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# ASSESSMENT OF MANPOWER AVAILIABILITY FOR TEACHING CONSTRUCTION TRADE SUBJECTS CURRICULUM IN SENIOR SECONDARY SCHOOLS IN THE FEDERAL CAPITAL TERRITORY, ABUJA

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## ABSTRACT

The teaching of trade subjects curriculum in senior secondary schools does not only require the necessary instructional facilities for the subjects, but most importantly, the manpower needed for the impartation of the relevant skills and knowledge required; leading to the realization of the aims and objectives of the subjects. This study investigated the manpower available for teaching construction trade subjects curriculum in senior secondary schools in the Federal Capital Territory, Abuja. Descriptive survey design was adopted covering a population of 33,551 which comprised of 153 administrators, 64 construction trade teachers and 33,334 senior secondary school students. Purposive sampling technique was used to select 50 senior secondary schools while Taro Yawane's equation was used to determine a sample size of 561. Checklist of personnel requirement as specified by Nigerian Educational Research and Development Council (NERDC, 2010) was used as instrument for data collection. A descriptive statistics of frequency and percentage was used to answer the research question. Findings revealed that construction trade subjects teachers in senior secondary schools are inadequate. Based on the findings, the study recommended that school proprietors and PTA should often recruit additional teachers and other relevant manpower for proper implementation of construction trade subject curriculum in senior secondary schools.

**Keywords:** Manpower, teaching, construction trade subjects curriculum

## INTRODUCTION

Through the ages, human beings have engaged in the training of younger generation to prepare and equip them with skills for productive living. The acquisition of the right type of attitudes, values and skills is a desirable experience for individual's

continued existence in the society in which they live. It is clear that as human beings grow up, the attitudes, values and skills acquired become their guide through life. Education according to Adeyemi and Adu (2010) is widely accepted to be an effective instrument for bringing about these attitudes, values and skills, which are highly needed in the society for human capacity building and socio-economic change.

Several definitions of education have been given by experts. Akinseinde (1998) defined education as the process of imparting and acquiring knowledge through teaching and learning while Lawal (2003) viewed education as an instrument for acquisition of appropriate skills, abilities and competencies both mental and physical as equipment for individuals to live in and contribute to the development of his society.

Nigeria having realized the effectiveness of education as a powerful instrument for national progress and development reviewed her educational philosophy and methodology to match the ideals and challenges of changing economic and social structure of modern society as seen in the National Policy on Education 1981, reviewed 2004 and 2013. Consequently, Nigeria changed her secondary education system to encompass diversified curriculum that integrates academic with technical and vocational subjects intended to empower the individuals for self-employment or higher studies in technology.

Technical and vocational education as defined in the National Policy on Education, FRN (2013) is that aspect of education process involving in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, knowledge and attitudes necessary for entry into occupation in various sectors of the economic and social life. The goals of technical education as outlined in the National Policy on Education include: to provide trained manpower in applied science, technology and business particularly at the craft, advanced craft and technical level and to give training and impart the necessary skills to the individual for self-reliance economically (FRN, 2013).The most significant aspect of the National Policy on Education as noted by Dike (2009) is the new focus it gives to Nigerian educational system, the need for industrialization of the

nation in which technical and vocational education plays a crucial role and the realization to change to science, technology oriented education system which prepares individual to be self-reliant and useful to the society. According to Aina (2009), it is an education for skill building and skill acquisition, which ultimately becomes a means of livelihood, Obanya (2007) viewed technical and vocational education as part of integral development of the three Hs – the head, the heart and the hands which must not be neglected, as doing so will amount to a denial of an individual's personality development. The United Nations Educational Scientific and Cultural Organization (UNESCO, 2010) noted that revitalizing vocational and technical education is among the ways to improve economic opportunities for the youth.

