



New Perspectives on Technical and Vocational Education and Training in Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Nigeria's unemployment situation and economic backwardness have always been tied to the nation's educational system which many believe lacks pedagogical practices, entrepreneurial competencies, and poor competency-based curricula with resultant effect of producing graduates lacking saleable skills to engender self-reliance or paid employment. The thrust of this paper therefore, was to awaken the consciousness of the Nigeria populace especially those who are directly involved in the educational process to this deplorable state of education and to chart the way to ameliorating it. In doing this, the paper reviewed the current problem and issues in Nigeria educational system with particular insight into issues of curricula and professional teacher's roles in the knowledge based economy. Based on the issues raised, the authors attempted to prove that there is no substitute to technical vocational education and training (TVET) as the education that matters; viable enough in all respects to drive all forces and factors necessary for attaining national greatness and for improved national economy. As a way forward, it was recommended that the Nigerian government should explicitly support and be fully committed to the development and expansion of TVET at all levels and to the strengthening of TVET links with the labour market.

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1. INTRODUCTION

The world is facing a worsening youth employment crisis [1]. In Nigeria, while many graduates cannot boast to be self-reliant, many are underemployed and yet numerous unemployed [2]. Worse still, it has become ubiquitous in Nigeria to see graduates from various citadel of learning roaming the streets for lack of employment [3,4]; to the extent that the usual slogan of lack of employment has moved to “unemployability”. This shows there is a problem with the educational system.

The reason for this deplorable development in the nation's educational problem may not be farfetched. The educational system lacks pedagogical practices [5]; it lacks entrepreneurial competencies [6]; it is not competency-based curricula [7]; and as such many students lack saleable skills to engender self-reliance or paid employment [8]. This suggests that something has to be done urgently about the Nigerian educational system to the grassroots. Furthermore, the constant review and adoption of various educational system in Nigeria including the; 8-5-2-4, 6-5-2-4, 6-3-3-4, and the current modified 9-3-4 system, point to indicate that all is not well with Nigeria education system. In this context, Obioma [9] observed that in these reviews, lip service was paid to Technical and Vocational Education and Training (TVET), an aspect of education which according to Rilwanu [10] is a password to any nation that wants to join the league of technologically developed nations.

The purpose of this paper therefore is to awaken the consciousness of the Nigeria populace especially those who are directly involved in the educational process to this deplorable state of education and to chart the way to ameliorating it. Therefore, this paper will discuss the role of technical and vocational education and training in Nigeria's development. The discussion will be under the following subheadings:

- *Current Problem and Issues in Nigeria educational system.*
- *Sources of the Problem in relation to issues of curricula and professional teacher's roles in the knowledge economy.*
- *Indices for quality assurance in the current knowledge economy.*

- *Future direction: TVET as education that matters.*
- *Factors militating against quality assurance on TVET in Nigeria.*
- *The way forward*

2. CURRENT PROBLEM AND ISSUES IN NIGERIA'S EDUCATIONAL SYSTEM

In discussing how far in Nigeria's educational system, it will be a self-deceit if Nigerians fold their hands and say that all is well with Nigerian educational system. The quality of education accessible to Nigerians has been on the decline. In this context, [11] stated that standard of education in Nigeria is not what is at issue; what is actually falling is Nigerians' ability to meet the set standard. This is obvious when one assesses the graduates turned out annually from Nigerian higher institutions of learning into the labour market [12]. It may not be far from truth that a great number of the graduates who do not secure employment are not just employable [13,3]. Most of them do not possess skills necessary for effective performance in the job arena [14]. All these amount to the fact that Nigerian education is sick and direly need healing.

To achieve the educational healing, stakeholders in the educational sector have put up some plans and policies to ensure meaningful progress in education. National Policy on Education was born in 1977 out of this passion to reform the educational system in Nigeria. Since then, it has undergone several reviews starting from 1981, 1998, 2004, 2009 and 2013 all in a bid to achieve a functional education. In spite of these measures, Nigeria's education system is yet to provide the nation with the education that develops the total man [15,16]. This is as a result of certain factors that hinge on issues of curricula and professional teachers for the current global knowledge economy among others.

