* development as indices in globalization process for standards (Friedman, 2007). However, one wishes to describe quality education, it can be argued that any other development or advancement hinges on the quality of education for the given society. Any competitor in the globalization process that does not take into consideration all the aforementioned indices cannot measure responsibly and intelligibly when it comes to assuring quality and standards of education needed to compete in the global race. Education is the propeller by which the rest of the indices are made better and improved, and the first and foremost component of education in this context is teacher education.

Section 18 of the 1999 Nigerian Constitution articulates the importance of science and technology. Science and technology should be emphasized in the teacher education curriculum because these are concrete tools in the doorway of global competitiveness. However, attention should be paid to authentic efforts made to protect national interests and African values and 'rights' as the Constitution Section 19 and its subsections provide. Okoro, (2012) points out that learning achievement is measured by the use of what is learned in problem-solving and in the development of a given society. If the nation's learning falls short of becoming problem-solving tools, then it is failing its children.

Teacher Education in Nigeria

It is generally understood that a teacher has the power to make or mar a student. Gruwell (2007) recognizes the tremendous power invested in a teacher to make or mar students and which the teacher can use to utmost benefit. The teacher can turn a class of potential loss to a class of full gain. She or he can make the teaching profession a jealous one for those who read her/his works. Teaching presents itself as the oldest profession, in line with medicine and legal profession. Nonetheless, the concept and praxis of teaching and teacher education in this millennium have changed dramatically from how they started. Pedagogical content knowledge (PCK) and the curriculum have become sophisticated. Teachers who are trained in the profession are expected to meet up with the sophistications of the PCK and curriculum in the field.

Teacher education and pre-service teaching did not develop at the time teaching as a profession came into cultural scene. Formal education came into the scene and lasted for centuries before formal preparation for teaching profession was introduced. Teacher education did not come into formal system until after the post-Renaissance in the later part of 17th century. Okafor (1988) articulates that the initial champions of teacher education were the Jesuits and Christian Brothers. Although there has not been historical consensus among scholars as to which year teacher education as practised in Nigeria was introduced, what is certain is that the sophisticated versatility of teacher education programme and its robust curricula did not come into effect until early part of 20th century.

The early stages of teacher education programme in Nigeria were parsimonious. The process has, since then, witnessed increased sophistication as it works towards meeting the needs and signs of the time. The 21st century teacher education programme in Nigeria has become more systematic, demanding, and increasing in quality of robust sophistication related to quality of teacher educators, 'quality of curriculum, quality of methodology for curricula implementations' (Godley, et al 2006; Okafor, 1988). These processes and products of teacher education have continued to be more sophisticated through research, as the times and societies become more globalized and developed.

Research has become a very important part of training teachers. It has become a significant component in the teacher education in this 21st century literary culture. Societies evolve as they develop; therefore, research becomes a tool to keep abreast of trends. Pre-service teachers are prepared to be not just research producers but research consumers as well. The divide between researchers and practitioners insinuates dichotomy between these communities (Hubberman, 1999). This dichotomy should not exist if one understands the important position of learning in teaching, and the inseparableness of teaching and learning. Research satisfies the learning piece, while teaching satisfies the practice part.

Teacher education vividly brings out the concrete nature of *educational bi-activity* of teaching and learning (Udoye, 2007). When teaching is spoken of, learning is implied because one presupposes that someone/something is teaching. Teacher education prepares teachers who are forever learners. It trains teachers who are perpetual learners. In order to instruct well, teachers learn what is going on in their environment as well as in the world. *Once a teacher, forever a learner*, the saying goes. Many teacher education scholars agree that training teachers is concomitant to training them to be learners (Fishman *et al*, 2003; Grossman & McDonald, 2008; Udoye, 2007). Teachers are change-makers. They learn what is going on in the world in order to bring about the desired change in their society without jeopardizing the authentic socio-cultural 'rights' of their society.

