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# TOWARDS ENHANCING ENTREPRENEURIAL SKILLS NEEDED BY BUILDING TECHNOLOGY EDUCATION STUDENTS TO BE SELF-RELIANT ECONOMICALLY AFTER GRADUATION

**By**

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## Abstract

*This paper vigorously examined the entrepreneurial prospects open to the graduates of the Building Technology Education. It most essentially appraised the importance of entrepreneurship education as the engine drive that stimulates the passion and zeal for graduates of this discipline to engage in business venture for self-reliance, job creation and wealth creation. The paper highlighted the various building construction craft skills that are available in building technology education with a view of identifying career opportunities for the graduates in this area of education. The paper upheld that the inclusion of entrepreneurship education into the building technology education curriculum will reduce the rate of dependence on government for job, instill in the students the right entrepreneurial mindset, the ability to be innovative and be able to create job of their chosen career. The paper stressed emphatically clear that only a revamped building technology education will expose the graduates to the numerous trades that are available in this discipline. The paper also identified some of the challenges that stifled effective entrepreneurial skill development in building technology education via technical and vocational Education (TVE). Some recommendations were made that will enhance entrepreneurial prospects in building technology education.*

**Key words:** Building Technology Education, Entrepreneurial prospects, construction craft-skills, self- reliance, job creation and wealth creation

## Introduction

Nigeria is endowed with abundant human and natural resources by far more than any other Sub-Saharan African country and has the great economic potential to become a significant player in the global economy. However, this status has not been harnessed or utilized to benefit vast majority of Nigerians (Nwachukwu, Obi and Ugwoegbulem, 2018). The oil boom of 1970s led to the transmogrification of Nigerian's economy from agro-based economy to mono-based petroleum-driven economy. The incidental lurch towards statist economic model is particularly worrisome because virtually all other sectors of economy except the oil and gas sector are nearly extinct or latent with minimal or no contribution to the economic growth and development of Nigeria. The country has witnessed severe economic recessions at various times resulting in numerous socio-economic challenges and problems of various magnitude. The recession has compelled many Nigerians to remain under the burden of poverty, inequality, graduate unemployment and youth restiveness. Oil and Gas Industry which has become the driving force of the Nigerian economy is an expatriate's dominated business by its very conception, pattern, initiation and operation. Nigeria's economy has continued to be dependent on oil as the only major source of foreign exchange earnings (Alashe, 2014). The structure of the economy remains highly import dependent, consumption driven and undiversified (FRN, 2017). Crude oil accounts for more than95 percent of exports and foreign exchange earnings, while the manufacturing sector accounts for less than one percent of the total exports.

Nigerian economy has undergone fundamental structural changes resulting in structural shifts which have however not resulted in any significant sustainable economic growth and development to ensure employment opportunity for youths. Unemployment among graduates, thus, is particularly one of the most pressing socio-economic problems confronting the nation today. The latest report from the National Bureau of Statistics (2020) painted a gloomy picture of the state of unemployment in Nigeria. According to this report, Nigeria's unemployment rate rose to 27.1 percent in the second quarter of 2020, the highest on the record. It was the first time since 2018 that Nigeria's National Bureau of Statistics published such starring figure. It compares to 23.1 percent seen back in the third quarter of 2018. The structure of Nigerian economy has clearly shown that the white collar jobs are no longer available to meet or accommodate the employment needs of teeming

number of able-bodied Nigerian youths. The Unemployment rate will continue to rise with the emerging trend of globalization and sophistication in technology. The cause of increased rate of unemployment may not be unconnected to lack of functional education that promotes practical training that exposes the virtue of self-reliance (Uzo, Okeke and Ugwuanyi, 2018). With the saturation of opportunities for paid employment, the possession of self-reliant skills would surely enable some of our unemployed graduates to secure their future and be relevant to the society (Nwachukwu, Obi and Ugwoegbulem, 2018). The changing economies in many developing nations have forced governments and educators to place a high priority on entrepreneurial skill training and development (Omeje, 2013). Nigeria has adopted several entrepreneurship development programmes some of which include: National Directorate of Employment (NDE), National Poverty Eradication Programme (NAPEP), National Economic and Empowerment Development Scheme (NEEDS), National Centre for Technology Management (NACETEM), Small and Medium Enterprises Development Agencies of Nigeria (SMEDAN), Small and Medium Enterprise (SME) and others (Igwe, Puyate, Onoh and Eze, 2012). These governments' reforms as spelt out in these programmes focused on poverty reduction, wealth creation and employment generation. It is in a bid to squarely address the problem of graduates' unemployment that the federal government of Nigeria introduced entrepreneurial education in institutions of higher learning. This took effect from the 2007/2008 academic session to equip the youths with the necessary entrepreneurial skills to be self-sufficient and self-reliant (Izedonmi and Okafor, 2010). The major thrust of entrepreneurship education is aimed at developing in students those skills, competencies, understanding and attributes that will equip them to be innovative and to identify, create, initiate and successfully manage (personal/ community) business with a view to contributing to national and personal development.

