

COMPUTER EDUCATION IN SECONDARY EDUCATIONAL LEVEL OF NATIONAL POLICY ON EDUCATION: THE CHALLENGES OF ITS CONTINUITY AND ITS TVET POTENTIALITY FOR SUPPORTING INDUSTRY.

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Abstract

The critical assessment of computer education in secondary education of the national policy on education is of a great importance. The global occurrence has given birth to Technical and Vocational Education and Training (TVET) programme saddled with the responsibility of producing skilled and trained manpower for the national support and growth of the industries, but the place of computer education in TVET is missing because of the numerous challenges facing its continuity. Therefore, the paper examines the place of computer education in the secondary educational level of the national policy on education, the paper focus on those challenges of computer education in the national policy; why its failing to support industrial growth as it ought to in the nation. Finally, recommendations were made which was believed that if implemented will go a long way to elevate and boost computer education in supporting the industries, such as proper funding, inclusion of computer education into the main basic core secondary school subjects, and among others.

Keywords: Computer, Computer education, secondary education, TVET, etc

Introduction

Computer education as a subject in secondary school education curriculum is to familiarize learners with the use of computer system, and related social and ethical issues. It gives users the opportunity to handle texts, images, figure, music, sound, video, etc to process data by analysing, organizing, storing, retrieving, presenting and communicating. Many countries are reevaluating their education system in order to incorporate computer education to bring the next generation up to international standard. Kozma, (2011) pointed out that application of computer is making dramatic changes in economic and social development around the world. Technology has changed teaching and learning in many ways and will continue to change the education systems throughout the world. Countries around the globe have established groups to computer education in order to catch up with the increasing pace to technological advancement. According to IFIP-UNESCO (IFIP-UNESCO, 2009), Computer education is such an important subject that helps the industrial and commercial growth of a country. Computer can improve the process of designing, delivering, marking, and grading of examination results. Therefore, investment in the equipment, teacher training, and support services should rank higher in government priorities. In order for Nigeria, a developing country to meet up with this increasing pace, computer education should gain its ground in secondary school curriculum. This will enable the next generation to catch up with the pace. One of the objectives of national computer policy (NCCE, 1988) is to use IT (Information Technology) for education and that education starts at secondary level where students are able to understand the needs to acquire such knowledge. It is unfortunate that the policy formulated since 1988 has still not taking full effect. Looking at the present education curriculum would reveal some problems associated with the implementation of computer education in the curriculum.

Education as define by Antony (2017) is the activities of educating or instructing; activities that impart knowledge or skill. It is also the knowledge acquired by learning and instruction impacted to an individual either in a formal or non-formal way to contribute positively to better the society and also be self-reliance. Education is the bedrock of development of any society. Nigerian government over the years initiated various education policies geared at develop child education in order to make it at par with international standard. This paper discusses goals of secondary education in Nigeria, since secondary education is the basic or as raw material provider for the desired future manpower resources. It is also a link between the primary and tertiary levels of education. Therefore, the level of secondary education in the national policy on education is highly sensitive.

The National Policy on Education (2004:7) listed four major objectives of Nigerian education. They include; the inculcation of national consciousness and national unity, the inculcation of the right type of values and attitude for the survival of individuals and the Nigerian society, the training of the mind in the understanding of the world around, and the acquisition of appropriate skills and development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of his society. Such is the responsibility of secondary education in the national policy on education.

Secondary Education in National Policy Education

Secondary education is the education that children received after primary education and before tertiary stage. It is observed that secondary education is of great importance to the nation because it is a source of mid-level manpower production that is necessary to sustain, support and improve the economy. It is also an expectation level that is might to produce technical and vocational educational trained/skilled personnel at average level for industrial support and development. The New improved goals of secondary education in Nigeria are now:

- a. As a result of the increase in the number of primary school pupils, secondary education provides the pupils opportunity for education of higher quality, irrespective of sex, social, religious and ethnic background.
- b. Secondary education offers diversified curriculum to cater for the differences in talents, opportunities and future roles possessed by or open to students after their secondary school course;
- c. With the advancement of modern science and technology, secondary education provides trained manpower in the applied science, technology and commerce at sub-professional grades;
- d. Secondary education helps the students to understand the relative cultures in the multi-ethnic societies in Nigeria. Thus, culture, art, and languages of Nigerian societies will be developed and promote as part of world's cultural heritage;
- e. Through secondary education, it fosters national unity with an emphasis on the common ties that unite us in our diversity;
- f. With various learning in secondary, to raise a generation of people who can think for themselves respect the views and feelings of others, respect the dignity of labour, appreciate those values specified under our broad national goals and live as good citizens;
- g. Finally, secondary education provides technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development

It is pertinent to stress that the above goals will make secondary education leavers become a dependable source of manpower supply for specialized skilled production at the tertiary level if they are sincerely implemented. (FRN, NPE, 2018). The place of computer education at this level needs a proper analysis. But first what is technical and vocational education and training in national educational policy in Nigeria.

