IMPLEMENTING THE VOCATIONAL TECHNICAL EDUCATION CURRICULUM IN VOCATIONAL/TECHNICAL SCHOOLS IN NIGERIA: PROBLEMS AMD CONSTRAINTS

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ABSTRACT

There is a general agreement That the successful implementation of Vocational-Technical Education Programme will lead to the technological development and self-reliance of any nation. This motivated the introduction of the National Policy on Education in 1 977 revised in 1 981 and adoption of the 6-3-3-4 system of education. Good as this policy is, the implementation of the vocational education curriculum in the nations technical colleges has been hindered by a lot of problems. In this paper therefore, an attempt has been made, to highlight some of these major, problems proffering some solutions. Finally, some recommendations has been made that will ensure the successful -— implementation of the curriculum in technical colleges in the country.

INTRODUCTION

There is a general agreement that Vocational Technical Education is a necessary too! for self-reliance and technological development of any nation because the main thrust of Vocational Education is on the application of specialized learning techniques in the realization of both educational and societal objectives. Its central objectives therefore revolve on the achievement of socio-economic, industrial and technological objectives that will eventually manifest themselves in improved standard of living for the citizens as well as in economic stability, industrial harmony and technological advancement.

Nigeria being a developing nation in dire need of technological development and greater economic well being for her citizens therefore recognized the need for vocational technical education. Consequently, it introduced the National Policy on Education in 1997 (revised, 1981) established the 6-3-3-4 system of education. This National Policy on Education made provision for the establishment of Vocational/trade centres and technical colleges in the country with the following broad objectives among others:

1. to provide trained manpower in applied science, technology and commerce particularly at sub-professional grades;

2. to provide the technical knowledge and vocational skills necessary for agricultural, industrial, com mercial and economic development;

3. to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising arid self-reliant; and

4. to enable our young men and women to have an intelligent understanding of the increasing com plexity of technology.

In furtherance of these objectives, the National Board for Technical Education (N8TE) developed innovative curricula and specifications for technical college programmes in building and wood trades, mechanical engineering trades, electrical trades, printing trades, etc. Good as these curricula are, the questions being asked are to what extend have they been implemented? What are the problems and/or constraints militating against their implementation?

This paper therefore attempts to discuss some of the problems hindering the success implementation of the vocational technical education curriculum preferring some solutions. Some recommendations have also been made which will enhance a better vocational technical education programmes in our Vocational / Technical Institutions.

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OBSOLETE NATURE OF THE CURRICULUM

The greatest problem with the vocational technical education curriculum lies with its obsolete nature, A look at the curriculum of most vocational courses at the technical colleges will reveal that there have been no changes for the past 20 years or more. In an era of rapid changes in technology an in its methods

of formulation; with the increasing use of computers in almost al! spheres of hum; activity, there is a great need to change the content of most of the courses in our technical colleges reflect these changes.

Such changes must take into consideration the current trends of such occupational/vocational areas: Since one of the objectives oi vocational technical education is the preparation of the individual to enter, and progress in, an occupation, there is a great need to design vocational/technical educatic curriculum that aggregate the ever present changes in the industry and society.

Consequently, and since we live in a world that is very much dependent on technology as an instrument of change and challenge, there is a need for a significant effort to prepare people to live in the rapidly changing world by equiping students to:

1. Use technology to improve the quality of many personal and professional technology based deci sion;
2. Participate intelligently as informed cin^ens in the transition from an industrialized society to a post-industrialized service and information age; and
3. be more active in shaping public policy which often involve the use of sophisticated technology (Bensen 1984:4)

This can only be done by significantly altering the present curriculum of our vocational/technical colleges such that it will de-emphasize old programmes that relate to only knowledge and skill acquisition in only one technical or vocational discipline. What we are suggestion is a development of a programme which will emphasize the study of technology in major areas of human activities of transportation, communication, manufacturing and construction, instead of the traditional titles of woodwork, metalwork, building construction, etc. Good (1983), identified some essential elements of such a progfamme which should include among others the following:

1. should provide exploratory experiences, that promote human adaptability, thereby building transfer able skills, knowledge, and attitudes that can be applied to further schooling, employment, and productive citizenship. It thus contributes to individual's ability to select, prepare for, enter, and succeed in existing or emerging occupations of his choice.

2. should help provide the individual with the flexibility needed to make future career changes;

3. through activity-centered learning, it uniquely provides experiences that help all students to dis cover their technical interests and capabilities; and

4. laboratory setting should be conducive to an experience-based study of adaptive technical systems through which specialization, experimentation, and innocation are encouraged and where problem solving skills mature.

