

**THE APPLICATION OF STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS
(SWOT) ANALYSIS FOR MANAGING VOCATIONAL AND TECHNICAL EDUCATION
(VTE) PROGRAMMES FOR IMPROVED EFFICIENCY IN NIGERIA**

By

P. O. Okunola, Ph. D.
Dept. of Educational Administration,
University of Lagos, Akoka
Mobile: +2348037184695
E-mail: polayideokunola@yahoo.com

&

T. L. Adepaju, PhD.
Dept. of Educational Administration & Planning,
Obafemi Awolowo University,
Ile- Ife, Osun State- Nigeria
Mobile: +2348062952955
E- mail: adepojutaiwo2004@yahoo.com
(Corresponding Author)

Abstract

This paper reviews the current status of vocational and technical education programmes (VTE) in Nigeria and the major innovations of the Nigerian Government in the recent times in the sector vis-à-vis the demands of the modern world for vocational and technological development. It therefore, proposes a paradigm shift in the operation of VTE programmes in institutions of learning in Nigeria for improved efficiency through the application of The SWOT (strengths, weaknesses, opportunities and threats) analysis which has been an effective and useful tool for decision making in several organizations in recent times. In the context of this paper, SWOT is presented for use as a decision-making strategy as new vocational and technical education programme is planned. An insight into the wide range of the potential applications of SWOT analysis is also the thrust of the paper.

Introduction

Vocational and Technical Education (VTE) plays significant role in the socio-economic growth and development of a country. Research findings (Federal Ministry of Education, FME, 2003; UNESCO, 2005) have shown that countries that have breakthrough in the technological world today are those that have placed more emphasis and invested substantially on vocational and technological education. These countries have also re-defined their technological and vocational education through strategic planning, effective policy and appropriate decision making strategies.

Enebe (2000) in his paper highlights the significant roles which VTE can play in curbing unemployment and in providing the needed skilled labour for industrialization. For instance, FME, (2003) acknowledges the outstanding contributions of VTE in the development of advanced countries like the United States of America and Japan. Thus, the rapid advancement in science and technology being experienced today by these countries can be linked to the proper organization, effective strategic planning and policy statements supported by political will. As the labour market becomes more specialized and economies demand higher levels of skill, government and businesses are increasingly investing in the future of VTE through publicly funded training organizations and subsidized apprenticeship or traineeship initiatives for businesses (wikipedia.org/wiki/vocational_...).

The National Policy on Education (Federal Republic of Nigeria, 2004) refers to vocational education as:

that form of education, which is obtainable at the technical colleges. This is equivalent to the senior secondary education but designed to prepare individuals to acquire practical skills, basic and scientific knowledge and attitude required as craftsmen and technicians at sub-professional level.

Similarly, 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 (FRN, 2004).

According to Enebe (2000), “technical education stresses the engineering aspect of vocational education such as electronics, electrical, mechanical and automobile works”. Thus, both vocational education and technical education aim at developing among others, useful skills for productive purposes. The world has become aware in recent times of the magnitude of the changes resulting from advances in and the intensive application of technology. Science and technological knowledge have become so important that today; they have replaced capital as society’s most important resources.

The efficiency of the system of VTE of a nation is a major factor that determines its economic well-being, its standard of living, its potential growth and security. Another important factor is the amount of effort and money the nation is willing to devote to it. There is no doubt that this nation is in dire need of a good core of intermediate-level manpower in various industries to carry out their programmes. Craftsmen and technicians are the live wire of virtually all industrial activities without them, the machinery of industries will grind to a halt. So many industries are now being established in

this country by both the private and public sectors of the economy and each of these industries depends mainly on the availability of craftsmen and technicians. It is on this note that this paper is proposing the application of SWOT analysis to the process of managing VTE programme in Nigeria for improved efficiency.

Vocational and Technical Education in Nigeria: The Historical Perspective

The growth of VTE in Nigeria began with early missionaries. Although, the chief aim of the missionaries was to produce church workers and spread the gospel. They were equally concerned with food production, shelter construction, water conservation, wood work, metal work, health and technical requirements of living. The Hope Waddell Training Institute at Calabar was opened in 1894 with 18 apprentices, 7 carpenters, 5 engineers, 5 printers and 1 cook-in-training. All the European instructors came from Scotland.