Technical and Vocational Education and Training (TVET) is concerned with the acquisition of knowledge and skills for the world of work. Throughout the course of history, various terms have been used to describe elements of the field that are now conceived as comprising TVET. These include: Apprenticeship Training, Vocational Education, Technical Education, Technical-Vocational Education (TVE), Occupational Education (OE), Vocational Education and Training (VET), Professional and Vocational Education (PVE), Career and Technical Education (CTE), Workforce Education (WE), Workplace Education (WE), etc. Several of these terms are commonly used in specific geographic areas. (Wikipedia, 2018). Also, the Technical and Vocational Education & Training (TVET) comprises the process of skill-development of the workforce working in the industry of a country. It is also defined as marketable and economically relevant education for people. Technical Education refers to post-secondary courses of study and practical training aimed at preparation of technicians to work as supervisory staff. Vocational Training, on the other hand, refers to the lower-level education and training for the preparation of skilled or semi-skilled workers in various trades, but it does not enhance their level with respect to general education. (Cliff, 2018) The Technical and Vocational Education and Training is the inclusion of basic technical and scientific knowledge with the skill-based vocational programmes.

United Nations Educational Scientific and Cultural Organization (UNESCO) 2013 defines TVET as, refers to all forms and levels of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life. This is the higher level of skills and knowledge required to be taught as advanced learning prior to workplace entry to cope with the emergence of technologies in the workplace. Technical and Vocational Education programmes are offered at Vocational Training Institutes and Centers, Technical Colleges at the Secondary and college of education, polytechnics and universities at Post-Secondary Education level. Goals of Technical and Vocational Education and Training the Nigerian National Policy on Education outline the goals of TVET as follows:

- i. To provide trained man – power in applied sciences, technology and business.
 - ii. To provide technical knowledge and vocational skill necessary for economic development
 - iii. To give training and impart necessary skill for self-reliance economically
- From the above outlined goals, it is very clear that the essence of TVE is to serve mainly a vehicle for achieving economic development and prosperity in a Nation through economic emancipation of individual citizenry. It is also for transforming and revitalizing in other to support industrial growth. The National Economic Development is symbiotic to the level of Citizenship Economic Development and Contribution (CEDC). Scope of Technical and Vocational Education (TVET) Components of TVE are imbedded into the Nigerian educational system. From the basic, post – basic and tertiary level emphasis are that the system should have mechanisms for skill development, attitude of productivity for self-reliance and national development. In the basic educational levels that span from

primary school to junior secondary school, there are prevocational subjects taught to pupil to create an awareness. Apart from compulsory subjects, which are a general knowledge in nature and field of study subjects, that student is to pick in accordance with their interest and performance. There is array of vocational and technical subjects that are compulsory for students to pick from. The essence is to place emphasis on skill development and entrepreneurship. These trade subjects and their curriculums are carefully prepared to be practical in nature to ensure the achievement of their set goals and objectives. The new 4th edition with 2005-2012 update of national policy on education reveals computer education as a non-compulsory prevocational subjects from which pupil can choose as optional. Computer education is still being meant with lot misconceptions and misinterpretations in the industries. The issue of where to proper place it always arises. (FRN, 2012). Therefore, computer education in national policy reveals better direction.

Computer education and National Policy on education

Critical analysis of the position of computer education /ICT education in the nation's national policy on education under secondary education reveals a clear indication that computer education has not been regarded as a core subject. FRN (2018:16) computer education falls under Group B.as prevocational/ vocational electives subject at junior and senior secondary school levels. The pre vocational elective subject has make computer education optional to the students at secondary education level. This have really throw a huge set back at the speed which computer education use to start off at initial implementation. One of the setbacks reveals that most secondary schools (Public and private) not really include computer education (computer studies) in the school curriculum. Thereby, hinder the interested students from enrolling for the subject at secondary school certificate examination level. In lieu for computer education to fulfil the potentiality of been a TVET subject in secondary school for manpower production to support and sustain industrial growth must be fully embraced by all the students at various secondary school stages. Computer education in secondary education point to the fact that the appropriate skills and training required might not be uniformly taught to the interested students offering it as their elective subject. Despite this computer education implementation policy is faced with numerous challenges.

