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**NIGERIAN PHILOSOPHY OF VOCATIONAL TECHNICAL EDUCATION AT POST
PRIMARY SCHOOL LEVEL: AN OVERVIEW**

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Abstract

The major essential requirement necessary for national development of any nation is Education. Centered on socio-economic and technological emancipation, it is critical to self-sustaining process for generating transformation in the modern society. This paper focuses on Nigerian philosophy of Vocational Technical Education at Post Primary! Secondary School level and compared it with post Primary/Secondary grammar school and post Primary/Teacher education. The findings as revealed in the review of the curriculums reveal that post primary/Secondary grammar school and post primary teacher education were well articulated on how to continue at post-Secondary/tertiary Institution while so many huddles were placed for post primary/technical Vocational education on how to continue at Post Secondary/tertiary level. Recommendations were made to inculcate into the Nigerian Philosophy of Education, a well-articulated Policy to enable graduates of Vocational Technical Education to continue at Post Secondary/tertiary institutions without hindrance.

Introduction

Technical Education is that aspect of education which leads to the acquisition of practical skills as well as basic scientific knowledge (FRN, 1985). Such type of education is here viewed as the foundation stone for Technological Development.

Vocational-Technical Education as the foundation stone upon which technological development of any nation is built is mostly not planned with better articulation into institutions of higher learning in Nigeria. Going by the national policy on Education, the aims of Technical Education should be:

- a) To provide trained power in applied science, technology and commerce, particularly at sub professional grades.
- b) To provide technical knowledge and vocational skill necessary for agriculture, industrial, commerce and economic development.
- c) To provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man.
- d) To give an introduction of professional studies in engineering and other technologies.

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- e) To give training and impart the necessary skills leading to the production of craftsman, technicians and other skilled personnel who will be enterprising and self-reliant, and
- f) To enable our young men and women to have an intelligent understanding of increasing complexity of technology.

An overview of these aims shows that the broad aims include specialization of work for efficiency at sub-professional grades. No provision for continuation to higher education for improvement on the background of workers. Improving educational background of workers has always had a positive overall effect on productivity. The final report of National Centre for Productivity and Quality of Working Life (1978) In America indicated that, “the improved educational background of workers was one of the most important factors in productivity growth during the post war era”.

Vocational/Technical education which emphasized on specialization of work and specialized skills variation for efficiency has no opportunity for continuation in institution of higher learning. This type of education therefore lacks merit in, terms of our philosophy of Technological Development and has come to be an education for a society that existed but no longer in sight.

“Vocational Education has gradually taken on greater responsibility for changing and improving our socio-economic environments. The future success of Vocation/Educational Education in meeting the challenges that has been thrust upon it will largely depend on the initiatives and competence exhibited by the leadership in launching a broad based and sustained programme of comprehensive planning – One that embraces all facts of Vocational/technical Education and effectively involves all the essential resources that are available to support the total endeavor”, Lammer”, (1978).

In accepting what Lammer has said, it would therefore be in the National interest that the Vocational/Technical Education be improved to take into cognizance, a broad based knowledge with greater responsibility for changing and improving our socio-economic environment. In recognition of these, the then Nigerian Educational Research Council sponsored a National Curriculum Conference in 1969 to review and update the National goals for education in Nigeria at all levels (Primary, Secondary and Tertiary). Their recommendations formed the basis for National Policy on Education in Nigeria (Daramola 1989).

Nigerian Philosophy on Education

In the frame work of Nigerian Philosophy on Education are the three main educational programmes at secondary school level. These were defined in the second National Development plan (1971-1975) and endorsed as the necessary foundations for National policy on Education: they are;

- Secondary grammar school
- Teacher Education, and
- Technical Education

Secondary education is the form of education children receive after primary education and before the tertiary stage: (FRN 1985). The broad aims of secondary education within our overall national objectives should be:

1. Preparation for useful living within the society; and
2. Preparation for higher education.

To achieve the stated objectives, the national policy had 7 plans. The 4th plan stated thus:

The junior secondary school will be both pre-vocational and academic. It will be free as soon as possible and will teach all the basic subjects which will enable pupils to acquire further knowledge and develop skills. The curriculum should be structured as follows:

