

Improving Human Resources through Technology and Vocational Education for Sustainable Development

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Abstract

Vocational/Technical Education which has been described as work oriented. It is the type of education that helps in generating human resources which will in turn contribute towards national development. The paper discusses the concept of Vocational/Technical Education and human resources development. It also discusses some problems bedeviling Vocational/Technical Education in relation to human resources development through Vocational/Technical Education.

Keywords: National development, secondary school system, polytechnics.

1. Introduction

We don't need a soothsayer to tell us that Nigeria is passing through socio-economic problems such as unemployment among youths, rationalization of staff in public and private sectors, low productivity, closure of industries, non-payment of workers salary as at when due, strikes, low standard of living, low income, high rate of inflation, school drop outs, ritual killings, stealing by tricks, popularly called '419', armed robbery, prostitution, epileptic energy supply, drug addiction and pushing, fuel scarcity, among others.

The situation is so bad that some schools of thought blame it on the current educational system for producing unemployment graduates, known as 'unfortunate graduate' in the society.

Osarobo (2002) stated that Nigeria as a nation is faced with an insecure economy, problem of simultaneous inflation and recession, as well as significant unemployment of both the youths and the adults. Productivity is reduced or at best, making only slight increases in output per hour of all persons in the labor market, resulting in increases poverty of the populace. Osarobo (2002) also stated that poverty stares many families on the face and various segments of population are

alienated from becoming productive members of the work force. The public service workers are meant to bear the burden of the society through high taxation with stunted salary. Social problem such as armed robbery, drug pushing exacerbated in periods of economic difficulty.

2. Vocational/Technical Education and Human Resources Development

Vocational/Technical Education is training for an individual to help him acquire skills, knowledge and attitude in a particular occupation for unemployment with respect to societal needs. Okoro (2003) refers to Vocational Education as any form of education whose primary purpose is to prepare person for employment in recognized occupations. Similarly, Osarobo (2002) perceives vocational education as the training that enables one to carry on successfully a socially useful occupation. He stated that this definition refers to vocational education as training for useful employments in trade and industrial, agricultural, business, home making, etc. Vocation education therefore is a process of getting people ready and keeping them ready for the types of services needed by the society.

Whereas human resources on the other hand according to Osarobo (2002) could be seen as the total supply of persons available and fitted for services. In the same vein, Ferguson (2001) in Ehizogie (2002) defined human resources as:

- (i) Power supplied by human physical effort.
- (ii) The number of persons available for any specific service as for military, or for industrial work.

Ferguson (2001) in Ehizogie (2002), defined development as: "to extend, enlarge upon or bring out the potentials, capabilities, etc. of a person". In other words, development connotes; training given to produce, increase or enlarge number of human resources. Human resources development would demand training of human resources both in quality and quantity. Human resources development could be described as production of training in quantity and quality individuals who are capable of providing the needed services and consequently contribute meaningfully to national development.

3. Objectives of Vocational and Technical Education

Vocational Education has well articulated objectives for human resources development, which many desire to achieve. The National Policy on Education (2004) highlighted the following as objectives of Vocational Education.

- (1) To provide trained human resources in applied technology and commerce, particularly at the sub-professional level.
- (2) To provide technical knowledge and vocational skill necessary for agriculture, industrial, commerce and economic development.
- (3) To provide people who can apply scientific knowledge to the improvements and solution of environment problems for use and convenience of man.
- (4) To give an introduction to professional studies in engineering and other technologies.
- (5) To give training and impart the necessary skills and other skilled personnel who will be enterprising and self-reliant.
- (6) To enable, both young men and women

to have an intelligent understanding of the increasing complexity of technology.

4. Vocational Technical Institutions Relevant to Human Resources Development

In order to produce specialized human resources, Vocational and Technical Education have different institutions where individuals acquire skills, knowledge and attitudes in specific occupation for employment.

4.1 The Present Secondary School System

The present secondary school program is of six years duration divided into junior secondary school for three years and senior secondary school for three years. At the junior secondary level the students are expected to take at least two pre-vocational subjects selected from Agriculture, Introductory Technology, Business Studies and Home Economics. At the senior secondary level, the students are expected to take at least one vocational subject in their senior secondary school certificate examination. The major aim leavers to be easily employable as contained in the objective of vocational and technical education of the National Policy on Education (2004). Accordingly, they will be provided with technical knowledge and vocational skills necessary for agricultural, industrial, commerce and economic development.

4.2 Vocational Training Centers/ Apprenticeship

Technical colleges are regarded as the principal vocational institutions in Nigeria. They give full vocational training intended to prepare students for entry into various occupations. They train craftsmen in Auto-mechanics, Plumbing, Carpentry and Wood Joinery, Cabinet making etc. technical colleges admit junior secondary school leavers who do not want to go to senior secondary, and provide them with full vocation courses of three years duration. Technical colleges sometimes admit students who have the First School Leaving Certificate and give them six years vocational training where it is difficult to attract enough to

attract enough junior secondary school leavers into its vocational programs (Okoro 2003).

