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Vocational and technical education in Nigeria

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I. INTRODUCTION

Vocational and technical education in Nigeria has a chequered history. Given its humble beginnings, this aspect of education was misunderstood by educators in the larger society. Conceptually, educators could hardly differentiate between the terms vocational and technical education, while society had been led to believe that vocational education is for those who are incapable of pursuing academic programmes. Against this background, vocational and technical education has made slow progress from its earliest times to date.

For the purpose of clarity, vocational education is that skill-based programme designed for sub-professional level education and based on a specific vocation. Technical education, on the other hand, facilitates the acquisition of practical and applied skills as well as basic scientific knowledge. The major difference between the two terms is that, whereas vocational education is designed for a particular vocation, technical education does not target any particular vocation but gives general technical knowledge. Thus, while every vocational education programme is technical in nature, not all technical education programmes are vocational. This subtle relationship accounts for the interchangeable use of both terms in academic literature.

If we take Nigeria as an example, vocational education programmes are offered at the technical colleges while the polytechnics offer vocational and some technical education courses at the ordinary national diploma

level. As part of the improved fortunes of vocational education, the current National Policy on Education (1998) has accorded a section to it clarifying its objectives with respect to the entire education system. Furthermore, the country's increasing unemployment has helped to highlight the need for vocational education.

II. PROBLEMS OF THE NATIONAL EDUCATION SYSTEM

Despite the best intentions of successive Nigerian governments, vocational and technical education programmes are still fraught with problems, including: administrators' misconception of the nature of vocational education, inadequate political will by the government, deficient educational monitoring and evaluation procedures, poor funding, poor incentives for teachers and a rapid rate of technological changes. I will not expand on these problems, but suffice it to state that the problems have to varying degrees, affected the advancement of vocational and technical education.

1. Problems related to curricula

More specifically, certain problems have related directly to the curricula of vocational and technical education. These problems include among others: inadequate emphasis on pre-vocational subjects at the primary and junior secondary levels, inadequate facilities, shortfall in

recruitment and exodus of teachers, low student morale, poor funding and examination-oriented approaches to curricula implementation.

2. Tentative solutions to the identified problems

It will be misleading to think of any 'quick fix' for these problems. However, attempts will be made to suggest plausible solutions to address them. There should be an organized workshop for administrators at the federal and state ministries of education on the meaning, scope and nature of vocational education programmes. Without this, the mutual suspicion between general and vocational administrators in the ministries that adversely affect vocational education will continue. The mutual suspicion stems from the misconception of general educators on the demands of vocational education. Also of equal importance is improved political goodwill by governments in funding, implementing and sustaining vocational education, especially in the light of the publicized National Poverty Alleviation Programme.

3. Solutions addressing curricular problems

Teaching pre-vocational subjects in the primary and junior secondary schools should be taken more seriously to raise the interest of students for these vocational programmes. All stakeholders, especially those within the private sector, should provide more funds for the purchase of instructional facilities. The Educational Tax Fund should consider vocational education a priority area for funding. There should be less emphasis on certificates/examinations in implementing the curricula content of the various programmes. Acquisition of practical skills should be stressed on the final outcome.

IV. REFORMS

1. The history of Nigerian reforms

The history of reforms adopted in the Nigerian technical education system cannot be discussed without mentioning the examination and regulatory bodies that initiated them. Through their syllabi, the examination bodies have dictated the curriculum content and method of evaluation. In Nigeria, the Royal Society of Arts (RSA) and the City and Guilds of London Institute (CGLI) controlled the craft-level technical education through the conduct of examinations in commercial and technical subjects. These bodies continued to regulate the study of technical subjects, even after the establishment of WAEC (West African Examinations Council) in 1952. It was in 1960 that WAEC started acting as an agent for these bodies.

Among other things, the objectives of RSA and CGLI were to certify students in technical institutions (formerly trade centres, trade schools). However, only the theoretical aspects were examined by CGLI in most of the

trades. By the external regulation of what was taught in the technical institutions, the curricula were not structured to meet specific national development needs. Furthermore, the trainees were given scanty or no general education to supplement their chosen trades.

In December 1972, WAEC took over the conduct of examinations in some technical and commercial subjects from RSA and CGLI. Within this structure, the federal government approved that the CGLI be supplemented with a qualification known as the Federal Craft Certificate (FCC) issued by the technical colleges. The Federal Craft Certificate incorporated practical aspects of the trades examined by CGLI. After the take-over by WAEC in 1978, it introduced practical sessions into its examinations. Even so, WAEC did not introduce more general education into the curriculum of these trades offered in the technical colleges. Thus, the graduates of these colleges were unable to secure admission in tertiary institutions. For this reason, the image of technical education remained tarnished as a programme for academically weak students.