CORE SUBJECTS	PRE VOCATIONAL SUBJECTS	NON-VOCATIONAL SUBJECT ELECTIVES
Mathematics	woodwork	Arabic Studies
English	Metal work	French
Nigerian Language (2)	Electronics	
Science	Mechanics	
Social Studies	Local Crafts	
Art & Music	Home Economics	
Practical Agriculture	Business Studies	
Religious & Moral Instructions		
Physical Education		
Pre-Vocational Subjects (2)		

In the 6th plan, the Policy stated as follows:

The Senior Secondary School will be for those able and willing to have a complete Six year Secondary education. It will be comprehensive but will have a core curriculum designed to broaden pupil's knowledge and outlook. The core curriculum is the group of subjects which every pupil must take in addition to his or her specialties

A) CORE SUBJECTS

1. English language
2. One Nigerian Language
3. Mathematics
4. One of the following alternative subject — Physics, Chemistry and Biology.
5. One of Literature in English, History and Geography
6. Agriculture Science or a Vocational subject.

The core subjects are basic subjects which will enable a student to offer arts or science in Higher Education.

B) ELECTIVES

Every student will be expected to select 3 or those subjects depending on the choice of career up to the end of the second year and may drop one of the non-compulsory subjects out of the 9 subjects in the last year of the Senior High School course.

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Biology	bible Knowledge
Physics	Islamic Studies
Chemistry	Arabic Studies
Additional Maths	Metal Work
Commerce	Electronics
Economics	Technical Drawing
Book keeping	Woodwork
Typewriting	Auto Mechanics
Short Hand	Music
History	Art
English Literature	French
Geography	Physical Education
Agricultural Science	Heath Science
Home Economic	Government etc.

7th Plan had this to say:

The sixth form as at present constituted will be abolished.

Pupils will go direct from secondary school to Universities.

Teacher Education

The functional role of Teacher Education programme is the preparation of competent teachers who are knowledgeable in some area of knowledge and professional practices, (Ezewu, 1992). In the National Policy on Education, the purpose of Teacher Education is to produce highly motivated, conscientious and efficient classroom teachers for all levels of our education system. It should also make the teacher creative and committed to the teaching profession.

Section 9 sub-section 59, number 3 of the National Policy had this to say:-

“Since Primary education is the basis of an educational development, effort will be made to achieve and maintain both the quantity and the quality of teaching staff in the existing institutions at a high level”.

In sub-section 64, the process of achieving the goals has been enhanced by explaining as follows: For the primary level, the General Studies component in the primary school teacher’s training will be made up of the following subjects;

1. Social Studies
2. Mathematics
3. Language
4. Science
5. Cultural & Creative Arts
6. Heath and physical Education
7. Religious and Moral Education

**NIGERIAN PHILOSOPHY ON TECHNICAL EDUCATION AT SENIOR SECONDARY SCHOOL LEVEL
VOCATIONAL TECHNICAL EDUCATION**

Technical Education, as defined earlier in National policy on Education is “that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. The aims of technical education have been as enlisted earlier a-f in the introductory part of this paper. A comparison of the definitions of technical education with the Secondary Grammar School and Teacher Education show some inconsistency. The Secondary Grammar school and Post primary teacher education are comprehensively and operationally defined. This is because the core courses and elective courses to be studied in secondary and primary teacher education are stated along with their modules, while vocational – technical education is mainly defined in terms of skills required of the graduates to work. In its broad definition of Secondary Education, the national Policy States thus:

1. Secondary education is the form of education children receive after education and before the tertiary stage.
2. The broad aims of Secondary education within our overall national objectives should be.
 - a) Preparation for useful living within the society
 - b) Preparation for higher education.

The National Policy on Education has after the seven specific terms on how to achieve the stated objectives went further to define secondary education in terms of core subjects and elective both at Junior Secondary School Level (JSS) and at Senior Secondary School Level (SSS).

At the end of the listing of core and elective subjects is the note: “The core subjects are basic subjects who will enable a student to offer arts or science subjects in higher Education. The sixth form as at presently constituted be abolished. Pupils will go direct from Secondary Schools to university” Well-articulated.

Taking queue from Secondary Education is teacher Education while its aims and functions are clearly stated, the objectives are still operationally defined for primary school teachers at the post primary school level and subjects to be taught stated in section 9 of the National policy; sub-section 59 No. 3 was thus:

“Since primary education is the basis of an educational development, effort will be made to achieve and maintain both quantity and quality of teaching staff in the existing institutions at a high level”. (National Policy on Education, 1985).

