

PRACTICAL SKILL ACQUISITION THROUGH VOCATIONAL AND TECHNICAL EDUCATION: A VERITABLE TOOL FOR TECHNOLOGICAL ADVANCEMENT IN NIGERIA

By

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Abstract
Possession of relevant requisite practical skill increases the chances of economic stability and technological advancement of a nation. It is also established by several great bodies or organization such as United Nations, UNESCO, Department of International Development, ECOWAS and several countries of the world that Vocational and Technical Education is the key to achieving technological breakthrough and emancipation. The paper discussed critically and analytically under the following sub-topics, relevance of skill acquisition, justification for acquisition of Vocational and Technical Skills, skill acquisition and national development, Vocational and Technical Education and skill acquisition, challenges of Vocational and Technical Education in practical skill development in Nigerian, mechanisms for improving TVET in the development of practical skills and a number of recommendations for ameliorating several factors hindering Vocational and Technical Education in the delivery or teaching of practical skills.

Introduction

It is generally, believed that the acquisition of practical skills is a means of increasing the productive power of a nation. Hence, the Nigeria society should recognize the fact that every citizen should be equipped to contribute effectively to the welfare of the county. Moreover, Okorie and Ezeji (1988) stressed that the highest possible welfare is achieved only when each individual produces to the limit of his capacity. At this stage in Nigeria's development; a substantial section of the labour force must be able to initiate independent production or to perform skilled work of a diversified nature.

From ancient times, human beings have been striving to master and improve their environment. According to Atsumbe (2001) it is a well-known fact that effective training in skill acquisition has immensely contributed to the technological excellence and economic self-reliance of the industrialized nations. It is for this reason that Okorie (2007) while stressing the importance of practical skill acquisition in a nation's growth emphatically contended that Nigerian social and economic problems will be drastically reduced if people are given adequate vocational training in various occupational areas. It must be stressed at this point that it is only with skilled men that materials can be harnessed, manipulated and transformed into useable or consumable products.

Several developed western countries like America, Britain, Germany, Japan and even South Korea who

for a long time have realized the enormous benefits of practical skill acquisition especially through vocational education have since established centers that are purely dedicated to practical skill acquisition in various vocational areas. Atsumbe further observed that with this scheme these countries have successfully rehabilitated drug addicts, school dropouts and several destitute.

Chastain and Wagner (2008) reporting on the outcome of Technical and Vocational Skills Development in Africa noted that several African countries are working toward improving the quality and skills levels of their labour forces. The increasing recognition that higher technical and vocational skills are crucial in enhancing competitiveness and contributing to social inclusion, decent employments, and poverty reduction has been a strong incentive for reform. The term technical and vocational skills development refers to the acquisition of practical competencies, know-how and attitudes necessary to perform a certain trade or occupation in the labour market.

Vocational skills acquisition for national development in various areas of vocational and technology education is so important that National Economic Empowerment Development Strategies (NEEDS) (2004) made one of the intervention strategies targeted at youth development and to reduce urban poverty. The wealth of a nation can be increased and quality of life improved when people

are trained to acquire skills relevant for the world of work.

Justification for Acquisition of Vocational and Technical Skills

The recent development in Nigeria with regard to a situation where by a substantial section of the society remains unemployed calls for a great concern among every well-meaning Nigerian. A situation where 65% of our university, polytechnic and other school leavers roam our streets in both urban and rural areas without any defined mode of living seem to heighten the need for emphasis on vocational education (National Bureau of Statistic, 2009). Atsumbe (2012) lamented that Nigeria fifty-two (52) years after independence can hardly boast of a community of manpower that are skill oriented. Nigerian is still one of the few nations that still parade unskilled workers today.

Equally affected in this jobless pool are many petty traders, small and medium scale industries who depend on imported materials for their businesses. There are many civil servants who have been declared either redundant or forced out of job because of years of service. Consequently, many of these jobless individuals are forced to return to their villages while according to Abdullahi (1994) a negligible few who are able to fall back on their little savings still linger around in the towns. Okorie and Ezeji (1988) also observed that substantial percentage of the work force is being retrenched and others are on the threshold of losing their jobs. As several manufacturing industries, construction companies etc. folds up as a result of the present economic recession. It is expected that the percentage of these jobless Nigerian will increase in percentage.