Benson (1984) in providing general guidelines for developing Curricula that will provide the above experiences stated that it could take various forms, but that each must be carefully thought to reflect the contemporary developments of - "technical means". He went further to list basic guidelines for designing such a curriculum.

1. courses should take on much more breadth in their titles (e.g. manufacturing rather than metal-work).
2. the process of technology should become integrate part of all courses at all levels (e.g. problem-solving with tools, materials, processes and systems)
3. equipment and laboratory apparatus should be consistent with current technology;
4. computers should be integrated into the courses {e.g. control, monitoring, planning, designing devices), and
5. the economic enterprise should be a part of at least one required course for all students {e.g. stress on developing, inventing, patients, research and development, experimentation and enuepreneur-ship skills).

What we are saying in effect is that for vocational education to be meaningful, the present curricula should be changed to meet the dynamics of technological changes. The National policy on Education (1981) recognized this much when it stated as one of its aims of technical education, that it will "enable our young men and women to have an intelligent understanding of the increasing complexity of technology". It is our submission that this cannot be achieved with the current curriculum which we believe, is obsolete.

POOR STAFFING OF VOCATIONAL/TECHNICAL COLLEGES

No system of education can achieve its purpose without adequate staff, Facik and Face (1976) aptly observed that "the ultimate success of any enterprise depends on the individual efforts of those who are the productive elements of the enterprise". Thus, it has been observed that since the inception of the new education system, shortages of technical teachers has been the most serious limitation to the realization of the objectives of the new system. Nwoke {1990) agreed with this when he stated that serious shortfalls have always existed in the number of professionally qualified vocational and technical teachers needed in the nations schools and colleges. Equally, in a study by Aina {1986} in Ulinfun {1993}, it was found that the stock of technical teachers in circulation was 5, 593 (5.48%) compared to a projected figure of 102,083, leaving a shortfall of 96,490 (94.52%). This is in agreement with a study conducted by Ulinfun and Nwaokoio (1991} in 8 states of the country which found that of 14 critical problem identified, 13 (65%) of the educators responding stated that insufficient number of vocational technical teachers was their greatest single problem. No nation can therefore hope to achieve and sustain any impressive degree of technological development without conscious effort to develop its technical manpower.

It will be incorrect however, to assert that the Federal Government has not attempted to produce enough technical vocational personnel for our vocational technical schools. The Federal Government in collaboration with the United States of America (USA) trained technical teachers for the nation's schools under the Technical Teachers Training Programme HTTP). The target of the programme, according to Taghr (1 986} was to train over 50,000 technicians and technical educators within a period of 5 years. Inspite of these effort, the problem appeared defiant because of several aggravating factors. Towe (1989) for example, observed that many available teachers abandoned their teaching jobs for the more attractive opportunities in industry and commerce.

With the down turn in economic fortunes of the country, the Federal Government decided to look inwards in its efforts at producing its technical teachers. It thus established nine (9) Federal Colleges of Education (Technical) in addition to various efforts by many state colleges of Education and technical education departments of various Polytechnics and Universities. Despite all these seemingly impressive efforts, the problem of shortage of technical teachers persists. This as we have observed, is due to lack of motivation and job satisfaction for this crop of teachers. Concerted efforts therefore must be made towards finding appropriate means of retaining this vital input in our vocational education programme.

In addition to the inadequate supply of teachers for our vocational colleges, the problem of quality arid experience of the existing ones has been a source of worry to many educators.

It has been stated that the quality of education at any level of our educational system is to a large extent, a product of the quality of teachers involved in the system, and a sustained provision of all the other resources that make teaching and learning hitch-free. For as Musa {1 995) stated, effective teacher can make all the difference even in the face of inadequate facilities. Hence, no matter how much facilities are provided, no learning can take place without a competent teacher, As rightly noted in the National Policy on Education (1981) "no education system can use above the quality of its teachers"" (P. 38)

Since the very objective of Vocational/Technical Education is the production of competent graduates with adequate and appropriate skill for entry into and' progression in an occupation, vocational technical teachers must be equipped with current and up-to-date skills in their chosen area or occupation. For as has been rightly stated, "no one gives what he does not have". The prevailing situations m most of our vocation/technical colleges where many of the teachers are holders of C & G or WAEQ (Technical) Certificates does not urgur well for the quality of the graduates. Teachers in these colleges must be encouraged to undergo additional training and made to have adequate and appropriate inc. i trial experiences in their relevant fields of study. Supporting this view, Asche (1 985) in Elobuike (1 993B stated that personnel in Vocational/Technical Education must possess extended occupational experience in the fields of which they are working or preparing to work.