Government made attempts to establish vocational and technical education centres in the 20th Century. For instance, at the government schools, Bonny and Benin City, instruction was given in carpentry and other crafts. Bonny government school was residential and under the supervision of European principal. Technical and vocational courses were also started in various government departments like Nigerian Railways, Nigerian Maritime, public work, etc. This was followed by the engineering and workshop courses at the old Yaba Higher College in 1932. There were series of development up till April 1959 when Ashby Commission was set up to investigate into the manpower needs in Nigeria for the period of 20 years (1960 – 1980).

Much of the interest in VTE and its rising status in Nigerian education system arise from the belief that a skilled workforce is a necessary ingredient for technological development. At the level of individual, it is believed that a more satisfying work life than an unskilled person. The Ashby Commission report which was submitted in September, 1960 pointed out the urgent need to improve the situation of dearth of technical manpower in Nigeria. As a result, the Federal Government showed some concerted efforts in improving the technical manpower situation in Nigeria by recognizing the importance and including VTE as an important component of the educational system (FRN, 2004). The government also embarked on the establishment of an appreciable number of various types of vocational and technical institutions in the Country

The Need for Vocational and Technical Education in Nigeria

Vocational and Technical Education is essential education which is intended to provide the skills and the manpower for industry and other engineering services required by society. Therefore vocational education programme is designed to prepare skilled workers for industry, agriculture, commerce, etc from the upper secondary level. That is why the programme includes general studies, practical training for the development of skills required by the chosen occupation and related theory. The UNESCO (2005) points out that the proportions of these components may vary considerably but the emphasis is usually on practical training which may be full time in schools, or part-time as supplementary education for apprentices or others recovering that practical training in employment.

The ratio of manpower training is further strengthened by the Nigerian society of Engineers at the three day conference recently concluded in Calabar. The society called Federal Government to co-ordinate the activities of all its agencies involved in the training of technological man-power to ensure that available resources are optimally utilized. In conclusion more emphasis should be placed on the production and training of technicians and craftsman to achieve the desired manpower ratio range between 1 4 32 and 1 6 60 of engineers/technicians/craftsmen what is significant is the utilization of teaching facilities in manpower production at all levels.

The Goals of Vocational and Technical Education in Nigeria

According to the National Policy on Education (FRN, 2004), the specific goals of VTE shall be to:-

- (a) provide trained manpower in the applied sciences, technology and business particularly art craft, advanced craft and technical levels;
- (b) provide the technical knowledge and vocational skills necessary for agricultural commercial and economic development; and
- (c) give training and impart the necessary skills to individuals who shall be self-reliant economically.

In pursuance of the above goals, the following education curricular contents are recommended

- (a) the main feature of the curricular activities for technical college shall be structured in foundation and trade modules;
- (b) The curriculum for each trade shall consist of four components:-
 - (i) General education
 - (ii) Theory and related courses
 - (iii) Workshop practice
 - (iv) Industrial training / production work.

Section 4, paragraph 22 (a) states the pre-vocational subjects at the Junior Secondary School level, these include; Agriculture, Business Studies, Home-Economics, Local Craft and Computer Education. At the Senior Secondary School level, the vocational subjects include the following; Agriculture, Applied Electricity, Auto-Mechanic, Book-Keeping & Accounting, Building Construction, Commerce, Computer Education, Electronics, Clothing and Textiles, Food and Nutrition, Home Management, Metal Work, Technical Drawing, Woodwork, Shorthand, Typewriting, Fine Art and Music. In the same vein, Section 5, paragraph 35 states the range of courses in the technical colleges.

An important conceptual landmark in the effort to modernize and vitalize VTE was the publication of the first “National Plan of Vocational and Technical Education in the Republic of Nigeria”, by Skapski (see FME, 2003). Skapski called for action by “ a group of professional competent educators” united by a sense of mission and aware of relevant achievements in other countries to move the change process forward. He also called for pilot projects, and for “the foundation of an adequately structured general education”. Since the publication in 1966, Skapski’s master plan has been the spirit of innovation and change in the profile of VTE in Nigeria. Most of the recommendations have been implemented in one form or the other including the 3 – 3 secondary education policy from 1982, the establishment of the industrial Training Fund (ITF) in 1971, the National Board for Technical Education (NBTE) in 1977, and nation-wide uniform educational structure and content nation-wide from 1977. Despite all these developments, some recommendations have not yet been implemented.