According to Odusola (2001) one peculiar characteristic of this group of people is that 95% of them are unable to perform any skilled work of any diversified nature. This group of people at the moment constitutes a threat to the society. Many have died of frustration as a result of lack of means of maintaining their families while able bodied men have turned to armed robbery which seems to be causing uncertainty in the way and manner people live. This type of development does not augur well. One disturbing fact is that the nation seems apparently indifferent about the plight of these people. This difference, although unsubstantiated with data, is causing a lot of havoc to the society in terms of human lives. One is forced to be in a state of apprehension while either relaxing in one's home or travelling along the road. Hence, there is an urgent need for a realignment of the present situation

Atsumbe, B. N., Umar, I. Y., Raymond, E. & Ajunwa, J.

towards improvement of education for productive work.

Skill Acquisition and National Development

It was late president John F. Kennedy in the first Manpower Report in the United States who observed that skilled manpower is the basic resource. According to him it is the indispensable means of converting other resources to mankind use and benefit. How well a nation develop and employ human skills is fundamental in deciding how much we will accomplish as a nation. Renowned scholars such as Harrison, Becker and Blaug (2008) highlighted the issue of skill acquisition factor in national development. Thus Harrison observed that a strategy for human resource development, that is, the building of appropriate skills, is an essential element of any modern development strategy. The wealth of a nation is as much dependent on the accumulation of "skilled human capital" than the accumulation of material capital. Skill human capital formation is the acquisition and increase in the stock of people with the skills, education and experience which are critical to national development. Folayan, Aderinto and Fashoyin (1999) noted with emphasis that availability of skilled manpower is a major determinant of the pace of a country's socio-economic development and indicator of great technological advancement.

Atsumbe (2001) while contending the indispensable role of skill acquisition in National Developments opined that when group of unemployed people acquire saleable skills through organized vocational education training programmes, they become useful to the society in the following ways.

- (a) It provides them with financial and psychological security, since they can thereafter work as trained craftsmen.
- (b) The employer receives productive work from the craftsmen.
- (c) Society at large, receives continuous supplies of skilled labour and quality goods.

Industrialized nations who for many years have embraced development of practical skills for their citizens always testify that possession of quality skills is important in preventing youths from becoming social misfits. Instead, these skilled persons become gainfully employed through vocational training. Acquisition of practical skills therefore, helps to arrest some social ills such as armed robbery, stealing etc.

Skills acquisition promotes national stability security of life and property and balanced economic development by engaging the citizens in meaningful occupational explorations and activities. Skills acquisition enhances the dignity of man by making himself sufficient and live above poverty level. Ozoro (1990) observed that possession of saleable skills promotes quality service and this will lead to exporting our product to other nations instead of been ex consumers of imported goods. When government promotes skills acquisition there will be rural and urban development which will discourage the craze for urban migration and reduce the high cost of living through production of goods and services in abundance. Furthermore, saleable skills in entrepreneurial activities promotes co-operative activities and better resource management through a culture of maintenance which reduces wastes. Our foreign exchange reserve will appreciate greatly when we use our own indigenous trained manpower at the expense of foreign expatriates.

If Nigerian agricultural and mineral resources are to be properly harnessed and economically used there is a need for emphasis to be placed on the acquisition of skills. Skill promotes economic stability. This is true because a country that manufactures its own goods using indigenous skills and exports some of these goods to other countries is usually economically stable. When manpower with efficient hands (appropriate skills) are employed in any field of human endeavor, productivity is usually maximized. On the other hand, the inability of a nation to develop her raw materials due to inadequate skilled manpower for product manufacturing has adverse effect on economic stability. We therefore conclude that, when a nation fails to give her citizens the requisite skills, that nation will perpetually languish in abject poverty.