4.3 Polytechnics

The Polytechnic (College of Technology), admits students with Senior Secondary School Certificate, with credits in mathematics and science subject. The polytechnics offer many technical courses, e.g. Electrical, Mechanical and Civil Engineering, Laboratory Technology, Secretarial Studies, Telecommunications, Fine Art, Accounting and Food Technology, Practical industrial training experience is usually necessary as part of the training programs.

4.4 The University

There are some Universities in Nigeria offering Vocational/Technical Education, including Ebonyi State University, Abakaliki. They prepare Vocational Teachers for secondary schools and colleges in vocational subjects' area. They also train students for leadership roles in schools and establishment of training schemes. The universities award degrees.

4.5 School for the Handicapped

This is an organized craft school for those youths and adults who are physically handicapped, to give them skill in a particular trade. This is to help them secure and prosper in any job of their capability. This goes a long way to make them be useful to themselves in particular and the society at large.

4.6 Industry

The industries are the user of these graduates from these institutions. Therefore, they should also take part in the training of these graduates. By way of providing school-industrial linkage or what is popularly known today as Industrial Training (Akamobi 1996).

4.7 Problems of Vocational Education in Relation to Human Resources Development in Nigeria

Vocational Education in Nigeria is faced with problems and difficulties. Hardly can it achieve success in human resources development for national development if the following problems are not tackled.

4.8 Unreliability of Quality and Quantity Data on Human Resources Needs

There is no reliable statistical data or information on what kind of human resources that is exactly needed in the labour market, so as to help the vocational education know exactly what is to be produced and the number to produce to fit in properly and meet up with existing needed service in the labour market. This problem has resulted in creating unemployment of graduates. Robert (2002) stated that the role of reliable statistics on human resources demands in technical/vocational human resources development does not appear to have been fully realized in the country. He suggested an improved performance, technical training institution need, reliable and current data on human resources demands in quantity and quality to guide annual student's intake, curriculum improvement and avoidance of unplanned production of irrelevant skilled unemployed graduate. He observed also that lack of statistics on human resources need tends to account for the increase in the incidence of unemployment among technicians and technologists, which also is occasioned by the inability of trainers to tailor their training efforts towards human resources needs and effective demands by industrial and other agencies.

Non-availability of data, apart from leading to over production, or under production of human resources, it also leads to underemployment where there is excess human resources with the result that people sometimes experience non-payment of salaries.

4.9 Poor School-Industry Relationship in Nigeria

Many industries in Nigeria are uncooperative. They perceive training of students as the business of trainees and government without appreciating that they are primary consumers of vocational and technical training of students. Robert (2002) stated that investment in technical human resources production and development is not only beneficial to the trainee and the government, but also to industries. Although industries usually prefer their job in-plant training

programs to formal training, usually, products of form the bulk of their trainee employees.

(1) Poor Organization and Supervision of Industrial Training (Field Experience):

The purpose of establishing industrial attachment is to provide students the opportunity of acquiring the much-needed industrial experience to make up theoretical classroom instructions. It is becoming very glaring that the purpose for which industrial training is established is being ignored. When and where students are sent for industrial training is very impotent. The students should be sent and at such a time that create opportunity for acquiring the needed skills, knowledge and attitude in that particular area of study. For example, Agricultural Science students should be placed in Agro-Industries or Farms during seasons of productivity. Often students are allowed to place themselves in unrelated area of study, out of selfish interest and uncommitted attitude of both the students and supervisors, thus making mess of the whole idea. Robert (2002) stated that, the Students Industrial Work Experience Scheme (SIWES) program, which was designed to familiarize trainees with the world of work, is fast degenerating into mere formality. Mbata (1998) in poor coordinations for one reason or the other, the responsibility for placement has been shifted to students, some of who sent half of the allocated time canvassing for places that would suit their selfish interest, rather than their vocational development.

(2) Inadequate Facilities: Vocational institutions like every other educational institution are inadequately equipped. Classrooms and desks, workshops, laboratories, libraries are inadequate for effective teaching and learning. Tools and Equipment necessary for imparting knowledge are inadequate. The ones available are obsolete, (Robert, 1996). Vocational Education cannot achieve much in producing quality skilled human resources when facilities necessary for the training are inadequate.

Akamobi (2002) recalled that in 1984, the federal government entered into soft loan arrangement with Bulgaria for the supply of pre-vocational workshop tools and equipment to the junior secondary schools in the country.

The supplies were in crates and distributed to principles of schools, but unfortunately there were few workshops to install the equipment disappears from schools and was never used by students and instructors.

(3) Inadequate Qualified Staff: Apart from the problem of inadequate scarcity of qualified staff. The situation is most glaring in our public secondary schools where most vocational and technical subjects are taught by unqualified teachers or not taught at all due to scarcity of qualified teachers. Robert, (2002) stated that qualified technical instructors are becoming very scarce in training institutions. The reason for this is not far-fetched. While remunerations in the private sector have remained partially, satisfactory in the face of high inflationary rates, remunerations in the public educational sector have been very static. Akamobi, (2002) state also that most schools lack qualified teachers who can teach the vocational subjects. As a result of this, the products of some schools are half backed and cannot perform to the optimum level required in the world of work.