3. PROBLEM RELATING TO EDUCATION CURRICULA FOR NATIONAL MANPOWER NEEDS

One major aspect of Nigerian education that has been quite often criticized is the curriculum [17,15,7]. The early critics include members of

the Phelps-Stokes and Advisory Commissions who submitted their separate reports in 1925 [16,18]. They observed that education in African generally had not been adapted to the needs and aspirations of the populace. In their various reports, the Commissions suggested that the subjects taught in Nigerian schools be adapted to African life and culture. This informs that the value system of Nigerians should take precedence for any meaningful system of education. Just like Nwosu [19] put it; what may be ideal in Europe and America, may not suit the Nigerian values and ethics. This point to the fact that if Nigerians are educated without regards to their socio-cultural provisions, the outcome is inadvertent. However, the best from foreign cultures could be extracted and blended with the local culture for enhanced sustenance of the Nigerian distinctive identity [19].

It is pertinent to note that a few decades after the publication of the Phelps-Stokes and Advisory Committee Reports, particularly after World War II, slight adjustments were made in schools' curriculum which were now slightly oriented towards African life. But the progress in this direction was not remarkable, for as late as the 1960s, education in African schools, particularly in Nigerian grammar schools, was still "too literary; not practical, not adapted to the needs of a developing agricultural nation" [16]. This type of academic education only "tends to produce proud, lazy people who dislike manual labour in preference to white-collar jobs". The flaw in African especially in Nigeria education in this respect has been blamed on missionary influence [20].

The curriculum of the missionary schools did not emphasize vocational education because their major focus was to train catechists, interpreters, clerks, cooks among others. One significant effect of this was that the curriculum of the academic grammar schools was popular while that of the other fields of taught was not ([21]. There was constant rush to the academic grammar schools while enrolment in vocational schools, agriculture institutes and trade centres was comparatively poor, which was traceable to missionary influence. Effort to circumvent the missionary influence on educational system in Nigeria has launched the nation to the widely and globally acclaimed technical and vocational education and training (TVET) which is currently referred to as education that matters.

4. ISSUE OF PROFESSIONAL TEACHERS ROLES FOR QUALITY ASSURANCE IN THE KNOWLEDGE ECONOMY

One thing very clear about Nigeria's Vision 20: 2020 is the emphasis on functional education which will lead to industrial development. This has resulted in mounting several programmes as; National Directorate of Employment (NDE), National Poverty Eradication Programme (NAPEP), National Power Training Institute of Nigeria (NAPTIN), Graduate Skills Development Programme (NGSDP), Subsidy Reinvestment and Empowerment Programme (SURE-P), and others, that place emphasis on application of skills and knowledge while using the hands. Consistently, all the national development plans have also reinforced effort to emphasize education by doing.

These emphases are challenge to the classroom teacher. Therefore, teachers in the 21st century have sublime responsibilities in discharging their professional duties. It is expected that teachers of science and technology, and indeed the crusade of academic teachers, should possess not only skills and competencies [19], but must adopt teaching methods and materials that will motivate and inspire the current day learners, who eagerly wish to be engaged with exciting, relevant content and opportunities for learning through experience and by doing [5]. That is to say, teachers at all levels are challenged to change their teaching and learning methods to ones that should be suitable and adapt to the new and emergent academic demands which emphasize on productive economy. The methods that most emphasize teaching and learning through experience and by doing lean on pedagogical and andragogical approach. Table 1 gives summary of inherent characteristics of both approaches with indicators.

In applying these attributes in teaching for productive outcome, teachers should through such means;

- i. Cultivate in learners strong moral ethics.
- ii. Build on and develop skills and knowledge necessary for professional autonomy, independence and self-reliance.
- iii. Make teaching profession an attractive vocation.
- iv. Inject ideas that promote spirit of enquiry and collaboration among learners.
- v. Encourage ingenuity that may engender and stimulate innovations among learners.

Table 1. Promise of instructional techniques (pedagogy and andragogy)

S/N	Indicator	Pedagogical	Andragogical
1	Norm	Teacher-directed learning	Instructor-directed learning
2	Planning	Primarily by teacher	By participative learning
3	Design	Formal authority oriented by teacher competitive judgement	Informal, mutually respectful. Consensual, collaborative supportive
4	Setting objectives	Primarily by teacher	By mutual negotiation between instructor and learner
5	Electing learning plan	Content unit(s) Course syllabus Logical sequence	Learning project(s) Learning content/stages Sequenced in terms of capacity and readiness
6	Learning activities	Transmit technique(s) Assign reading(s)	Inquiry project(s), independent Study, experimental technique(s)
7	Synthesis of needs	Primarily by teacher	By mutual negotiation
8	Evaluation	Primarily by teacher	By mutual assessment of self-collected facts

Source: Modified chart from *empowering creativity by Chong H. Kim (2010)* and adapted from Okoye (2013); *Human Resource Empowerment: An Intervention Strategy for Effective Community Development and sustainable lifestyle*

- vi. Sensitize consciousness to bear on the local environment for optimal development.