Technical and Vocational Education and Skills Acquisition

Vocational education is that aspect of the total experience of the individual whereby he learns successfully to carry on a gainful occupation (Olaitan, 2006). What is most certain about the meaning of vocational education is that its major focus is preparation for an occupation. Thus, any form of education which focuses on equipping the individual with work skills to enable him hold a job or survive in an occupation can be classified as vocation education.

The background documents for the African Union's TVET experts meeting of 13th -14th December, 2006 categorically observed that one of the most important

features of TVET is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVET delivery systems are therefore well placed to train the skilled and entrepreneurial workforce that Africa needs to create wealth and emerge out of poverty (Afeti, 2006).

According to National Policy on Education, FGN (2004) Vocational and Technical Education is defined as "that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge". Vocational education emphasizes skills acquisition and in line with the tenets of TVET the National Policy on Education spells out some of the aims of TVET to include:

1. To provide trained manpower in applied science, technology and commerce at sub- professional level.
2. To give training and impart the necessary skills leading to production of craftsmen, technicians and other skilled personnel.
3. To provides the technical knowledge and vocational skills necessary for agricultural, industrial and economic development. These aims in the Nigeria National Policy on Education is stated this way because it is believed that vocational education is that form of education which emphasizes the development of occupational skills needed for preparation for work.

Government is making effort to resuscitate vocational and technical education because TVET is seen as the best form of education that can provide its citizens with employable skills using tools, machines and materials of the occupation. According to Wirth and Mcwabb, (1997) technical and vocational education training (TVET) has been an integral part of national development strategies in industrialized societies because of its impact on productivity and economic development. Vocational education is concerned with the acquisition of skills and knowledge for employment and sustainable livelihood. It is only formal vocational education programme that provides not only academic knowledge and job skills but also problem solving skills, creative and critical minds, and socially responsible citizens. Wilson (2009) also observe that vocational and technical education is a "planned programme of courses and learning experiences that begins with exploration of career options, supports basic academic and life skills, and enables achievement of high academic standards, leadership, preparation for industry – defined work, advancement and continuing education. Vocational

education is a practical instruction that gives learners specific occupational skills. It is "training for specific vocation in industry or agriculture or trade" (Webster, 1993). Thus vocational education and training prepares learners for careers that are based in manual activities and some element of serious academics (general education). Specifically, vocational and technical education gives individuals the skills to learn and become productive citizens and for advancement in the workplace (Oni, 2006).

All said and done, vocational education is the most reliable vehicle to economic prosperity, political emancipation and diplomatic supremacy of a nation over others. For example some developed countries like United States have used food and technical aid to support poor countries who identify with them politically and diplomatically. They could successfully do these because of the general increase in the productive capacity of individuals as well as positive changes in work habits of all those who have received vocational and technical education. Vocational education empowers prospective employees with the awareness that the only way a worker can retain his employment is by producing more than he earns. The understanding that hard work leads to occupational success is what vocational education impact on its recipients.

Challenges of Vocational and Technical Education in Skills Development in Nigeria

According to Dasmani (2011) throughout the world and in particular the countries of sub-Saharan Africa governments are renewing efforts to promote Vocational and Technical Education and Training (TVET) with the believe that skills formation enhances productivity and sustains competitiveness in the global economy. In recent years, concerns have been raised by most African countries about the move towards making TVET complimentary to post basic education. The paradigm shift towards practical skills training with TVET in Africa is increasingly changing to make it more attractive, efficient and effective. One of the most important futures of TVET, as recognized by African governments is its orientation towards the world of work with the curriculum emphasizing the acquisition of employable skills. African Union (2007) report also stressed the current vision of African countries in developing a new strategy to revitalize TVET in African. The expectation is that TVET will promote skills acquisition through competency-base-training.

Nigerian government is also not left out in the quest for functional education when it categorically stated in the National Policy on Education FGN (2004) that

government will use every resources at its disposal to revitalize vocational and technical education in Nigeria. The policy document further said in order to achieve this type of education that comes with skills, courses like Introductory Technology, Agriculture, Home Economics, and Business Education will be introduced at the junior secondary school level and vocational course like, wood and metalwork, electrical technology etc. at the senior secondary schools level. Government said in recruiting technical teachers, the industrial experience of candidates will be given the highest premium. This is to allow for top quality skills to be imparted to students. It is important to state that despite these beautiful words of commitment coming from government, vocational and technical education that is to champion the acquisition and development of functional education (Skills) in Nigeria is be deviled by many challenges.