The Technical and Vocational Education and Training (TVET) has been in the forefront of the type of education patterned to train students in certain occupations required to address the issue of self-reliance, job creation and youth employment. This is the mandate of the Technical, Vocational Education and Training. Despite the infusion of entrepreneurship education into the curricular of tertiary institutions in Nigeria, the achievement of the goals and objective of seeking to relate education to employment, job creation and self-reliance has remained elusive (Omeje, 2013). According to Obi (2010)

the potential rudimental competences are presently lacking in vocational training and education. The entrepreneurial skills/ spirits and attitude development in such trade like building construction, woodwork, electrical, electronics, metal work, automobile etc are lacking in the entrepreneurship education as presently mounted in tertiary institutions. Obi (2010) also opined that the ugly picture painted by mass unemployment in Nigeria demands deliberate and goal oriented approach to the entrepreneurship education as different from one presently established in tertiary institution which is lopsided lacks practical content and therefore impotent. It is lopsided because according to him it is only taught in the class room which is devoid of real world of work experiences. He therefore called for a model of entrepreneurial skill development among Nigerian youths in tertiary institutions where the various departments should have consultancy outfits or service workshops where students in their departments will acquire, develop and build the desirable skills before graduation. It should stimulate the entrepreneurial skills required for job creation, self-reliance and wealth creation.

This paper, in effect, is undertaken to identify, and enhance the relevant entrepreneurial prospects in Building Technology Education for self–reliance, job creation and wealth creation.

**Building Technology Education:** Building Technology Education is one of the courses in Technology Education. It is one of the vocational and technical education courses which is the application of engineering principles and technology to design and construction of buildings. Building technology involves the technical processes, methods, techniques, skills, tools and raw materials used in constructing and maintenance of buildings. It is a component of architecture and building. Building Technology Education is a competency based program which involves marked proficiency on skills and knowledge which afford the recipient students the opportunity to earn a living. It is a type of technology education that helps to identify potential in individuals, develop it to the degree at which the individual skills, knowledge and attitude required for self-employment in a particular occupation, group of related occupations or to function in economic activity (Igwe, 2008).Building Technology as a course is being taught at Technical Colleges, Federal Colleges of Education (Technology), Polytechnics, Monotechnics and Universities. The

major thrust of Building Technology Education as a discipline is to impart construction craft's skills needed in building design and construction.

Vocational Education is any form of Education whose primary purpose is to prepare persons for employments in recognized occupation. The committee on research and publication of the American Vocational Association (1954) as cited by Effieyen, Nnadi, Patrick and Ntui, (2013), defines vocational education as "education designed to develop skills, abilities, understandings, attitudes, work habits and appreciation, encompassing knowledge and information needed by workers to enter and make progress in employment on a useful and productive basis". According to Olaitan (1991) as cited in Agbongiasede (2007), vocational education is a kind of educational or training that equips the leaner with saleable or entrepreneurial skills. It is a type of education designed for experts in the field of education that is technology – oriented to train and prepare individuals to acquire practical skills, basic and scientific knowledge and attitudes required as craftsmen and technicians at sub-professional level.

The national policy of education (NPE, 2013) clearly reinstated the objectives of vocational education; one of which is to provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels; in craftsmanship. Vocational education by its nature teaches procedural knowledge for acquiring a skill or trade in contrast to general education that concentrates on research, theory and abstract knowledge. This type of education assures that a choice or pursuit of occupation has been made and that appropriate training is needed to enable the individual to enter or advance in his chosen occupation and also be self-reliant.

Vocational Education is particularly important to the needs of Nigeria towards advancing technology, occupational mobility and improving entrepreneurial skills (Effieyen et al 2013). It provides occupational skills (entrepreneurial skills) that are engine drive for self-reliance. Vocational educational promotes establishment of small and medium scale enterprises necessary for wealth creation and poverty reduction. Vocational education is unarguably the key factor in promoting entrepreneurial skills via appropriate implementation of vocational education curriculum and programmes. Building technology education is a vocational education programme.