In the above aims and objectives of Secondary and teacher education, it would be seen that the schemes are well articulated for continuation to higher education. The aims and objectives are stated along with the course contents which the graduates are supposed to undergo.

The vocational-technical education has been defined only in terms of the skills required of the graduates to work. While the aims of vocational technical education as in a.b.c.d. and f as earlier stated may apply better to the technical education at post-secondary school level etc, it is clear that the actual definition and the aims as stated in ‘e’ tallies with what happens in the technical education at post primary school level and from page one of the National Policy on Education to the last page, there is no place where the subjects to be taught in the technical colleges is stated. In the work of Eneyoh, Thomas & Ekeng (2012), education in its context is the acquisition of both physical and intellectual skills, to enable individuals develop into useful members of the society.

The case where our National Policy on Education expatiated on some areas of our education than in others is more in the spirit of replication than as part of a research for societal variations. It then becomes a theory or empirical foci which tend to shift toward one sector or aspect of the matter. Thus, the issue of the factors affecting the origins and expansions of our education in general tend to be slighted. If we consider the five main objectives as stated in the national Policy on Education, item No 1 has this to say “a just and egalitarian society” (i.e. favouring the doctrine of equal right) and item 5; “a land of bright and full opportunities for all citizens”. In the above objectives, one wonders how egalitarian is our society or what the full opportunity is for students who graduate from Technical-Vocation schools when they are not given opportunities to continue in universities easily.

The National Board for Technical Education (NBTE) Syllabus

According to the NBTE syllabus; “The general education components of the curriculum aims at critical subjects like English Language, Integrated Physical Science (Physics and Chemistry) and Mathematics to enhance the understanding of machines, tools and materials of their trades and a foundation for Post-Secondary Technical Education for the above average trainee. Hence it is hoped the trainees who successfully complete the trade training, and general education may be able to compete with their secondary grammar School counterparts for direct entry into the Polytechnics or Colleges of Education, (technical) for ND or NCE, Courses respectively”

While one would agree in totality the concept of teaching general education in technical college to enhance the understanding of machines, tools etc, as proposed by NBTE; one wonders why the NBTE still said that the trainee will compete for direct entry into Polytechnics or Colleges of education (technical) for ND or NCE, courses respectively. Why would the trainee with such technical and general education backgrounds, not compete in universities, polytechnics and Colleges of Education for Engineering courses, HND or NCE course respectively?

The certificate recommend for award by NBTE syllabus are:

1. National Technical Certificate (NTC)
2. Advance National Technical Certificate (ANTC) and
3. Federal Craft Certificate (FCC) By Internal Examination

1. National Techn Ical Certi Ficate

National Technical certificate (NTC) is a terminal Certificate awarded at the end of the three year training in technical colleges at senior secondary level.

2. Advance National Technical Certificate (ANTC):

As the name implies, it is the advance certificate of National technical Certificate. Going by the NBTE syllabus, a student with NTC should work for two years before he/she can be eligible for taking the ANTC.

3. Federal Craft Certificate (FCC):

This is an internally organized certificate examined by the school and moderated by state ministry of education. The course contents include all the trade and general education courses studied in the school within the three year programme.

Further Observations

In our society today, the name that is connoted with a certificate denotes the course contents. The name tells the observers the type of trainings associated with the certificate and biases the mind as such. The name on a certificate can as well make a lot of difference in admissions both inside and out-side the country. It is for this reasons that this paper decided to make observation in the name of some certificates and trade modules.

1. The scheme of work as designed by the NBTE is a broad based programme. It is more of a comprehensive education with trade and general education training inculcated. At the end of this programme, and outside the National technical certificate, another examination is conducted for the award of Federal Craft certificate (FCC). The name Federal Craft certificate is not synonymous with the subjects taken in these examinations for the award of this certificate. The “The Word Craft” means “skill or ability in something especially in handwork or the arts” (American Heritage Dictionary 1981). As a matter of truth, the subjects taken in the examinations for the award of this certificate are not limited to handwork or arts alone. The subjects include English Language, Mathematics, Physics, chemistry etc along with the trade subjects.
2. Some trade modules are designated with the name, “Craft practice”. Such trade includes (a) Mechanical Engineering Craft practice (b) Foundry Craft Engineering. However, the craft contents of these trades are no longer limited to craft studies. The trades have been broadened to include the general subjects hence it is proposed here that the names be redesigned.