1. Deplorable State of Training Institution.

Technical manpower training institutions particularly the technical colleges are faced with several major handicaps resulting from quality of entrants, staffing situation, very low level of funding, inadequate training facilities among others.

- a. **Quality of Entrants.** The quality of students who now gain admission into technical colleges as observed by Mbata (1990) are students without adequate requisite qualifications. Probably these are the left-over's from those who could not be accommodated by grammar schools and when admitted into Technical colleges they end up without any marketable skills. The observation was also supported by Eze (2005) who regretted that in Nigerian the practice of sending only drop outs and mediocre to technical institutions skills persist. It is a common practice that admissions into polytechnic and colleges of educations (technical) are through absorption of remedial students who have little or no background in technical subjects; it is by this method that they can attract few students. One hopes that the practice of admitting unqualified student will stop with the renewed focus and commitment of the government.
- b. **Quality of Teachers/Instructors.** Qualified technical teachers and 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 education sector have been very static. Thus as observed by Atsumbe (2012)

training institutions compete in unfavorably with industries for the available manpower. Consequently many of the competent experience technical personnel end up in Industries where they are well paid. The few ones that remain in teaching do so while waiting for better offers in the private sectors. The national policy on education section 9, sub section 57b categorically noted that no education system can rise above the quality of its teachers, you can't actually give what you don't have. Presently a lot of technical teachers in technical colleges are deficient in the technical skills and pedagogical knowledge for efficient delivery of quality teaching of technical subjects. Yet acquisition of practical skills that will lurch Nigerian into the much desired technological advancement is hinged on these caliber of technical teachers.

- c. **Training Facilities.** The problem of inadequate training facilities requires some focus. Technological development advances daily in some developed countries such that a Piece of equipment becomes obsolete in a matter of months. The industrial sector, being profit oriented is always on the lookout for technological advances that could increase its profit margin in less time with greater labour efficiency. In Nigeria today, technical colleges and training institutions are hardly able to renew their facilities to keep pace with technological progress due to depressed economy. The trainees form several technical institutions graduate with virtually no skills. They enter the world of work only to discover that the equipment with which they were trained have been 100% modified or at time have drastically deviated from those on which training occurred. In Nigerian today, obsolete equipment are the best one can find in most technical training institutions. Funds allocated for procuring new ones are usually used to purchase old, dilapidated and refurbished equipment that neither can last nor give precise measurements or readings. This may be the reasons why products of these institutions are useable without further training in a co-operating industry or in the work environment on employment.
- d. **Need for Adequate Funding of TVET Programs.** The funding of technical and vocational education in Nigeria today has become difficult, even though it is this same form of education that holds the greatest guarantee for economic survival. TVET programmes in Nigeria today are in dire need of

funds to enable them live up to their billings. Inadequate funding is a major constraint to technical and vocational education in Nigeria. The funding needs of TVET programme are quite different from that of general education. Generally speaking, the funding of technical education in Nigerian is poor. The situation is even more critical with the funding of technical and vocational programmers. Olaitan (2002) advanced the following for reasons for the poor funding of TVET in Nigeria: (1) Government negative attitude to technical education (2) poor societal image of technical education in Nigerian (3) merger of technical and science education in ministries (4) sole funding of technical and vocational education by government (5) Above all technical and vocational education is more intensive, specialized and because of this it can be many times more expensive than general education. Government and individuals invested in general education than in TVET that is considered education for the drop outs or never do well. As a result quality skills are far away from the product of TVET programmes.