(4) Inadequate Funding: Fund is a serious problem affecting Vocational Education business. Vocational Education is expensive and needs adequate fund for building classrooms, desks, workshop and laboratories, purchase of tools and equipment, training and retraining of staff to update information, better remuneration to attract more qualified staff for vocational training of students. Where there is inadequate funding it is virtually difficult for vocational education to meet up with societal expectations. Osarobo, (1994) lamented that technical education programs, which the federal and state governments fund, are haphazardly implemented. He suggested that government should establish a monitoring unit to ensure that funds allocated are utilized for the purpose for which they were made available in the institutions and to ensure that facilities are available for effective teaching and learning in vocational institutions.

(5) Major Dependence on Foreign Technology: Most Nigerians depend so much on foreign technology and technologists. The quality of what is produced in Nigeria is regarded as sub-standard. This attitude affects

products of vocational education. Nigerian technologies are regarded as unskilled technicians, or engineers and operators are relegated to the background by keeping them idle most of the time, less productive, frustrated with peanut salary while their foreign counterparts are paid highly in hard currency like Dollars and Pound Starlings

For example, foreigners do most construction work in Nigeria. This calls for the question; does it mean that Nigerian engineers cannot construct roads and buildings even when the work is mere maintenance? Robert (2002) attributed the low productivity in Nigeria to over reliance on imported technology. They noted that Nigeria's march towards industrialization opted for alternative of importing technology packages.

(6) Politicization of Administration: It is a common practice in Nigeria to appoint an officer who is not qualified or who is not a specialist to head and office outside his area of specialization; and junior officer to head senior officer just on political reasons. Vocational Education is also affected by this problem. This does not make good management of Vocational Education, rather diversion of fund for selfish interest. Akamobi (2002) stated that in most cases; the administration of Vocational Education should be in the hands of specialists in Vocational Education.

Other problems of Vocational Education include misconceptions of Vocational Education and where parents and guardians take Vocational Education to mean education for school dropouts, illiterate and unintelligent people.

5. Strategies for Improving Human Resources Development in Vocational Education

5.1 Establishment of Vocational Institutions

Improving human resources in Vocational Education especially for human resources development, calls for establishment of more vocational institutions, some of the institutions are required at the state level, this include the polytechnics and universities. While others are required at the local government levels and towns. These include

the vocational training centers, technical colleges, school for the handicapped, women development trade centers etc. If these institutions are well located as stated above, many people will be trained, human resources will be improved and people will be employed either by government, industries or be self employed.

5.2 Indigenous Technology

We should cultivate the culture of indigenous technology and less dependence on foreign technology and technologist. Imported/ Complex technology with highly paid foreign technologist (human resources), who are relatively less expensive to maintain. By so doing, indigenous industries and factories will be encouraged to grow, more employment will be created, less foreign expenditure on imported goods and services, as well as improve standard of living and economic growth will be achieved.

(1) Provision of reliable statistical data on the quality and quantity of human resources need by the Federal Ministry of Labor and Productivity is required for improving Vocational Education.

(2) There should be cooperation and commitment by Nigerian industries and companies in Vocational Education Institutions in order to support financially and otherwise. In support of this idea, the Fourth Common Wealth Education Conference (1986) recommended that industry should be closely associated with Technical Education in and through policy making, human resources planning, curriculum development, provision of opportunities for industrial experience accreditation, consultancy services, part time courses and vocational guidance. It also stated that cooperation between industry and Technical Education would ensure that the technical institutions produce workers required for industry. This will greatly help to build up the country's economy status and the required self-reliance.

(3) Proper organization and supervision of industrial attachment. Qualified and committed staff and supervisor should organize industrial attachment. Monitoring team should be constituted to monitor industries and

supervisors who supervise students, to check if the students are placed in areas related to their course of study.

(4) There should be seminars and workshops organized by Vocational Education institutions on the need for industrial workers, supervisors and students. Industrial workers should be encouraged to participate in training of the students.

(5) Government should encourage teachers of Vocational Education with scholarship awards for further studies and Vocational Education (hazard) allowance should be paid to Vocational Educators. This will attract and keep more qualified Vocational and Technical Educators in the system.

(6) Vocational and Technical Education Department should occasionally organize seminars and workshop for parents of different walks of life. This will help to eradicate their misconception towards Vocational Education.

(7) Government should as a matter of necessity provide social amenities for good administration of Vocational Education institutions. The social amenities e.g. Water and Electricity will facilitate the use of tools, equipments and machines for teaching and learning. This provision should be extended to rural communities, to help our rural industries grow. Young graduates in rural areas can then easily start off business on their own.

(8) Government should adequately fund Vocational Education, donate equipment and supervise how the money is spent.

6. Conclusion

Vocational Education is of great importance in improving socio-economic status of the country. This could only be accomplished if most of the problems confronting Vocational Education are solved by following the suggested strategies properly. Vocational Education requires full cooperation and commitment of industries, parents and students. Good moral consciousness is also required of Vocational Education Administrators, who manage fund and other material resources.

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