The 6-3-3-4 system of education in which technical education holds a prominent place is aimed essentially at equipping students with skills and competencies that will make them not only employable in industries, but also to be self-employed. Part of the efforts toward achieving these aims is the introduction of pre-vocational courses like Basic Technology, Agriculture, Business Studies, Home Economics, Computer Education, Fine Arts and Music at the Junior Secondary school (JSS) level and vocational courses like Agriculture, Applied Electricity, Book Keeping and Accounting, Building Construction, Auto Mechanics, Electronics, Clothing and Textiles and Food and Nutrition at the Senior Secondary school (SSS) level (FRN, 2010). However, the curriculum structure for senior secondary school education in Nigeria has been reviewed; the new structure which came into effect in September, 2011 has been diversified and consists of core subjects, electives and trade/entrepreneurship studies. The electives are categorized into four distinct fields of study namely; Senior Secondary Education (Science), Senior Secondary Education (Humanities), Senior Secondary Education (Business), Senior Secondary Education (Technology).

At the senior secondary school level, the new curriculum highlighted the criteria for selection of subjects. The compulsory subjects which every student in the school must offer are English Language, General Mathematics, Civic Education

and Trade/Entrepreneurship Studies. FRN (2010) stated further that students are to choose four or five subjects from their field of specialization in any of Humanities, Science, Technology and Business Studies making a total of eight or nine subjects. Students are also to choose their compulsory trade/entrepreneurship subject from thirty-eight trade subjects including Blocklaying, Bricklaying and concreting, Painting and decorating, Plumbing and pipefitting, Machine wood working, Carpentry and Joinery, Furniture making and Upholstery, which make up the construction trade subjects which is the focus of this study. Nigeria's desire for technological development led to the introduction of the Trade/Entrepreneurship subjects in the senior secondary school curriculum with the hope that students having successfully passed through the senior secondary education, should have acquired the skills in a specific trade to make them employable in industries and also to enable them create jobs and generate wealth.

The term curriculum has been used with quite different meanings from its inception. This is owing to divided perceptions of stakeholders and scholars (Shao-Wen Su, 2012). It has been defined as, a body of knowledge to be transmitted, a product, a process, and a praxis (Smith, 2000). Foshay in Bloom (2006) defined curriculum as, all the experiences a learner has under the guidance of the school. Curriculum, to Marsh & Willis (2003), is the totality of learning experiences provided to students so that they can attain general skills and knowledge at a variety of learning sites. Curriculum, as defined by Barrow & Milburn, in Shao-Wen (2012), is an official written programme of study published by ministries or departments of education, local authorities or boards of education, and commercial firms or teams of educational specialists working on specially funded projects. Trade Subjects Curriculum (TSC), in this study, refers to the document, plan or blue print used as instructional guide designed by Nigerian Educational Research and Development Council (NERDC) in collaboration with the Federal Ministry of Education (FME); for teaching and training senior secondary school studentsthe trade subjects in Nigerian formal secondary school system for skill acquisition. The components of the curriculumincludes: the subject, aim and objectives,

content, teaching strategies, instructional facilities, and evaluation; as well as the physical and psychological dimension of the experience by which instrument, the schools seek to translate the hopes of the society in which they function into reality (Offorma, 2006). Ayeni stated that a poorly implemented curriculum will produce half-baked graduates. Effective curriculum implementation, therefore, becomes absolutely necessary for the production of qualified graduates.

The term curriculum implementation has been defined in different ways by different scholars. Garba (2004) viewed curriculum implementation as the process of putting the curriculum into work for the achievement of the goals for which the curriculum is designed. Okebukola (2004) described it as, the translation of the objectives of the curriculum from paper to practice. Ivowi (2004) sees curriculum implementation as the translation of theory into practice, or into action. Onyeachu (2008) broadly defined curriculum implementation as, the process of putting all that have been planned as a Curriculum document into practice in the classroom/workshop through the combined effort of the teachers, learners, school administrators, parents in interaction with physical facilities, instructional materials, psychological and social environment. In this study, curriculum implementation is the process of putting the planned TSC document into practice in the classroom/workshop through the combined effort of the teachers/instructors, students, administrators, parents in interaction with the physical facilities, instructional materials, psychological and social environment for the realisation of the aim and objectives of the curriculum.