The National Council on Education in 1985 approved the national curricula and module specifications evolved by the National Board for Technical Education for the National Technical/Commercial Studies certificate programmes in technical colleges. The main features of the reform include:

1. General education courses in English language and communication, mathematics, integrated physical science and social studies became mandatory components of the technical curriculum;
2. Industrial staff and itinerant mechanics can be enrolled at the technical college to take specific trade modules relevant to their needs;
3. Trade theory and practice are integrated.

Trade theory now included trade calculation and trade science; no separate classes were held. The 1985 reform was replaced by the restructuring carried out by the National Business and Technical Examination Board (NABTEB) and was introduced in 1995.

2. Basic characteristics of the current reforms

The current reform took effect in 1995 following the establishment of NABTEB in 1992. NABTEB was charged with the conduct of technical and business examinations hitherto conducted (in Nigeria) by the RSA, CGLI and WAEC. The NABTEB based its examinations on two parallel syllabi—NBTE modular curriculum and modified WAEC syllabi. The Board offers examinations in four trade areas: engineering trades, construction trades, miscellaneous trades and business studies (see Annex to this article).

The key objectives of NABTEB include, among other things, making their certificate equivalent to a senior secondary school certificate. The Board also strove to ensure that graduates of the technical college could obtain admission into relevant tertiary institutions (poly-

technics and universities). This was in response to the low esteem accorded to the graduates of technical colleges who could not secure admission into higher institution with the previous technical certificates because of the inadequate content of their general education. To this end, all general education subjects are made compulsory to all candidates and related trade subjects are chosen according to trades. The basic sciences were introduced as trade-related subjects. Practical aspects of every trade were emphasized and made part of the examinations.

In order to sustain the reform, the Joint Admission and Matriculations Board (JAMB) accepted the NTC and NBC certificates as being adequate for admission into institutions of higher learning. Furthermore, all technical colleges were required to affiliate with NABTEB for their examinations. NABTEB also embarks on accreditation exercises before a technical college is approved as an examination centre. The teaching language remained English, which has also been made a core aspect of the curriculum. The sciences were also made a core aspect of the curriculum.

The policy concerning textbooks is not obviously different from that obtainable in the whole education system. Since there is paucity of relevant textbooks, individual colleges are at liberty to recommend books that their students could purchase in the local markets. For this reason, there are no expressed policies on titles, how the texts are written or printed. Furthermore, individual technical colleges relate to the state ministry of education. Any other relationship with local or municipal governments is not usually administrative.

3. Analysis of the text of the current reform

To the extent that technical college graduates can now obtain admission into higher education institutions, the objectives have been achieved. However, most colleges are having problems in striking a good balance between the theory and practice of their trades. This sometimes results in graduates being weak in their practice. The emphasis on general and trade-related subjects vis-à-vis admission into higher education institutions made students concentrate less on the core skills of their trade, which usually require more time to acquire. In terms of strength, technical college students no longer feel inferior to those in the secondary school since they too can aspire to higher education. The emphasis on social studies is also good for general adaptation skills needed by graduates of these colleges.

The difficulties encountered during implementation included: lack of textbooks structured according to the modules; modules (science subjects) structured differently from the already existing standards in higher institutions; and paucity of tools and equipment. On the teaching of language, students' command of English language is quite low to the extent that some teachers employ local languages to communicate with them. As a measure to modify the science module, the subject of

physics with chemistry has been separated into two subjects—physics and chemistry. The major action taken to support the reform is in the funding of NABTEB by the federal government. In addition, NABTEB lowered its examination fees to encourage student enrolment.

Indeed, this reform was not imposed by an international funding agency. Rather the reform was informed by the need to improve the image of technical education. Restructuring technical education to reflect the social demands satisfied the expectations of the people. Despite these positive points on the reform, the global demand for modern information technology has not been satisfied in the curricula. Furthermore, the cluster approach and multiple-skills orientation in modern vocational education have been de-emphasized and replaced by the modules.

4. The linkages between curriculum reform and curriculum development

The main objectives of the national policy on education (1998) include building:

1. A free and democratic society;
2. A just and egalitarian society;
3. A united, strong and self-reliant nation;
4. A great and dynamic economy;
5. A land of opportunities for all citizens.

The sections on social studies and communication skills in the syllabi were designed to achieve the first three objectives, while the syllabi on trades are aimed at the last two objectives of the national policy on education. If the syllabi were adequately implemented, these objectives would be achievable. However, the paucity of textbooks and inadequate emphasis on practical skills are creating problems in graduating skilled students.

The lecture and project methods are the main teaching/learning strategies employed for implementing the curriculum. In the main, the strategies are content driven and certainly not child-centred. The teachers have to cover the content in order to ensure that students are able to pass the NABTEB examinations. Students are given ample opportunities to participate in the classroom instruction. The traditional method in which teaching reflects each discipline is still in use since the teacher has to concentrate on particular trades or modules.