All in all, teachers are expected to seek truth, teach truth and preserve truth, whatever method adopted for improved economy.

5. INDICES FOR QUALITY ASSURANCE IN THE CURRENT KNOWLEDGE ECONOMY

Education is the most powerful agency in moulding the character and determines the future of individuals and of nations. According to Goel [22] education improves functional and analytical ability and thereby opens up opportunities for individuals and also groups to achieve greater access to labour markets and livelihood. What is undisputable is that education is time dependent and situates in a continued changing world economy [10]. As such, education system must be determined by the changing values of the society, the society's attitude, ethics, needs and expectations. For instance, during the colonial era in Nigeria, an average literate Nigerian was contented for being able to read, write and solve simple arithmetic problems and also defends his faith in God (missionary education influence); he was only needed to clerk down matters and interpret English language to the rural community Nigerians [18]. The primitive man only sought to procure tools to defend him and environment. In this manner, education keeps on changing to suit

man's economic needs and what he valued important until now when education is expected to equip human-kind with knowledge and ability to explore his environment with scientific skills and technology. It is therefore envisaged that the focus and objectives of education should also change to meet the demands of people in their local environment and as well help them impact positively in the global economy by acquiring the necessary knowledge, skills and attitudes. The implication is that education should responsibly provide human-kind with; saleable skills, value, attitudes, competencies and knowledge necessary to explore and harness the dividends of his surrounding for his wellbeing and the society [8]. As Okpala [5] puts it, the educational sector must reposition itself to effectively transmit skills and competencies required for success and provide solutions to human-kind problems. It is on this premise that Assessment Training of 21st Century Skills [23] asserted that in the current knowledge economy, education should be designed to provide eclectic abilities that blend with technical tools and engender critical thinking skills to provoke relevant learning intentions for all levels of learners and create avenues for continued learning opportunities. This assertion gives credence to TVET as the education that matters in the present dispensation; and implies that any nation that neglects investing in TVET is short-changed in educational system that provides people the all-important learning attitudes and

skills required to thrive in the knowledge economy. Just as Dike [14] put it, skills acquisition is one of the tried-and-true ways to reduce poverty and enhance any nation's economy.

6. FUTURE DIRECTION: TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) AS THE EDUCATION THAT MATTERS

In this context, education that matters (TVET) refers to the kind of education that is viable enough in all respects to drive all forces and factors necessary for attaining national greatness [24,25]. It is education that has the capacity and the wherewithal to deal with the current decay in the educational system and practices and drive the nation unto greatness [14]. It is also the kind of education that provides platform for the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economy and social life [26].

TVET refers to those aspects of educational processes involving, in addition to general education, the study of technologies and related sciences, as well as the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life [27]. In the present day, TVET is increasingly recognized as an effective means of empowering young people to engage in productive and sustainable livelihood [28]. TVET develops individuals' capability and capacity to design, produce and use technology products and systems, as well as to assess the appropriateness of technological action.

Therefore, TVET is the education of those who need it, those who want it and those who practically want to progress by it [15]. Just as technological advancement in addition to national consciousness is the master driver of development of any nation, similarly, TVET is the road on which technology drives [10]. Therefore, technological advancement which is the tool to improving national development will be hampered where adequate attention is not given to TVET; the path way [14]. TVET as a programme of study, whether formal or in formal, transfers quality skills into people for a country's technological, economical, social and cultural developments [29]. This is to say that national greatness will remain a pipe dream for any nation including Nigeria if there is no implementable

strategy and concerted effort to make TVET functional at various strategic levels.

All successful nations, Britain, America, Germany, France, Israel and Asian Tigers (China, Hong-Kong, Malaysia, Korea, Indonesia & Japan) arrived where they are today by giving TVET the attention it deserves as well as forging a resilient, patriotic national consciousness that gave identity to work with one mind towards the achievement of their present greatness [25]. The problem in Nigeria may not be far from the fact that the Nigeria system of education lacks consciousness and identity. This lack of national identity and consciousness is the issue any education that fits into the frame of "*education that matters*" must first and foremost address. Although this challenge is captured in the National Policy on Education [27] as the primary task to be addressed by education, yet it has only remained on paper as there seems to be no practical means of implementation.