There are some factors that influence curriculum implementation. Eimuhi (2014) identify them to include: instructional supervision, the teacher, pedagogy, the learner, resource materials and facilities. The most important person in the curriculum implementation process is the teacher. With their knowledge, experience and competencies, teachers are central to any curriculum improvement effort. Teachers are the most knowledgeable about the practice of teaching and are responsible for introducing the curriculum in the classroom. Since implementation takes place through the interaction of the learner and the

planned learning opportunities, the role and influence of the teacher in the process is indisputable. If the teacher is to be able to translate curriculum intentions into reality, it is imperative that the teacher understand the curriculum document or syllabus well in order to implement it effectively. Fafunwa (1991) notedthat a well-trained teaching staff is the first vital step in any attempt to train skilled manpower and that should be given priority. FRN (2013) stipulated that for vocational and technical subjects where practicals are involved, the teacher-students ratio shall be kept at 1:20 in order to foster good participation of students in practical work, but up till now in most secondary schools, the above teacher-students ratio remains a mirage due to shortage of qualified technical teachers, this view is supported by Oladimeji cited in Idalu (2007) who lamented that as plausible as the introduction of Basic technology in the junior secondary school seems to be, there are bottlenecks which hinder its effectiveness in our educational system. One of such bottlenecks is lack of qualified manpower for effective implementation of the programme as designed.

The purpose of Trade/Entrepreneurship options in secondary schools is not likely to succeed using the "chalk and talk" approach alone except through the effective use of the needed resources to bring the students in contact with the content of the school curriculum and learning activities. According to Akpochafo (2003), Educational resources encompasses all persons and things capable of conveying information, values, processes, experiences and techniques that can be used to actively engage the learner in the learning process, while in the words of Adeogun (2008), educational resources refers to the available facilities that can be used to achieve educational goals and objectives. They include physical, human, material and financial resources. The most important of all the resources mentioned is the human resource, otherwise known as Human capital. This is because all the other resources not only revolve around it, but are all controlled by it. The human capital, also known as the manpower, determines to a very great extent, the effective and/or ineffective implementation of the curriculum, regardless of all other resources combined. Manpower, with respect to the implementation of the TSC

include: t0he teachers, technologists, technicians, artisans and workshop/laboratory attendants.

Teachers, technologists, technicians, artisans and Workshop/laboratory assistants constitute the primary manpower required in the implementation of the TSC. The most important person in the curriculum implementation process is the teacher; whose role has already been stated. canton.edu/csoet/elec/technician. html (n.d.) posited that technologists often work with engineers in a wide variety of projects by applying basic engineering principles and technical skills. According to canton.edu/csoet/elec/technician. html, the work of technologists is usually focused on the portion of the technological spectrum closest to product improvement, manufacturing, construction, and engineering operational functions; while technicians are most often employed in service jobs. Their work typically involves equipment installation, troubleshooting and repair, testing and measuring, maintenance and adjustment, manufacturing, or operation. An artisan is someone whose job requires skill with their hands; he/she is a skilled worker or craftsman. A workshop/laboratory attendant, under immediate supervision, performs routine and semiskilled work in the collection, preparation and distribution of field samples, maintenance of laboratory equipment and glassware; performs related work as required.

The availability and effective utilization of the above manpower,to a great extent, determines the success and/or failure of the realization of the aims and objectives of the Trade/Entrepreneurship subjects in the senior secondary schools. It therefore behooves the researcher to investigatethe manpower available for teaching construction trade subjects curriculum in senior secondary schools in the Federal Capital Territory, Abuja.

## STATEMENT OF THE PROBLEM

Nigeria's desire for technological development led to the introduction of the Trade/Entrepreneurship subjects in the senior secondary school curriculum with the hope that students having successfully passed through the senior secondary education, should have acquired the skills in a specific trade to make them

employable in industries and also to enable them create jobs and generate wealth. However, the purpose of the Trade/Entrepreneurship subjects in secondary schools will not succeed using the "chalk and talk" approach alone except through the effective use of the needed resources to bring the students in contact with the content of the school curriculum and learning activities for skill acquisition. Qualified and sufficient manpower is the prime resource required for effective implementation of the curriculum. Manpower, with respect to the implementation of the TSC include: teachers, technologists, technicians, artisans and workshop/laboratory attendants. Consequently, the availability and effective utilization of qualified manpower, to a great extent, determines the ability and/or inability of the realization of the aims and objectives of the TSC in the secondary schools. Unfortunately, the major bottleneck to effective implementation of the TSC is lack of qualified and sufficient manpower for effective implementation of the programme as designed. Therefore, the problem of this study was to investigatethe manpower available for teaching construction trade subjects curriculum in senior secondary schools in the Federal Capital Territory, Abuja.