Admissions

The admissions of graduates from technical schools into Universities or Polytechnics for Engineering Courses or even HND have been with many difficulties if not impossible. Going by the JAMB brochure for Universities, Polytechnics and Colleges of Education, the requirements to admit technical graduates are:

1. CITY and GUILDS (Inter/Advance/NTC/ANTC) Plus GCE OIL with at least 3 credits in Mathematics, Physics, Chemistry, Technical Drawing etc, and English required.
2. Full Technological certificate PLUS GCE O/1 with at least 3 credits in Maths, Physics, Chemistry, Technical Drawing etc English required.

The requirements had so been even though in the curriculum of the City and Guilds/NTC, we have integrated physical science, Maths and English being the communication media is not left out.

The reason for all the huddles in the admission requirements is due to the fact that policy makers for technical Education at secondary School level did not include aims and objectives as:

- (1) Continuity in University for improved background of work.
- (2) NTC examination will comprise Trade Subjects plus Maths, English, and Integrated Physical Science etc.

Model/Recommendation for Vocational – Technical Education at Secondary School Level

In search for quality Vocational – Technical Education at Senior Secondary School level, this paper recommends that Technical Education should be defined as:

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1. That aspect of education which leads to the acquisition of trade and applied skills, as well as Secondary grammar School critical subjects. These subjects should include English Language, Mathematics, Physical Science, Social Studies etc
2. The broad aims and objectives of Vocational/Technical Education at Secondary School Level should be:
 - (a) Preparation for useful and gainful employment.
 - (b) To produce students with improved backgrounds of work who enter the labour force with marketable vocational skills, and
 - (c) Acquisition of trade and general education that will enable graduates continues to tertiary institutions like Universities, Polytechnics, and Colleges of Education directly.
3. To achieve these, each of the students enrolled in Technical Education should choose one of the trade courses as the core/major courses and secondary education critical subjects as follows:
 - (i) English Language, (ii) Mathematics, (iii) Physics, Chemistry, Social Studies etc. at all levels. The examinations should be taken as such except English that will be only at NTC level.

Award of Certificate

The Vocational/Technical Education as suggested above if adopted, is more of a comprehensive education. It includes trade and general education to equal level of achievements. In line with the above therefore, it is here recommend that: (a) federal Craft Certificate as awarded at the end of the Comprehensive Vocational/Technical Education be re-designated to be: "FEDERAL TECHNICAL DIPLOMA" (FTD). (b) The name "Craft Practice", as connoted in some of the trades should be eliminated. This is because the name is not synonymous with the course contents. Such trades should be named:

- i. Mechanical Engineering Processes/Practice and Sciences
- ii. Foundry processes/Practice and Sciences
- iii. Printing Processes and Sciences etc.

Articulation

Effort should be made to ensure continuity between technical Educations at post primary School Level to tertiary Institutions. There is need to refine the present educational system to articulated educational continuum which will help individuals to pursue a career without loss of money and duplication of energy and time (Pennsylvania Plan for Vocational/technical Education, 1987). Education being a continuous process can always adopt modifications if it is in the light of improvement. Therefore:

- i. Holders of National Technical Certificate (NTC) Ordinary Level, (Trade technology and any other 3 general subjects) should be admitted into Universities etc, directly for B.Sc., B.Tech. etc.
- ii. National Technical Certificate holders should be allowed to continue for their Advance National technical certificate if they so desire. The clause of "Working for two years after NTC before going in for ANTC" should be removed since the work is not provided automatically.

- iii. Advance National Technical Certificate (ANTC) should be equated with Ordinary National Diploma (OND) in all facets.

Conclusion

Technical Education has been defined by National Policy on Education in terms of the skills required of the graduates to work rather than with the performance objectives. The paper agrees that the curriculum as drawn by NBTE is comprehensive and operational but disagrees with some of its stated objectives and processes. However, in the struggle for broad based objectives, to support the comprehensive technical education, a model of technical education at secondary school level that will provide for better articulation into institutions of higher learning has been proposed. In some other observations, suggestions have been made to take into accounts, that general education is introduced in the curriculum. It is hoped that, if the proposals made here are inculcated into the National Policy on Education, the issue of those outside the Vocational/Technical profession viewing it as an education for the acquisition of practical skills only will be a thing of the past. The graduates of Vocational/Technical Education will then have opportunities for going into institutions of higher learning with improved background of work.

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