- e. **Administration of Technical and Vocational Education in Nigeria:** One of the major problems facing TVET programmes is mal-administration. There is always peculiarity in the administration of TVET. Many administrators of TVET in Nigeria especially at the policy making level are not trained vocational educators (Obanya, 2002). Since the administration of TVET is left in the hands of those who do not know the peculiar needs of the programme when it comes to distribution of funds, they are either under - estimating or diverting funds for technical education into areas which appeal to them. As a result of the mal-administration, skills acquisition in schools becomes difficult to implement.
- f. **Defective Organization of Industrial Attachment:** The Industrial Training Fund (ITF) was established by decree 47 of 1971 to promote and encourage the acquisition of skills in industry and commerce. The same decree ushered in the Students' Industrial Work Experience Scheme (SIWES) popularly known at Industrial Attachment whose objectives are well spelt out in the decree establishing it. Olaitan (2002) observed that this programme has fallen short of expectations as a result of poor Co-ordination between industry and training institutions. For one reason or the other, the responsibility for placements has been shifted to students who spend half of the time canvassing

for placement. Besides the entire programme is characterized with inadequate supervision, poor linkage between the industries and the training institutions. All these anomalies have made it practically impossible for the students to acquire the correct practical skills.

- g. **Low Image of Vocational and Technical Education:** The poor societal attitude to vocational and technical education is a serious impediment to its development especially in its delivery of practical skills to students. Atsumbe (2002) observed that because Nigerians prefer white collar jobs to blue collar jobs, anybody seen involve in jobs that have to do with labour is seen as a drop out or an ungifted person. In fact according to Dike(2009), despite Government effort in enhancing the image of Vocational and Technical Education, for example the introduction of vocational subjects at primary, secondary and tertiary institution and the setting up of various vocational skill acquisition centers, vocational education is perceived as the form of education for the under-privilege and those who do not know science. This singular factor unconsciously affects people's interest in teaching and learning any education synonymous with practical skills,

Mechanisms for Improving TVET in the Delivery of Practical Skills

Nigeria as a nation can rely on Vocational and Technical Education to catalyze technological, industrial and economic development in the country. Vocational education can also be used to ameliorate the unemployment situation in the country and promote the dignity of labour. For government to achieve this, a number of conditions have to be put in place to ensure that vocational and technical education is able to impart practical skills necessary for technological development.

1. **Periodic review of the Vocational and Technical Education Curriculum:** The curriculum of training for several vocational and technical education programmes have been criticized for being shallow and inadequate. With relevant curriculum the training of quality and efficient skilled manpower can be acquired. Atsumbe (2002) recommended that Government should as a matter of fact take a bold step in reviewing the entire curriculum of vocational and technical education curriculum for all levels of training institutions. Else the training institutions will be graduating candidates with

irrelevant skills that do not match the requirements of the industries.

2. **Forging closer link between IVET and industries:** At preset the solution to problems of dearth of quality skilled manpower rest with forging closer links and co-operation between industry, training institutions and government that exist presently. Industries to a large degree has been a major stake holder in determining the quality of training and manpower produced in vocational and technical education training institutions. If they are granted this kind of opportunities they will be forthcoming in financial contributions, material contribution (consumables), exposing students to industrial attachment, worthwhile work experiences and in helping to evaluate their job performances that will promote the quality of practical skill acquired by these students.
3. **Welfare and Training of Teachers:** Technical teachers are major catalyst in producing student with high practical skills that can bring about technological development. These technical teachers and instructors' need to be encouraged and supported to keep up- to- date by participation in regular workshops, seminars, in-service training programmes and conferences. The Federal Government as a matter of urgency commences staff industrial attachment for all cadres of technical teacher during long vacations. This will enable teachers have exposure and receive latest technological developments. Government for once should take a bold step in reviewing technical teacher's remuneration this will forestall further mass drift of the best technical teachers to the industrial and business sectors.
4. **Practical Skills Man Power Production Trust Fund:** We acknowledge the effort of the Industrial Training Fund in SIWES activities, even though there are lapses in its supervision, which permits some students to abuse the opportunity by doing industrial training in non-relevant skill acquisition establishment. Since government has realized that vocational and technical education is a vital tool for achieving technological advancement. We therefore suggest that government should establish technology or technical man power production trust fund with seed money of about five billion naira and with a board of trustee. With this practical skills could be promoted from the profit derived.