Donnelly (2003) encourages the preservation and strengthening of

positive African morals, traditional values and cultures. These are what the writer terms African 'rights'. The statement above suggests that the universal human rights must be interpreted in light of socio-cultural contextual realm of Nigerian society. To learn to teach the African child who will be tomorrow's teacher should be done with one hand open and the other closed. To do this with globalization indices on one hand and African 'rights' on the other hand is recognition that the African child has something special about him or her. That specialty is what the African child, among other things, shares at the global village. These African 'rights' could be the edge which the child of this continent has over others in the global competitiveness. Therefore, the Nigerian curriculum must be shaped with globalization standards on the one hand and the African *rights* on the other.

Related to teacher education is teacher development. Both commence at the first semester of 100 level of teacher education. Teacher development continues after teacher training, until the end or termination of the teaching profession. Teaching implies continued learning and development. Continued learning must be measured to ensure advancement and improvement in the curriculum and instruction. Stakeholders have the responsibility to ensure that the curriculum is regularly revised; and educators' development and continued learning are measured, qualitatively, to ascertain that standards are maintained. Educational bi-activity and inherent curriculum have to contain defined conceptualization, systemic methodological and measurable benchmarks for evaluation and assessment. The question that stands out here then is how are Nigerian Faculty and College of Education teachers evaluated and assessed? This could be an area for another separate research activity.

One cannot deny the fact that Nigeria is a research producing country. The challenge that faces the nation is documenting impactful researches for global access, at least those that provide solution to existing knowledge, fill gaps in knowledge, and predict and provide information related to way forward. The hope of the government, presumably, is that teachers should fill this gap through curriculum implementation of educational objectives. This is one of the ways a society is assessed in its educational participation at the global level.

Technology is an indispensable tool in any effort to showcase what a nation is doing with regard to its education and the products. Hubberman (1999) argues that impactful research is that which informs practitioners, who in turn provide information about problems that need further investigation for improvement of practice. The author is of the opinion that it is the interaction between researchers and practitioners that sharpens and improves teacher professionalism and its standards, and technology is the midpoint for this interaction.

The Ashby Commission of April 1959 was introduced to plan an engineering mechanism for Nigeria's education needs at the levels of post-school certificate and higher education for the following twenty years. Nigeria's post-civil war education policy has since then been changed and revised more than twice. It was Ashby commission that first articulated for Nigerian government that “education is a seamless web” (Okafor, 1998). It was this commission that sharpened an understanding that the elementary/primary school pupil of today is the secondary school student and teacher education student of tomorrow, and he/she will be the teacher of the elementary/primary pupils and secondary school students of that tomorrow.

Pre-service Teacher Education Curriculum

Nigerian Universities Commission's (NUC, 2007, 2011) stipulations propose that teacher education curriculum should take into consideration three major categories, namely foundational, professional and specialization areas.

- A. Foundational curriculum includes courses such as History of Education, Philosophy of Education, Psychology of Education and Sociology of Education.
- B. Professional curriculum includes courses such as Curriculum and Instruction (C&I), Educational Administration and Supervision (EA&S), Measurement and Evaluation (M&E), Information, Communication and Technology (ICT) in Education and Educational Research Methods.
- C. Specialization curriculum describes those courses which prepare the student-teacher to focus on an area or subject of interest. These are grouped into six, namely

Integrated Subjects; Education Specialization; Arts and Humanities; Sciences; Social Sciences; Library Sciences.

There are other courses that may not show in any category below. This does not insinuate that such courses are irrelevant. Courses such as Teaching Profession, Learning Psychology and so on are considered important in teacher preparatory programme. Some of these courses are extensions of and further instructions on the core or major curriculum of teacher education.

Population of Preservice Teachers Studying in Colleges and Universities in the South East Nigeria (Udoye, 2015)

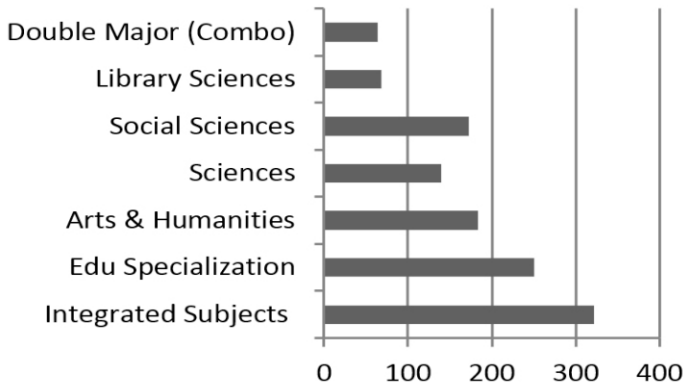


Figure 1: Courtesy: Seminar Study of M.Ed. Students in Educational Psychology, COOU, 2015