Challenges of Continuity Implementation of Computer education in Secondary Education

Computer Education in National educational policy is facing lot of challenges despite of it assumption of the full implementation at the Secondary Education Level. Therefore, in this way, "at full implementation the computer education is still experiencing intractable problems. Teachers, equipment and facilities needed for the effective implementation of the computer education policy were not on the ground even many years after the policy had commenced". Adesina (2012), opined that policy implementation affecting any aspect of educational issues in the education field has been very ineffective in Nigeria because of the following: 1. Lack of trained and experienced system manager. 2. Politicization of educational decision making alienates faithful implementation of the policies. 3. Intra and inter-organization and personality conflicts. 4. Inadequate monitoring and evaluation. 5. Under-estimation of human and material resources for implementation of educational plans and policies. 6. Political and societal instability which failed to provide a conducive atmosphere for policy implementation. 7. Political

patronage and indiscipline in the management of public institutions taking the form of ethnicity, nepotism and tribalism. 8. Financial indiscipline in the management of financial resources in the public system, otherwise called corruption and fraud. 9. Lack of exemplary leadership style. Okoroma (2016), identified two important sources of financial constraints that militate against successful implementation of educational programs in Nigeria. They are; i. Under-estimation of the cost of educational programme and over estimation of anticipated financial resources to fund the programs. 6 ii. Over-reliance on and over optimism about external assistance. He further stressed that these two constraints have affected adversely the effective implementation of all educational programs in Nigeria since independence. He noted that in some cases, the little money available was never carefully utilized. In other cases, part of the fund voted for and realized by the various governments never reach its destination. According to Adeyemi (2001), “the problem of grossly inadequate facilities such as dilapidated buildings and poor or nonfunctional equipment, libraries, workshops and laboratories which were the main features of secondary schools, were even worst at university level”. Even till now at 21st century Adeyemi’s observation as at 2001 is still persisting in Nigeria’s full educational programme policy implementation. “The funding of education in Nigeria has been on a very low ebb. The United Nations Educational Scientific and Cultural Organisation (UNESCO) recommendation on budgetary allocation on education is that, 26% of the country’s annual budget should be allocated to education, also vision 2010 committee recommended that the country should spend at least 26% of annual budget on education. Ironically, no administration in Nigeria had got near to these recommendations of both UNESCO and vision 2010 in respect of budgetary allocation to education.

Conclusion and Recommendation

To bridge the gap, both policy and practice need to be implemented. The new national updated policy must be popular and deliverable to all computer education teachers in secondary schools (both at Junior and senior level) so that the teachers will be able to effectively implement the philosophy and objectives of the computer education subjects. Computer education should be seriously considered as a core subject at the secondary education level it should be moved from prevocational electives subject if it really should be a TVET the production of manpower to support the industrial growth. Regular in-service training for teachers must be in place that includes basic computer operations, programming and teaching methodologies. The trainings should be made open to private schools as well to ensure uniform standards. In addition, most teachers need retraining in integrating computer techniques into Instructional methods. Chen (2015) outlined what this training should include: Basic computing skills up-to-date theories of learning and instruction wide ranging applications of IT in education IT trends in education and common mistakes of computer use in education Software evaluation methods and classroom technology integration this goes beyond the responsibility of the Federal Ministry of Education. State Ministries of Education within the country should offer training for schoolteachers and ally with various institutes of education in universities whose primary assignments are the professional development of teachers. This would involve adequate budgetary allocations for such programs. Furthermore, deliberate effort should be made by the government to fund new hardware to at least meet the stipulated 8-1 student to computer ratios. Making hardware available is a governmental priority. Mozambique’s IT priority has established 'Information Technology Access Mobile Units' in the form of buses carrying computers for use by interested people in those areas where infrastructure is not yet available. A similar arrangement can be put in place for schools. A single school computer laboratory can be fully equipped so that other schools within

the same area can use it on a rotating basis. For private schools, compliance with the policy hardware provisions should form the basis of school accreditation.(FGN, 2009).

The shortage of teachers is a national problem but designated colleges of education and universities should be assisted in the formulation of successful computer education programs so that within a few years qualified computer teachers will be available to secondary schools. It is difficult and expensive to service and repair computers using computer firms because schools are dispersed all over the nation and computing firms are located only in the cities. It may be necessary to employ computer technicians in state offices of the Federal Ministry of Education so that schools can share as the need arises. Private schools will only have the option of resorting to computer firms. Above all, adding computer studies examinations in Junior School Certificate Examinations as well as Senior School Certificate Examinations will catalyze serious commitment. Cameroon, for example, has introduced computer education as an examinable subject at the General Certificate of Education Level (Onabanjo, 2017) which has increased computer awareness. Putting these types of practices in place will reduce; if not entirely close the gap between policy stipulations and school practice. Oladayo (2019) suggested that education curriculum at secondary and tertiary institutions should be properly aligned to Industry needs; otherwise, it creates a weak linkage between the ‘town’ and ‘gown’. There should be Political and societal stability which helps to provide conducive atmosphere for national policy implementation and continuity. Federal government should curb financial indiscipline in the management of financial resources in the public system, otherwise called corruption and fraud. Let there be an exemplary leadership style. To mention but a few, if the recommendation could be practice it will go a long way make computer education responsive in secondary school and also produce man power for sustainable industrial growth.

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