In furtherance of this, admissions to our vocational/technical teacher training institutions must D* regulated such that students entering must have appropriate background in at least vocational/technical area. Instances of admitting Grade Two (G II) holders and Senior Secondary School graduates without technical backgrounds should be stopped. The curricula of such institutions should also DM changed such that greatest emphasis be placed on technical subjects in such a way that graduates should specialize in one specific area of study. The current situation of producing a teacher who is a "Jack of all Trades but a Master of None" should be stopped.

INADEQUATE SUPPLY OF EQUIPMENT AND MATERIALS

Perhaps the greatest constraint against the successful implementation of the vocational education curriculum in our technical colleges is inadequate supply of equipment and materials in the school

workshops. As we have noted much earlier, the emphasis of vocational/technical education programmes is on skill development, so as to make the graduates immediately self-employed on graduation. Hence, learning activities must be so planned in order to inculcate in the students such skills, values aid aptitudes that will enable them enter into, remain in, and progress in their chosen vocation. This calls into view therefore the need for adequate and appropriate supply of equipment and facilities for execut- ing vocational/technical education programmes. Such equipment should meet the standards in m» industries as one of the theorists of vocational education said, "the training environment is a replica oil the environment in which the learner must subsequently work".

Therefore, the dearth of appropriate equipment in our technical college workshops should be m cause of concern to our educational administrators. For as sounded by Ulinfun (1993), basic infrastructure are disturbingly lacking in our colleges...;; workshops are either empty or stocked with obsolete machines. Even in instances where these equipment are present, most of them have either broken down due to lack of maintenance or completely out of use. Hence, we are faced with a situation whew we produce students who have never operated or seen in operation any machine they are likely to meat-upon graduation.

Towe (19891, presented some statistics of a visitation panel of the National Board for Technical Education (NBTE) to technical colleges in the country (Table 1).

NATIONAL BOARD FOR TECHNICAL EDUCATION (NBTE) TECHNICAL COLLEGES PROGRAMME - STATISTICS OF THE 54 COLLEGES SO FAR VISITED.

Table 1.

S/NO	TRADE	NO OF INSTITUTIONS VISITED	NO OF INSTITUTIONS OFFERING THE PROGRAMME	NO WITH ADEQUATE ACCOMMODATION TO RUN THE PROG.	NO OF ADEQUATE EQUIPMENT TO RUN THE PROG.	NO WITH QUALIFIED TEACHING STAFF
1	Agricultural and Implement mechanic work	54	4	-	1	1
2	Bricklaying, Blocklaying and Concrete work	11	37	2	2	1
3	Carpentry and Joinery	11	25	3	-	1
4	Furniture making	11	22	2	-	3
5.	Painting and Decorating	11	12	2	-	1
6.	Commercial studies	11	19	5	-	-
7.	Electrical installation and maintenance work	11	44	8	-	2
8.	Ratio, Television and Electric work	11	21	2	-	-
9.	Fabrication and welding	11	28	6	1	1
10.	Foundry craft practice	11	1	-	-	-
11.	Motor vehicle mechanic work	11	38	7	-	7
12.	Mechanical engineering craft practice	11	27	6	3	-
13.	Auto Electrical work	11	-	-	-	-
14.	Vehicle body building	11	-	-	-	
15.	Light vehicles body repair work	11	-	-	-	-
16.	Plumbing and pipe fitting	54	12	2	-	1
17.	Refrigeration and Air-conditioning practice	54	11	3	-	2
18.	Printing craft practice	54	1	-	-	-
19.	Ladies and Men's garment making	54	-	-	-	-
20	Leather trades	54	-	-	-	-
21.	Textile trades (Weaving)	54	1	-	1	1
22.	Ceramics	54	1	1	-	-

From the table presented above, 54 colleges were visited and the outcome presented is disturbing, Take the case of furniture making trade for example, of the 22 colleges offering the programme, not a single one had the equipment to teach the course. This trend runs through almost all the programmes surveyed. It can be said that this situation in our technical colleges has not changed. The situation to say the least is getting worse with the economic recession the country is currently experiencing. We must look inwards in equipping the school workshops instead of the current practice of wholesale importation with its problem of lack of spare parts upon breakdown. Our equipment manufacturing industries should be encouraged and adequately funded to help out.