The 1999 Constitution requires governments in the federation to promote technology and science education (FRN, 1999) and this has led to directive to all higher institutions in Nigeria to admit students into science / technology and humanities disciplines based on ratio 60:40.

Types of Technology Education in Nigeria

S / N	Type of technology Education	Principal Manpower Role	Principal Delivery Institution	Academic Awards
1.	Pre-vocational education or general vocational education	Semi-skilled manpower for specific job training in apprenticeship or further formal education	Secondary Schools	WAEC / NECO Certificates in combination with other non-vocational subjects
2.	Vocational (Job specific) Education	Craftsmen and Master Craftsmen (Low-level manpower)	Technical Colleges and Vocational Centres	NABTEB Certificates: NTC / NBC and ANTC / ANBC.
3.	Technical Education	Technicians / technologists		

		(Middle-level manpower)	Polytechnics / Monotechnics	ND, HND, Post-HND
4.	Professional Education	Professionals (High-level manpower)	Universities	Degree: Bachelors, Masters, Doctorates

Sources: World Bank and FME (1998, pii)

Vocational and Technical Education, Job Creation, Poverty Reduction and Self-Reliance: The Meeting Point

VTE is no doubt a vital instrument for achieving Job Creation, Poverty Reduction and Self-Reliance. The relationships that exist between VTE and each of the economic –related concepts could be expressed functionally and symbolically thus;

$$Jc = f (VTE) \dots\dots\dots 1$$

$$Pr = f (VTE) \dots\dots\dots 2$$

$$Sr = f (VTE) \dots\dots\dots 3$$

Alternatively, these equations may be expressed compositely thus;

$$Jc, Pr, Sr = f (VTE) \dots\dots\dots 4$$

Where;

- Jc = Job creation
- Pr = Poverty reduction
- Sr = Self-reliance
- VTE = Vocational and Technical Education
- f = functional notation

In the four equations expressed above, Job Creation, Poverty Reduction and Self-Reliance are dependent variables while VTE is an independent variable. The idea being expressed here is that VTE has a good potential of creating job for the unemployed graduates, reducing poverty level of the people

since those who have undergone trainings in this area can establish on their own thereby getting income to feed their families, and making people stand on their own economically without depending on other people (self-reliance).

Problems associated with VTE in Nigeria

Several problems are militating against VTE in Nigeria. These problems may be group under the following;

- i. Manpower supply related problem (see Appendix I)
- ii. Resources / equipment related problem
- iii. Orientation of people / attitude of people towards VTE
- iv. Finance / Funds
- v. Energy related problem
- vi. Political Instability which often leads to incessant change in policies on VTE
- vii. Lack of strategic planning

These and other problems have negative influence on the full realization of the goals of TVE in Nigeria.

Government Recent Actions and Innovation Efforts

The immediate past administration reshaped to some extent, the terrain of technology and science education for better performance. In awareness of the problems that beset the full realization of the goals of TVE, a national seminar was held in November, 2000, in collaboration with UNESCO. The goals of the seminar were to reengineer and reposition VTE for better performance in the 21st Century and to market prescribed reforms to stakeholders. The material outcome of the seminar was the preparation of a national masterplan for the development of TVE in the 21st century. Key ideas in the national masterplan include the institution of entrepreneurial education at all levels, raising the quality of VTE, expanding access and inclusion, increasing number and improving quality of technology teacher, intensive marketing of VTE, and improving the managerial capacity of the sub-sector.

Some modest achievements in the last few years include rehabilitation and expansion of facilities, curriculum revision and teaching capacity building in collaboration with UNESCO. Increased flexibility in the system enables the hitherto excluded products of technical colleges to gain admission more easily into tertiary institutions. There is a gradual change of social attitude towards technology education and science education, and a focusing of government attention on their development. There is

also a growing recognition of the importance of technology and science for the success of democracy, attainment of mass employment and national economic development. VTE, with a scheme of financial empowerment of the clientele, is now government's main approach to poverty eradication. National poverty Eradication programme (NAPEP) as a parastatal of the federal government for poverty eradication, spearheads the idea of the use of VTE with financial empowerment of the clientele to eradicate poverty.