Integrated Subjects

- Basic Science Education
- Business Education
- Creative Arts/Theatre Arts
- Basic Education Technology
- Integrated Science
- Language Arts
- Social Studies
- Technical Education

Education Specialization

- Adult/Continuing Education
- Early childhood Education
- Educational Administration/Management
- Elementary/Primary Education
- Guidance and Counselling
- Home Economics
- Physical and Health Education
- Special Education

Arts and Humanities

- English Language, Literature/Literary Studies
- African Language and Literature (Efik, Igbo, Hausa, Yoruba, etc.)
- Modern European/Asian Language (German, French, Chinese, etc.)
- Arabic
- Christian Religious Studies
- Islamic Religious Studies
- History/International Studies
- Music
- Language and Communication Arts

Sciences

- Agricultural Science
- Biology
- Chemistry
- Computer Science/Statistics
- Mathematics
- Mathematics/Statistics
- Physics
- Technical Education

Social Science

- Political Science/Government
- Economics
- Geography

Library Science

- Library and Information Resource Management

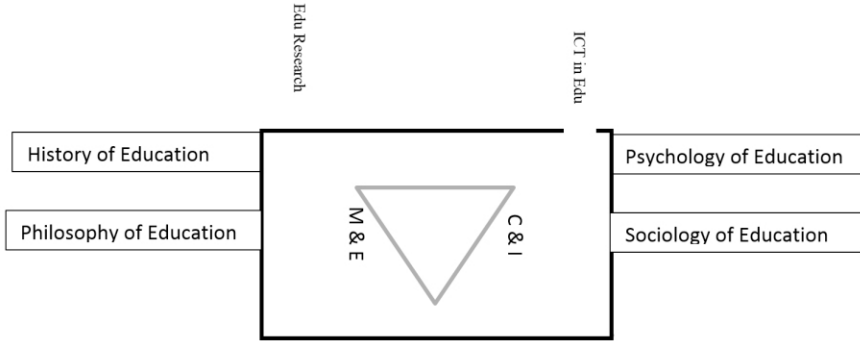


Figure 2: Graphic Presentation of Nigerian Teacher Education Curriculum (Modelled according to the NUC BMAS 2007, 2011)

EA & S: Educational Administration and Supervision

M & E: Measurement and Evaluation

C & I: Curriculum and Instruction

Critiquing Teacher Education Curriculum

There are two types of teacher education curriculum, namely soft and hard curricula. All the covert activities, systems and processes that go in the training of teachers constitute the *soft* curriculum. The physical materials and structures used in the training classify as *hard* curriculum. What the educators do as they model teaching profession to the students either during teaching practice, research practice and seminar presentations constitute the soft curriculum which the educator may not be aware are being modelled to the student-teachers. Many educators are not aware of the soft curriculum which they impact upon their pre-service teachers. The reason why many educators could involve themselves in examination malpractice such as leaking the papers and other corrupt practices is because they are not conscious of the danger. Most Nigerian problems with teacher education curriculum are related to the abuse of soft curriculum. When a teacher-educator who is not qualified is allowed to teach any teacher education subject, mediocrity and compromise begin at this root of education. Unlike medical and legal professions, educators do not seem to cherish or jealously guard

their teaching profession. That could be the reason why many students are not interested in enrolling in teacher-education programmes.

From the study done by Udoye (2015) and his students, the highest enrolment figure of pre-service teachers is in Integrated Subjects such as Basic Science, Social Studies, Integrated Science, Business Education, and so on. These subjects are taught at the primary and junior secondary school levels, so that pre-service teachers who study them are qualified to teach these levels. The number of student-teachers enrolled to study Arts/Humanities, Social Sciences and Education Specialization outnumbers those enrolled to study the sciences. A critical question would be, 'Does Nigeria need more qualified core science teachers?' If the presenter assumes the answer to be 'Yes', then the next question would be, 'How does the nation prevail on more pre-service teachers to enrol in science education courses which are those needed to prepare 21st century global competitors?' These and other questions become crucial concerns require deep reflection on.