POOR FINANCING OF VOCATIONAL TECHNICAL EDUCATION PROGRAMMES

According to Okeke and Oranu (1993), vocational education anywhere in the world is a viable industry and sin-qua-non to a new world technological order which requires adequate resources. But it has been noted by several people that this cannot be achieved without adequate funding of the nations vocational technical institutions. According to Olaitan (1992) in Yahaya and Abbas (1996), a good vocational technical education programme should be adequately funded for effective teaching and learning. He further stated that vocational technical programmes unlike other training programmes involved buying students tools machines, and all other working materials. Also, Agun and Imogie (1986) agreed with this when they stated that finance is a crucial factor that determines the range of equipment and materials that can be provided in our schools.

Correct as these may be, the financing of our vocational technical education programmes leaves much to be desired. It has at best been epileptic. This has not been helped with the depreciation of the naira and the global infiation coupled with the down turn of the nations economy. The consequences of all these is that smaller amount is being allocated to vocational education programmes. This situation has been worsened by the tendency of our educational administrators to allocate the same amount of money to vocational education programmes as to other programmes. This is not appropriate because as has been noted by Nzerem (1993), vocational technical education is capital intensive, hence, it is unfair to use the same criteria to allocate funds to institutions that run these programmes and those that run programmes that are not capital intensive. This is so because in vocational technical education, money is needed to procure machines, equipment and materials. Therefore, for any meaningful learning, the students have to work in laboratories and workshops that are well-equipped with up-to-date machines and tools; the absence of this may result in the collapse of the full implementation of the programme.

A more worrisome trend in our vocational technical institutions is the failure of the management of such institutions to allocate scarce resources to genuine educational purpose. As stated by Enemali (1994), there is evidence to show that in schools where

> school furniture and training materials are not supplied
> for use by students ... greater proportion of educational
> funds is devoted to non-academic matters like repainting
> of buildings and streets within the campuses. Past experience
> and common observation permit the conclusion that contractors
> and middlemen are the main beneficiaries of government funds devoted to
> education.

In order to boost the amount of money available for funding vocational technical education programmes, the federal government and the other tiers of government should be involved in its financing. This must be backed by appropriate legislation which should also compel the private sector to contribute specifically to a vocational education fund. The present 1 & general education tax in this respect is considered not adequate seeing the current state of The nations vocational education institutions.

CONCLUSIONS/RECOMMENDATIONS

The importance of vocational education is that it will ultimately lead to the technical development and self-reliance of any nation. Hence,- the successful implementation of vocational education curriculum will lead to the production of a crop of graduates who will be self-reliant and thereby contribute their quota to the economic and technological advancement of the country. Hence, this paper has presented some of the problems and constraints militating against its successful implementation. It is hoped that if concerted efforts are made at tackling these problems, the ultimate objective of vocational/technical education will be realized.

In order to ensure a successful implementation of the vocational/technical education curriculum, the following recommendations has been put forward:

1. The curriculum in our vocational/technical institutions need to be updated or changed to reflect the changes in the industry and society. Traditional courses such as carpentry and joinery, furniture craft etc, are becoming outdated. What is needed is for changes to reflect curient practices in the industry such that courses should be designated accordingly, such as transportation, construction, manufacturing, etc.

2. There is a compiling need to train additional technical teachers for our technical schools. Existing facilities for the production of technical teachers should be expanded so that we "over-produce" them such that even if many float to the industries, we shall still have enough for our schools.

3. There is also a need to look at the quality of the teachers being produced. Technical teachers must be knowledgeable in skills they intend to impart to students Provisions should be made for teach ers already on the fieid to update their skills from time to time.

4. Adequate provision should be made to equip the workshops in our technical institutions. The existence of obsolete equipment that does not aggregate with those in the industries does not taiic well of our educational system. The SIWES programme should be strengthuned to help alleviate this shortcoming. Consideration should also be given as to how to involve the industries (the ultimate beneficiaries of our efforts) in providing some of the equipment needed in the school workshop.

5. Adequate funds should be provided for our technical vocational programme. Because of the current economic condition, it is inappropriate for only the governments at various levels to finance voca tional education alone. A **Vocational/technical** Education Tax (VET), different from the current gen eral education tax of 1 % is being advocated here to compel the industries to contribute. Finally, efforts should be made to ensure that all resources allocated to vocational education are properly managed and frivolous projects discouraged.

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