In 2002, the federal government took a step further to reposition VTE for greater advantage in the national education scheme. Major policy innovations in this regard include:

- The reversal of federal technical college craft programmes to full secondary education duration of six years. Students from primary schools are admitted into the junior college component of technical colleges to enable the technical colleges stand a fair chance of having good quality entrants as well as provide an early orientation to students towards technology education and the world of work. In addition, the FME has converted its technical colleges to science and technical colleges offering senior school science and normal craft and advanced craft programmes at senior secondary level to attract entrants.
- Setting up an action plan, following the resolutions of Higher Education Summit in 2002, to review the policy and mandates of polytechnics and colleges of education to enable them award degrees. Government is therefore considering the adoption of a policy of separate development and independent operation of tertiary institutions. The policy of separate development is geared towards eliminating all forms of marginalization consequent upon the old tradition.
- Setting up of an action plan to review the ceiling in career progression of graduates and staff of polytechnics and colleges of education, so that the historical disparities between university and polytechnic graduates may be eliminated.
- Setting up plans to integrate entrepreneurial education into the scheme of technology education.
- Introduction of post-HND programmes to enable holders of HND to qualify for professional registration and practice. (FME, 2003).

Application of SWOT Analysis for Initiating New Educational Programmes: The case of VTE

The external environment has a profound impact on educational institutions. During the final decade of the twentieth century, America's institutions, economy, society, political structures, and even individual lifestyles are poised for new changes. Recent shifts from an industrial to an information-based society and from a manufacturing to a service-oriented economy has significantly impacted the demands made on vocational programme offerings (Martin, 1989). Vocational programmes in comprehensive schools generally cover a broad spectrum of service areas, but they provide fewer overall programmes

within each of these areas than are provided in either vocational or specialty schools (Weber, 1989). Existing programmes, and those planned for the future irrespective of the type of school, should be based on a careful consideration of future trends in society.

Vocational administrators should become initiators in shaping the future of their institutions. Strategies must be developed to ensure that institutions will be responsible to the needs of the people. The Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (also referred to as the SWOT analysis in some management texts), provides a framework for educational administrators to focus better on serving the needs of their communities.

Although, originally intended for use in business applications, the idea of using this tool in educational settings is not altogether new. For example, Gorski (1991) suggested this approach to increase minority enrollment in community and other regional colleges. Management tools originally intended for industry can frequently be tailored for application in education due to fundamental similarities in the administrative duties of the respective chief executive officers.

SWOT is a simple, easy to understand technique. It can be used in formulating strategies and policies for the administrator; however, it is by no means an end in itself. The purpose of this paper is to demonstrate how SWOT can be used by administrators to analyze and initiate new programme offerings in vocational education (The example of the introduction of new programme in community vocational and technical education school is considered here)

The Context of SWOT

SWOT analysis can be simply understood as the examination of an organization's internal strengths and weaknesses, and its environments, opportunities, and threats. It is a general tool designed to be used in the preliminary stages of decision-making and as a precursor to strategic planning in various kinds of applications (wikipedia.org/wiki/vocational_...). When correctly applied, it is possible for a vocational school to get an overall picture of its present situation in relation to its community, other colleges, and the industries its students will enter. An understanding of the external factors, (comprised of threats and opportunities), coupled with an internal examination of strengths and weaknesses assists in forming a vision of the future and in making appropriate decisions. Such foresight would translate to

initiating competent programmes or replacing redundant, irrelevant programmes with innovative and relevant ones.

The first step in a SWOT analysis is to make a worksheet by drawing a cross, creating four sectors ¼ one each for strengths, weaknesses, opportunities, and threats. An outline of a worksheet is shown in Figure 1. The next step is to list specific items related to the problem at hand, under the appropriate heading in the worksheet. It is best to limit the list to 10 or fewer points per heading and to avoid over-generalizations.

<u>Potential Internal Strengths</u>	<u>Potential Internal Weaknesses</u>
1.	1.
2.	2.
3.	3.
4.	4.
S	W
O	T

<u>Potential External Opportunities</u>	<u>Potential External Threats</u>
1.	1.
2.	2.
3.	3.
4.	4.