The place of the child in the world cannot be over emphasized. On November 20, 1989, the Convention on the Rights of the Child was adopted without vote. The charter for the child's rights was developed from and within the fundamental human rights for the child, with optimum understanding that the child of a given society is an individual and a potential adult contributor in the given society. In a similar understanding, the education of the child receives prominent attention in the Human Right Documents at No. 53 – Convention on the Rights of the child, 1989; and No. 114 – African Charter on the Right and Welfare of the child, 1990 (Brownlie & Goodwin – Gill, 2006). Isyaku (in Unachukwu, 2015) in his efforts to articulate the relevance of “open schooling”, captures the efforts of the Nigerian government in providing education for “over 9 million” *almajiris* (the nomadic children). One wonders if this open schooling can provide for the Nigerian child what is needed to prepare him/her to compete globally. The expectation is that more should be done.

Udoye (2015) randomly sampled 1200 pre-service teachers, 600 from colleges of education, and 600 from universities. The study asked participants how long they actually and honestly spent on teaching

practice. Results of the study revealed that 90% of the college of education students did not compromise their one semester teaching practice while only 10% of the university students in Faculty of Education did not compromise their teaching practice. The researcher believes that college of education students tend to be more serious with their teacher education curriculum than their university counterparts (Udoye, 2015).

In the same study Udoye (2015) revealed that there was significant difference in the opinion poll among teachers who *agreed* and those who *disagreed*, that Nigerian Teacher Education curriculum was meeting global standards for education. In that study, the older professionals in teaching were of the opinion that present curriculum for teacher education looks robust but the teacher education graduates do not represent the robust curriculum with which they are trained. It seems that the longer one stays in teaching profession and garners experience, the more deficiencies one sees in the curriculum. This should be a concern to stakeholders.

Table 1. Correlations Table of a Survey on Teacher Education Curriculum

TECGS Survey Poll	No of Yr in Teachg	Degree_Cert	No of Prof Devt in Yr	Age
Sig. (1-tailed) .047	TECGS Survey Poll		.000	.000
No of Yr in Teachg	.000		.000	.003
Degree_Cert	.000	.000		.003
No of Prof Devt in Yr		.047	.003	.003
Age of Participants		.240	.188	.071
.068				

a. Dependent Variable: TECGS Survey Poll

In that study by Udoye (2015), the age of participants suggested significance in the responses. The younger teachers and fresh graduates of teacher education schools believe that the curriculum of teacher education as stipulated by the NUC need not be changed “*if used well*”. The capture *if used well* was noted because the clause is where all those studied were agreed. One thing is to have good and robust printed curriculum, but another, and more importantly, is to use it well in the

training. However, the older teachers and those who have been in the field for more than fifteen years worried that the curriculum of teacher education is *not producing the right teachers for 21st century*. The implication here is that curriculum review should be anticipatory and rigorous in implementation. Otherwise, teacher educators may be failing the nation and its citizens.

Udoye (2015) in the study, exposed that a teacher's education level, related to whether it is a Bachelor's degree in Education (B.Ed.), National Certificate in Education (NCE), or Nigerian Teacher's Institute (NTI)/Teachers Grade Two Certificate (TCII), had significant relationship to the responses provided by the participants. Those whose highest education was Senior Secondary Certificate (SSCE) provided minimal to no response. Those who had NCE said mostly "Yes" to the responses that asked *if teacher education curriculum is satisfactory in preparing 21st century teachers*. It seems from the study that the higher the education a teacher receives the more loopholes he/she sees in the teacher education curriculum.

Number of years in teaching when interacted with number of times a participant attended professional development conferences and workshops in the regression analysis showed $\alpha = 0.047$ at .05 of slim chance significance. Udoye, (2015) insinuated in the findings that conferences and workshops were not providing adequate pedagogical-content-knowledge (PCK) competence for older teachers related to the demands of present sophisticated school curriculum. This goes to suggest that teacher education curriculum must extend to engage teachers already in the field through on-going professional development if these teachers are expected to produce global competitors.