To uphold national consciousness and identity, the education that matters must be indigenous [30]. It must be adapted to Nigeria locality and culture. It must shift emphasis from just theory to practicality [10]. It must be able to convert theories to practice. It should be especially flexible in content (i.e. designed to allow broad participation of people requiring skills training). It should be oriented to the labour market (i.e. design that allows appropriate adaptation to changing trends in the local, national and global labour market and economy sector [31].

Borrowing verbatim the education from developed nations is rather a cog in the wheel of development if it cannot be tailored to fit locally into any nation's culture, values and ethics. Like Orakpo [30] stated, for Nigeria to move forward, it needs its own indigenous technology, tailored to meet its peculiar needs just as Japan did; and that any nation's economy should be sourced inwardly [32]. In support of this advice, the former Nigeria Senate President David Mark was reported in the national 9 pm network news, March 27, 2013, to have publicly told Nigerians that the economy model in the country has failed because it is tailored towards foreign and advanced economy [33].

7. FACTORS MILITATING AGAINST QUALITY ASSURANCE ON TVET IN NIGERIA

As laudable as TVET is, its quality in Nigeria is being hampered by many factors. Few of these are discussed hereunder;

7.1 Insufficient Number of Quality Students

In Nigeria, vocational and science education at the pre-tertiary level is too poor to provide students with a robust knowledge base [17]. As a result, the number of students at the secondary school and technical college level, who have the necessary background to enable them to pursue scientific and technical programmes at tertiary level, is inadequate [15,34]. Instability in economy contributes to the cause of this poor vocational and scientific background of students entering higher education. As a result of this, TVET in Nigeria suffers from a poor image (partly due to poor performance in the past) as a result of poor sponsorship by governments [25]. In the end, students opt for other programmes thereby making the labour market miss out valuable manpower with practical technical skills.

7.2 Inadequate Number of Quality Educators

There are not enough specialized and qualified TVET teachers at both secondary and post-secondary levels in Nigeria [2]. This deficiency affects the quality of students that are produced. The very few that are qualified lack practical knowledge in the workplace because they do not have direct contact with the labour market [4]. This lack of direct contact with industry could lead to imparting outdated knowledge to student by TVET instructors. At the end, poor quality students are produced.

7.3 TVET Curricula in Nigeria

TVET is limited in quality and relevance in the Nigeria setting [14]. The curricula in large proportion do not incorporate technological innovations and as a result turns out graduates who are not abreast with trends in the world of work where they are trained to work [17,7].

Most of the institutions that provide TVET programmes in Nigeria lack tools and equipment necessary for practical training [35]. Where these tools and equipment are present, they are in most cases obsolete, bearing little no resemblance to the technologies currently used by industry [24]. Inadequate training tools and equipment cause students become overcrowded around a machine tool during practical demonstrations. In the end majority of the

students would only observe the demonstration and would not have the opportunity to participate in hands-on practice. For the fact that institutions are poorly equipped, training remains theoretically heavy and the graduates are not better skilled than their counterparts in other academic fields. As a result, TVET graduates are not given employment priority by the labour market. This factor gives a poor image to TVET programmes that produce graduates who do not possess employable [8].

8. WAY FORWARD

- It is important to assess periodically the extent to which the Nigerian government explicitly support and fully committed to the development and expansion of TVET at the national level and to the strengthening of TVET links with the labour market. This commitment should be reflected in the country's national development strategies and education sector plans, with a substantial budget for TVET or at least formalize plans to increase the budget over time.
- There should be an explicit support and encouragement for practical and competency-based education and training (formal and informal) by the stakeholders of education.
- Staff training should be made an imperative element of all TVET interventions and outlets. The trained staff members (through short-term course) should return to their posts after completing their trainings and serve as academic reinforcement both to their colleagues and students.

9. CONCLUSION

A flash back to the issues raised and discussed in this paper, one could apparently conclude that there is no substitute to education especially TVET for improved national economy. This thought implicates teachers' duties in the classroom activities. A teacher is professionally required to always update his knowledge and capacity to remain afloat on and be abreast of the in-thing in their professional area that keeps on changing. And to add value to the skills and knowledge imparted, such knowledge should be relevant to the environment where the skills acquired are meant to be applied.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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