Figure 1. A SWOT worksheet

SWOT can be performed by the individual administrator or in groups. Group techniques are particularly effective in providing structure, objectivity, clarity and focus to discussions about strategy which might otherwise tend to wander or else be strongly influenced by politics and personalities. It should be noted that when working in groups in educational settings, three distinct attitudes emerge among teachers depending on their years of service. Teachers having 0-6 years of experience tend to be the most participative and receptive to new ideas.

The SWOT should cover all of the following areas, each of which may be a source of strengths, weaknesses, opportunities or threats:

Internal environment of the institution

1. faculty and staff

2. classrooms, laboratories and facilities (the learning environment)
3. current students
4. operating budget
5. various committees
6. research programmes

External environment of the institution

1. prospective employers of graduates
2. parents and families of students
3. competing colleges
4. preparatory high schools
5. population demographics
6. funding agencies

The Internal Survey of Weaknesses and Strengths

Historically, administrators seek to attract students to their college programmes by increased promotional and advertisement efforts without paying any heed to their institution's strengths and weaknesses. If, indeed, such internal audits are carried out, areas requiring some changes reveal themselves. Furthermore, the potential and possibilities for new services and programmes may also emerge. Making a list of internal weaknesses could reveal areas that can be changed to improve the college, also some things that are beyond control. Examples of inherent weaknesses are quite numerous. A few are listed as follows: low staff and faculty morale; poor building infrastructure; sub-standard laboratory and workshop facilities; scarce instructional resources; and even the location of the institution within the community.

Seldom do weaknesses occur in isolation; strengths are present and need to be enlisted as well. Examples of potential strengths could be: (a) a reasonable tuition fee charged from students; (b) strong and dedicated faculty with a high morale; (c) articulation with other four-year colleges and universities which would enable students to transfer course credits; (d) a strong reputation for providing the training required to get entry-level employment; and (e) diversity among the student population. Minority enrollment and retention is a particularly important emerging issue because vocational schools have a mission to education for people from all sectors of society (Gorski, 1991; Radha and Dugger, 1995).

The assessment of strengths and weaknesses are also facilitated through surveys, focus groups, interviews with current and past students, and other knowledgeable sources. Once weaknesses and

strengths are delineated, it would be appropriate to reconfirm these items. It should be recognized that different perceptions may exist depending on the representative group consulted. Figure 2 depicts an example using a SWOT analysis.

Introduction of a New Programme in a Community Vocational and Technical School / College using SWOT Analysis

Let us consider a community vocational and technical school / college planning to add a new programme of producing air conditioner. The management could meet and conduct a SWOT analysis to help develop a strategy. The following points may appear on the worksheet

<u>Potential Internal Strengths</u>	<u>Potential Internal Weaknesses</u>
1) Existing electronics and electrical programmes could provide some basics required for air conditioner technology programme.	1) Current college is not well versed in air conditioner technology.
2) Colleageis enthusiastic and willing to go the extra mile to acquire knowledge and training in air conditioner.	2) Lack of sufficient space for the required extra equipment.
3) Sufficient funds to invest in high technology programmes.	3) Current safety features are not adequate for handling potential hazards such as air conditioner.
4) Successful experiences in the past with new, dynamic programmes, thus, expertise in dealing with change.	4) A faction in the college wants a programme in microprocessor technology rather than in air conditioner technology.
W	S
O	T

<u>Potential External Opportunities</u>	<u>Potential External Threats</u>
1) Local area hospitals, metal industries and communication companies suffer from a critical shortage of air conditioner technologists.	1) The technical college in a nearby community has already taken a lead and possesses the infrastructure to start air conditioner technology programme any time soon.
2) State and nation-wide demand for air conditioner technologists is projected to increase for the next 10 years.	2) Programming may not get approval from the board because of previous history of accidents of the college.
3) Local high school teachers' and students' enthusiasm for the proposed programme could result in recruiting the best students.	3) Some efficient and cheaper alternatives to air conditioner devices are appearing in recent literature which, if true, will not hold a bright future for prospective air conditioner technologists.
4) Expert air conditioner technologists in industries have offered to give their expertise on a part-time basis.	4) High school students in the area indicate a preference for business programmes rather than technical ones.