The curriculum used in preparing teachers requires a second look in order to continue to develop 21st century classroom teachers who develop citizenry that can compete. The teaching practice aspect of teacher education in Nigeria constitutes the praxis of the field after some substantive classroom learning and instruction must have been completed. Meanwhile, this practical aspect of learning how to teach seems to suffer insufficiency given the length of time student-teachers stay for teaching practice before they become qualified teachers. Nigerian University Commission and Colleges of Education

Commission require teacher education students to do practical teaching for one whole semester. In the presenter's opinion, this duration seems practically short. Still, some students compromise and manoeuvre this time-frame.

What works for Nigeria is what scholars call 'causal knowledge (Wadenanna & Hagmayer, 2005). The two authors describe causal knowledge as that type of knowledge that 'predicts' our tomorrow, 'explains' our today and manipulates events of yesterday so as to 'achieve' a greater tomorrow. This is an evaluative knowledge and this needs to be included in teacher education curriculum. It helps to know that the yields or losses of our today's actions will bring tomorrow's yields and losses if evaluative procedures are not put in place. Causal knowledge is urgently needed in teacher education curriculum for Nigerian universities and colleges.

Teacher Training for Globalization

Curriculum does not implement nor instruct itself. Professionals use curriculum to achieve educational objectives. The same is applied to teacher education curriculum. In this section the presenter discusses the importance of having competent professionals who can actualize the gains of teacher education curriculum.

Conscious efforts have been made to have one voice related to issues that pertain to human race, such as education for all (EFA). Nigeria is in the race, as a member of the United Nations. Hence, to train Nigerian students who can compete responsibly and intelligibly means that teacher education staff must continue to maintain certain standards and quality. First, there is need for appointments and retention of academically and professionally qualified persons as teachers and heads of education institutions. Second, the standards set in the national framework for teacher development and professional teaching standards must spell out what teachers should know and be able to do at every level of education and at the various stages of teacher–student professional development. Third, there is need to have “a set of professional standards for teacher educators who train new teachers” (National Policy on Education, 2013). Fourth, there is an urgent need for teacher education reform to ensure that standards and objectives stipulated in the policy handbook are maintained. The quality assurance

supervision of teacher education institutions must be thorough and strict in terms of curriculum implementation and instruction.

Comparatively, and in relation to other professions such as medicine and law, it is surprising to note that teaching professionalism which takes harder to develop in the field takes shorter time to train in the classroom and in the practice. From the early to the later part of the 20th century, practical teaching in Nigeria was done for a much longer period than it is done in this 21st century. Paradoxically, today's experiences of student-teachers, who have more sophisticated curriculum to implement and instruct but fewer years to train than their past counterparts, seem frustrating. Some serious minded student-teachers from overseas and across the nation have asked questions that should spark off some scholarly debate among educators. "Why does the teaching profession take a shorter time to train than the legal or medical profession?" "Which is more dangerous, to harm one person in the hospital or law court or to harm twenty five children in a class?" These questions should worry any deep thinking professional, no matter what, because every professional passes through a teacher from cradle stages.

What scholars argue is that teacher education programmes should take into cognizance the need for content mastery, knowledge development in research methodologies, pedagogical skills and other professional rudiments (Woolfolk, 2010; Sternberg, 2008; Udoye, 2007; Phye, 1997). These arguments do not consider the curriculum development piece. This consideration is a matter of fact, urgent as cognitive, behavioural and socio-cultural contextual studies in the 21st century take many dramatic turns in their development. The society depends on teachers and teachers-to-be to provide these needed on-going developmental studies and processes that capture what is needed for societal development and worthwhile competitions in standards.

No government can over spend on the education of its citizens. If any government wishes its society developed competitively, the government must invest in education of its citizenry starting from the teacher education classrooms. The GIGO principles apply most realistically in the education of citizenry, namely quality output of education significantly relates to the input. The quality of teacher education depends on the quality of the curriculum and resources provided and the

quality of education for any nation depends on the quality of teacher education. Gardner (in Abbeduto, 2004) continues to argue that whatever a teacher wants can be impacted in a child if proper attention is paid to the intelligences which such a child brings to the classroom. But first the teacher should be competently trained in his or her intelligences before he or she could help the child to train.