Since manufacturing and several industries are employers of TVET graduates, it is only reasonable that they should bear part of the running cost of institutions that are into training candidates in the act of practical skills acquisition. A system could be devised by which large business firms are made to contribute some percentage of their annual profit towards funding efficient vocational and technical education for the country's economy.

5. **Employers Participation in Training:**

Employers could be given opportunity to participate in recommending training particularly in the area of practical skills acquisition in the area of technical education. In the Canadian manpower service and Sweden this approach has been used successfully. When employers are made to recommend training for job seekers and students. Provision of adequate tools equipment and materials necessary for correct training in practical skills to employers in industries to conduct training or job seekers and students in industrial training will go a long way to enhance appropriate training and skill acquisition.

6. **Dual Training System in TVET:**

dual system of training in TVET refers to a situation where two or more bodies are involved in the training of students in vocational skills. For example in most advanced countries of the world particularly in Germany, this system of training students in practical skills is usually adapted. This is the way it operates, the formal school system handles the teaching of all theory related areas of a particular programme, while the student are sent to the co-operating industries where they are taught all practical's related to the topic treated in the class room. For example a student taking a course in machine shop practice is taught computer programming in lathe machine, he then proceeds to the industry to learn the act of programming lathe for different operations such as turning, facing, thread cutting, drilling etc. By this way students come out with High performance practical skills relevant for employment and technical advancement.

7. **Management and Administration:**

Management, administration and organization of vocational and technical education to a large extent determine its success in meeting its mandates. Since the current administrators of vocational education programme especially in Nigeria are usually not trained vocational educators, there are bound to be problems.

Research results shown lack of credibility, prudence, mismanagement and embezzlement of funds (corruption) meant for quality skills training. No matter how few these trained vocational administrators are, government should scout them out and allow them to manage the few vocational programmes with a view for proper co-ordination, re-organization and effective management. This will allow full quality skills acquisition.

Conclusion

It is obvious that acquisition of practical skills play a vital role in the technological advancement of any nation. If Nigeria's agricultural and mineral resources are to be properly harnessed and economically used there is need for emphasis to be placed on the acquisition of relevant skills because skills promote economic stability. It has been observed that vocational and ethical education can be relied on as a vital agent for achieving technological advancement through practical skills acquisition programmes. However several factors have been identified as big hindrance to achieving this. For example, the deplorable state of several vocational and technical training institutions, scarcity of qualified technical teachers, poor quality of entrants into vocational institutions, poor funding of TVET programmes and mal-administration in TVET programmes among others. Certain approaches for ameliorating the problem of practical skills acquisition have been discussed. Some of these include periodic review and total overhauling of curriculum of training, strong co-operation between training institutions and employers (industries), adoption of dual training system, constant retraining of technical teachers through short term programmes among others.

In conclusion, it is therefore paramount for Nigerian government at various levels to do more to ensure adequate funding, implementation and realization of quality Vocational and Technical Education which is a sine qua non for Technological advancement in Nigeria.

Recommendations

In order for vocational and Technical Education to effectively help in the delivery of practical skills in various institution, the following recommendation are made.

1. There should be a periodic review of training content at all levels of training in vocational technical education institution In Nigeria

2. Government and all stake holders should make effort to increase funding to take care of the dilapidated facilities and obsolete training tools and equipment.

3. Technical teachers should continue to be encouraged to attend seminars, conferences, workshops, and short term training outside the country and in the industry.

4. Government should as a matter of urgency separate the merger of TVET with science education to ensure prompt attention to TVET issues by TVET professionals.

5. Trained vocational educators should be allowed to take over the headship of various TVET agencies, parastatal and training institutions.

6. Complete and outright review of technical teacher's remuneration to forestall further drift of the quality technical teacher's in the private sector.

7. A complete re-organization of students Industrial Attachments Programme (SIWES)

8. Improving co-operation between training institution and employees of TVET grandaunts through collaborative linkages and affiliations.

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