Figure 2. Sample SWOT analysis used to consider the feasibility of initiating air conditioner technology programme

Source: Adapted from Radha and Dugger (1995)

Drawbacks of SWOT

SWOT analysis usually reflects a person's existing position and viewpoint, which can be misused to justify a previously decided course of action rather than used as a means to open up new possibilities. It is important to note that sometimes threats can also be viewed as opportunities, depending on the people or groups involved. There is a saying, "A pessimist is a person who sees a calamity in an opportunity, and an optimist is one who sees an opportunity in a calamity." In the example provided in Figure 2, the opportunity provided by experts in industry to train students may be viewed by management members as a threat to their own position and job.

SWOT can allow institutions to take a lazy course and look for 'fit' rather than to 'stretch', they look for strengths that match opportunities yet ignore the opportunities they do not feel they can use to their advantage. A more active approach would be to involve identifying the most attractive opportunities and then plan to stretch the college to meet these opportunities. This would make strategy

a challenge to the institution rather than a fit between its existing strengths and the opportunities it chooses to develop (Radha and Dugger, 1995).

Summary and Conclusion

The paper has established the roles of Vocational and Technical Education (VTE) in the development of any nation. Apart from the fact that this form of education is specifically designed to prepare skillful manpower for economic growth and development, it also encourages practical and creative activities that could create opportunity for the learners to be self reliant and. It is the type of education that affords the learner (s) the skills and knowledge that is valuable in the labour market. This paper has reviewed the current status of Vocational and Technical Education programme in Nigeria and the major innovations of the Nigerian Government in the recent times in the sector vis-à-vis the demands of the modern world of vocational and technological development. The paper therefore proposes for a paradigm shift in the operation of VTE programme in our institutions of learning in Nigeria for improved efficiency through the application of The SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis which has been an effective and useful tool for decision making as new vocational and technical education programmes are planned. Example of VTE programme using the SWOT analysis is provided in the paper. An insight into the wide range of the potential applications of SWOT has also been established in the paper. Probably the strongest message from a SWOT analysis is that, whatever course of action is decided, decision making should contain each of the following elements: building on Strengths, minimizing Weaknesses, seizing Opportunities, and counteracting Threats.

As remarked by Radha and Dugger (1995), in order to be most effectively used, a SWOT analysis needs to be flexible. Situations change with the passage of time and an updated analysis should be made frequently. SWOT is neither cumbersome nor time-consuming and is effective because of its simplicity. Used creatively, SWOT can form a foundation upon which to construct numerous strategic plans for the vocational schools.

References

Enebe, P. A. (2000) 'Vocational and technical education teachers in Nigeria: issues and their implications for vocational and technical education' In Akinmade, C. T. O. , Oyetunde, T. O., Akpa, G. O., Enoh, O. A. and Ezenwafor-Ozaji, E. D. (Eds.) *Improving teacher education in the 21st century Nigeria: Challenges and strategies*. Faculty of Arts and Social Science Education : University of Jos.

FME (2003) *Education sector status report*. Abuja : Federal Government Press

Federal Republic of Nigeria (1999) *Constitution of the federal republic of Nigeria*. Lagos : government Press

Federal Republic of Nigeria (2004) *National policy on education*. Lagos : NERDC Press

Gorski, S. E. (1991). The swot team - Focusing on minorities. *Community, Technical, and Junior College Journal*, 61(3), 30-33.

Martin, W. R. (1989). *Handbook on marketing vocational education*. Westerville: Ohio State Council on Vocational Education.

Radha B. and Dugger, J. C. (1995) 'SWOT analysis: A management tool for initiating new programs in vocational schools' *Journal of Vocational and Technical Education*. 12 (1), 234-237 ,

UNESCO (2005) *Education in the African continent*. Paris.

Weber, J. M. (1989). Variations in selected characteristics across three types of high schools that offer vocational programs. *Journal of Industrial Teacher Education*, 26(4), 5-37.

wikipedia.org/wiki/vocational_...: Retrieved from the Internet on Friday, 21st of September, 2007

World Bank / FME (1998) *Education in sub-saharan Africa: Policies for adjustment, revitalization and expansion*. Washington, D. C.