Human resource industry tends to be the slowest when we measure the dividends of education and research (Ugwu & Adekola, 2012). Science and technology developments are fast to measure their dividends, but the training of experts in science and technology takes time. The statement above accentuates the understanding that teachers and researchers in education are expected to regularly avail themselves of the opportunities for science and technology innovations in their professions in order to meet up with the scientific and technology speed of changes. Research is the best way to catch up with the events and experiences of fast changes inherent in sciences and technology developments.

In teacher training, the curriculum of teacher education programme emphasizes the use of research to drive learning. The practice of this is where the challenge faces the teacher educators. Ability to inculcate habit of learning and research comes to scholars through a long arduous task of training and rigours. Training for a self-regulatory expertise, according to Ericsson (1996) in Ferrari (2002), is recognition that expertise in professionalism can be developed through hours of deliberate structured practices often with the help and mentoring motivation of another expert. Educators who are expert researchers are those who can impact the skill of rigorous research practices to their students.

If educators and teacher-education students must regularly avail themselves of the opportunities for innovations in teaching professions, research production and research consumption must be used as bedrocks for educational activity (Udoye, 2007). Teachers and teacher-education students are expected to take into consideration, places and rooms for changes in curriculum, pedagogy, methodology and professionalization related to the advancement of the rest of the world.

Conclusion

No nation develops beyond its education and attendant quality thereof. What makes a nation's education to be considered of high depends, to a large extent, on the graduates. This paper engaged the fact that the quality of a child's education starts with the quality of education the child's teacher first received. No one can give beyond what he or she has. This maxim is not just for teaching as a profession but for other professions such as legal and medical. In order to compete globally, the curriculum of teacher education needs to be tailored with evidence-based method of inquiry, namely, research and technology. The paper discussed the important place of research in the curriculum of teacher education if Nigeria must keep abreast of the changing world. Rigours in the training of teachers related to their learning of subject-matter and practice of research provide the framework for any worthwhile implementation and instruction of curriculum that can be judged competitive on the world stage.

Citing previous studies, the paper presents that pre-service teacher-students' choice of specialization, related to programmes of study, tilts more towards arts and social sciences. Meanwhile, the most needed subjects in this 21st century are in the areas of science and technology. The feared consequences of this attrition in science enrolment for teacher education are that teachers who are coming out of training schools and colleges might not be those needed with skills, values and competencies to present Nigerian students ready for intelligible and global competition. To compete responsibly and intelligibly is a way to describe global competitiveness that does not erode socio-cultural goodness at the imitation of foreign.

The conclusion here is that the quality of any education depends on the quality of teacher education and its curriculum which depends on the quality of teacher educators' earlier education, and the circle continues. It is like the 'chicken and egg' prolix argument. Which comes first, the chicken or the egg? One also asks, 'which comes first, the pupil or the student-teacher'? The quality of the egg depends, to a large extent, on the quality of the hens' in-take and the quality of the chickens hatched depends on the quality of the eggs that hatch them. In a similar vein, the quality of teachers today depends on the quality of the pupils of yesterday and the quality of curriculum used in the instruction. The

pupils and students of today will be teachers of tomorrow, who will compete to present graduates ready to compete globally. Does Nigeria's teacher education curriculum in its implementation produce citizens who can compete globally? This paper is, hence, an attempt to prompt and provoke thoughts around reform for teacher education curriculum.

Recommendations

Nigeria has entered the global race for competition, therefore, there is an urgent need to evaluate the curriculum used to prepare teachers who will teach the nation's students for global competitiveness.

1. The first recommendation of this paper centres on the need for the Nigerian government to consider teacher education curriculum reform.
2. The second recommendation is that there is need to provide authentic reinforcement by the government which will encourage greater enrolment of science and technology pre-service teachers.
3. Nigerian teacher education should focus on what works for the nation. While the nation shoots for globalization standards, the learning tailored in the curriculum of pre-service teachers should be contextually problem-solving based.
4. Tangential to the above recommendations is that teaching practice period and years of training for teachers should be reconsidered for extension.

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