Curriculum development involved experts from industry, vocational educators from the polytechnics and universities, and ministry officials. An interdisciplinary approach used in the learning process entailed introducing technical students to introductory metalwork, woodwork, engineering drawing and basic electricity, before they specialize in any trade. There are some opportunities for students in business studies. The syllabi claim to be employing process and product evaluation strategies. Their provision for continuous assessment scores in the final grade is adequate. However, the claim on use of criterion-referenced tests cannot be substantiated.

ANNEX: AN OUTLINE OF THE CURRENT CURRICULA

NABTEB has thus taken over the existing WAEC Technical/Business Examinations. Technical and Business Examinations conducted by NABTEB lead to the award of the National Business Certificate (NBC)/National Technical Certificate (NTC). For some time to come these certificate examinations will be based on two parallel syllabi—NBTE Modular Curriculum Syllabi and Modified WAEC Syllabi.

Candidates are required to indicate their choice of examination syllabi. The Board offers examinations in the following four trade areas, based on the indicated syllabi:

1. Engineering trades;
2. Construction trades;
3. Miscellaneous trades;
4. Business studies.

Consequently, eight booklets, two for each of these four areas, have been published. Each also contains general education subjects and trade-related subjects.

The table of contents of each booklet shows where to find the contents of the syllabi on various subjects, be they general education, trade-related or main trade subjects. The following tables are a guide of which booklet contains which trade. The booklets are in two series: 'A'-series for trades with syllabi based on NBTE Modular Curricula; and 'B'-series for trades with syllabi based on Modified WAEC Technical/Business syllabi.

A. TRADES BASED ON NBTE MODULAR CURRICULUM SYLLABI

I. ENGINEERING TRADES BOOKLET

- 010 Agricultural Equipment and Implements Mechanics' Work.
- 020 Motor Vehicle Mechanics Work.
- 030 Auto Electrical Work.
- 040 Electrical Installation and Maintenance Practice.
- 050 Fabrication and Welding.
- 060 Mechanical Engineering Craft Practice.
- 070 Radio, TV and Electronic Work.
- 080 Refrigeration and Air-conditioning Practice.
- 090 Vehicle Body Building.
- 100 Light Vehicle Body Repair Work.
- 110 Instrument Mechanics Work.
- 120 Appliance Maintenance.

II. CONSTRUCTION TRADES BOOKLET

- 210 Bricklaying, Blocklaying and Concrete Work.
- 220 Carpentry and Joinery.
- 230 Furniture making.
- 240 Machine Woodworking.
- 250 Painting and Decorating.
- 260 Plumbing and Pipe Fitting.

III. MISCELLANEOUS TRADE BOOKLET

- 310 Cosmetology.
- 320 Men's Garment Making.
- 330 Ladies Garment Making.
- 340 Catering Craft Practice.
- 350 Leather Trades.
- 360 Printing Craft Practice.
- 370 Textile Trades.
- 380 Graphic Arts.

IV. BUSINESS STUDIES BOOKLET

- 410 Secretarial Studies.
- 420 Book-keeping.

B. TRADES BASED ON MODIFIED WAEC TECHNICAL AND BUSINESS SYLLABI

I. ENGINEERING TRADES BOOKLET

- 670 Mechanical Engineering Craft Practice Parts I and II.
- 680 Refrigeration and Air-conditioning Practice.
- 690 Welding Craft Practice, Parts I and II.
- 710 Fabrication Engineering Craft Practice, Parts I and II.
- 720 Radio, Television and Electronics Servicing.
- 730 Electrical Installation Work, Courses B and C.
- 740 Telecommunication Technicians, Part I.
- 750 Telecommunication Technicians, Part II.
- 760 Motor Vehicle Mechanics Parts I and II.
- 770 Vehicle Body Building.
- 780 Electrical Engineering Practice.

II. CONSTRUCTION TRADES BOOKLET

- 790 Furniture, Craft and Advanced Craft.
- 900 Concrete Practice.
- 910 Carpentry and Joinery, Craft and Advanced Craft.
- 920 Machine Woodworking, Craft and Advanced Craft.
- 930 Painters' and Decorators' Work, Craft and Advanced Craft.
- 930 Machine Woodworking, Craft and Advanced Craft.
- 940 Concrete Technology and Construction.
- 980 Blocklaying and Concreting, Craft and Advanced Craft.
- 990 Plumbing, Craft and Advanced Craft.

III. MISCELLANEOUS TRADES BOOKLET

- 950 Hotel and Catering – Basic Course.
- 960 Hotel and Catering – Craft Course.
- 970 Agricultural Mechanics' Certificate.

IV. BUSINESS STUDIES BOOKLET

- 510 Business Studies (Ordinary Level).
- 520 Business Studies (Advanced).