## Purpose of the Study

The purpose of the study was to determine the manpower available for teaching construction trade subjects in the senior secondary schools in the Federal Capital Territory, Abuja.

## Methodology

The study adopted descriptive survey design. The study was carried out in Federal Capital Territory (FCT) Abuja. The Federal Capital Territory is made up of six Area Councils namely, Abaji Area Council, Abuja Municipal Area Council, Bwari Area Council, Gwagwalada Area Council, Kwali Area Council and Kuje Area Council. The study covered all the senior secondary schools approved by the government in Federal Capital Territory where construction trade subjects are offered.The population for this study is 33551 which comprises 153 administrators (50 Principals, 53 VP Academics, 50 Heads of Departments of Vocational and Technical Education) 64 construction trade teachers, and 33,334 senior secondary school students drawn from 50 secondary schools within the

FCT, Abuja, where construction trade subjects are offered. Administrators were used because they are in the position to tell how the construction trade subjects are funded. Teachers were used because they are the implementer of the curriculum and students were used because they are the direct beneficiaries of the construction trade subjects curriculum. Taro Yamane's equation was used to determine the sample size of 561 at 0.05 level of significance. Taro Yamane's equation was used because the population is heterogeneous.

A multistage sampling technique was used. The first stage was the use of purposive sampling technique to select 50 senior secondary schools. The second stage was the use of Taro Yamane's formula to select 111 administrators, 55 teachers of trade subjects and 395 senior secondary school students. This last stage of sampling technique was used because the population is divided into strata of administrators, teachers and students. A Checklist of personnel as specified by the Nigerian Educational Research and Development Council (NERDC, 2010) was used to collect data on research question. The checklist was answered based on the extent of adequacy or inadequacy.

**Method of Data Collection**

The researcher with the aid of two research assistants, both graduates visited the schools offering construction trade subjects in Federal Capital Territory, Abuja to take inventory of the personnel available for the implementation of construction trade subjects indicating their condition so as to answer research question.

**Method of Data Analysis**

Descriptive statistics of frequency and percentage was used to answer the research question. Items with percentage score of 50% and above were regarded as 'adequate' and those with percentage score of 49% and below were considered inadequate for research question.

## RESULT

**Research Question**

What is the manpower available for teaching construction trade subjects in secondary schools in Abuja?

Data to address research question one is presented in Table 1 as shown below:

**Table1: Frequency and Percentage of Manpower Available for Teaching Construction Trade Subjects in Secondary Schools**

| S/N | TRADE AREA | No. Required in a Sec. Sch. As specified by NERDC | No. Required in the 50 Sec. Sch. Selected | No. Available in the 50 Sec. Sch. Surveyed | Percentage (%) | Remarks |
|---|---|---|---|---|---|---|
| **1.** | **Block laying, Bricklaying and Concreting** | | | | | |
| | Teacher | 3 | 150 | 57 | 38% | Inadequate |
| | Technologist | 2 | 100 | 50 | 50% | Adequate |
| | Workshop Attendant | 1 | 50 | 50 | 100% | Adequate |
| **2.** | **Painting and Decoration** | | | | | |
| | Teacher | 3 | 150 | 23 | 15% | Inadequate |
| | Technologist | 2 | 100 | 12 | 50% | Adequate |
| | Workshop Attendant | 1 | 50 | 10 | 20% | Inadequate |
| **3.** | **Plumbing and Pipe fitting** | | | | | |
| | Teacher | 3 | 150 | 24 | 16% | Inadequate |
| | Technologist | 1 | 50 | 6 | 12% | Inadequate |
| | Technician | 2 | 100 | 34 | 34% | Inadequate |
| | Workshop Attendant | 1 | 50 | 5 | 10% | Inadequate |
| **4.** | **Machine Woodworking** | | | | | |
| | Teacher | 3 | 150 | 5 | 3% | Inadequate |
| | Technologist | 1 | 50 | 3 | 6% | Inadequate |
| | Technician | 2 | 100 | 6 | 6% | Inadequate |
| | Workshop Attendant | 1 | 50 | 4 | 8% | Inadequate |
| **5.** | **Carpentry and Joinery** | | | | | |
| | Teachers | 3 | 150 | 15 | 10% | Inadequate |
| | Technologists | 1 | 50 | 6 | 12% | Inadequate |
| | Artisans | 2 | 100 | 10 | 10% | Inadequate |
| | Workshop Attendants | 1 | 50 | 12 | 24% | Inadequate |
| **6.** | **Furniture Making** | | | | | |
| | Teachers | 3 | 150 | 9 | 6% | Inadequate |
| | Technologists | 1 | 50 | 4 | 8% | Inadequate |
| | Artisans | 2 | 100 | 6 | 6% | Inadequate |
| | Workshop Attendants | 1 | 50 | 6 | 12% | Inadequate |
| **7.** | **Upholstery** | | | | | |
| | Teachers | 3 | 150 | 4 | 3% | Inadequate |
| | Technologists | 1 | 50 | 3 | 6% | Inadequate |
| | Artisans | 2 | 100 | 4 | 4% | Inadequate |
| | Workshop Attendants | 1 | 50 | 10 | 20% | Inadequate |

Result of data presented in Table 1 revealed that construction trade subject teachers in secondary schools are inadequate for brick/block

laying and concreting (38%), plumbing and pipe fitting (16%), machine woodworking (3%), carpentry and joinery (10%), furniture making (6%) and upholstery (3%). However, only technologists, workshop attendants for brick/block laying and technologists for painting and decoration are adequate with percentage score of 50% and 50% respectively.

## DISCUSSION OF THE FINDINGS

Findings of the study revealed that manpower available for the teaching and learning of construction trade subjects in senior secondary schools are inadequate for the various trade areas. For instance, the percentage of available teachers for brick/block laying and concreting is 38% while that of technologist and workshop attendant is 50% and 100% respectively. This same situation also apply to the other construction trade subject areas such as painting and decoration, plumbing and pipe fitting, machine woodworking and carpentry and joinery. Other areas include furniture making and upholstery. Only 15% of teachers for painting and decoration are available, 16% for plumbing and pipe fitting, 3% for machine woodworking, 10% for carpentry and joinery, 6% for furniture making and 3% for upholstery. These finding are in line with that of Puyate (2008) which revealed that one of the factors hindering the effective and efficient implementation of vocational and technical education curriculum is the lack of available suitable manpower. The implementers of any educational programmes are the teachers. Teachers and other categories of workers help drive the attainment of curriculum goals and objectives (Ochoga, 2005). This assertion is in agreement with Prosser and Quigley (1949) who posited that one of the cardinal principles for the establishment of any vocational and technical education programme is the sufficiency of relevant manpower in quality and quantity.

## IMPLICATIONS OF THE FINDINGS

The implication of the findings of the study is that the inadequacy of manpower for the teaching of construction trade subjects in senior secondary schools is that students will not acquire the needed vocational skills and knowledge in these subject areas. Therefore, the aims and goals behind the establishment of the entrepreneurial/trade subject

curriculum will be defeated Ololube (2006).

## RECOMMENDATION

Based on the findings of the study, it was recommended that government, proprietors of schools and the PTA should often recruit additional teachers and other relevant manpower for the implementation of construction trade subject in secondary schools..

## CONCLUSION

Based on the findings of this study, it was concluded that, all hands must be on deck by all STC implementation stakeholders to ensure that, not only qualified, but also sufficient manpower is provided for effective implementation of the TSC for the realization of the aims and objectives of the programme.

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