The importance of a functional building technology education in entrepreneurship is of no small measure as this programmes trains and prepares individuals for self-reliance and wealth creation.

## Entrepreneurship

No economic venture survives without the initiative, resourcefulness, drive, hard work, innovation and optimism of entrepreneur. Creativity and innovation are driving force of successful business or enterprise. Entrepreneurship has been defined in various ways by different scholars from disciplines (Onyekwena 2007). All these definitions narrowed to the same event and activity of creating, starting and running a business. Hisrich, Peters and Shepherd (2008) defined entrepreneurship as the process of creating something new with value by devoting the necessary time and effort assuming the accompanied financial risks and receiving the resulting rewards for monetary an personal satisfaction and independence.

Entrepreneurship is the willingness and ability of an individual to seek out an investment opportunity, establish an enterprise and run it successfully (Onyekwena 2007). It is that ability and willingness of an individual to initiate control and direct the process of production of goods and bears the attendant risks. Badaru (1997) as cited in Effieyen et al 2013) stated that entrepreneurship involves taking reasonable risks in investing money, human and material resources and application of one's creativity and ingenuity to begin a business. Entrepreneurship is a dynamic process of vision, change and creation (Okoye, 2019). It involves application of energy and passion towards the creation and implementation of new ideas and creative solutions according to Osuala (1999) as cited by Lazear (2005), entrepreneurship is the process of bringing together creative and innovative ideas and combining them with management and organizational skills in order to combine people, money and resources to meet an identified need and thereby creating wealth. Entrepreneurship has to do with a system of ideas and values that are not ordinarily treated as part of the curriculum. It is the process of using private initiative to transform a business concept to a new venture or to grow and diversify an existing venture or enterprise with high growth potential (Mkpa, 2014; Ugwuoke and Abidde, 2014). Entrepreneurship is a vital factor in the process of wealth creation via economic development.

## Entrepreneurship Education

Entrepreneurship education is an education which is prepared to equip recipients the necessary skills and inculcate competencies and values which are essential in business opportunity (Brown 2000). Entrepreneurship education seeks to provide students with the knowledge skills and motivation to encourage entrepreneurship success in a wide variety of settings. Entrepreneurial education is focused on inculcating appropriate skills and knowledge to youths with the passion and multiple skills in order to make them self-reliant in their future endeavour. Entrepreneurship education leads to the acquisition of entrepreneurial skills for efficient and effective living; it gives the youths more opportunities to exercise creative freedom, higher self-esteem and a greater sense of control over their own lives (Mbanefo, Obiajulu and Eboka, 2015). Entrepreneurship education is the design instrument to create enterprise culture. The recipient of entrepreneurship education will develop entrepreneurial skills. Entrepreneurial skills are business skills, which an individual acquires personally to function effectively in business as an entrepreneur and be self-reliant (Umuadi,2014). The skills consist of effective utilization of ideas, information and facts that help a learner develop competences, services or become productive employees of organizations.

## Entreprenuer

The word “entrepreneur” means to “undertake” in business context. An entrepreneur is one who undertakes the risk of organizing and managing a business. An entrepreneur can also be seen as a person who starts, organizes and manages any enterprise, especially a business, usually with a considerable initiative and risks; running a small business with all the risk and reward of any given business process. Anozie (2006) defined entrepreneur as one who organizes the other factors of production such as land, labour and capital, where he/she has the initiative, organizational and administrative ability. Entrepreneurs tend to be good at perceiving new business opportunities and they often have positive biases in their perception. An entrepreneur must be someone who always searches for change, responds to it and exploits it as an opportunity. He/she can be seen as creative, innovative and opportunity focused individual with an enriched entrepreneurial skills to enter into a business venture for self-employment and self-reliance. Paul (2005) as quoted in Effieyen et al 2013) stated that an entrepreneur can be said to be a person that is determine to:

- ❖ Operate alone in business
- ❖ Combine other factors of production
- ❖ Take the risk of losing or succeeding in business
- ❖ Be self-employed instead of being in paid job
- ❖ Believe in him and prefers to finance his business alone.
- ❖ Be creative and innovative and
- ❖ Identify new business opportunities.

An entrepreneur is a man or woman of action, an individual or a person who undertakes self-directed initiatives and assumes personal risks in creating and operating a profit-oriented business (Udu, 2016)

**The Building Technology Education Curriculum and Entrepreneurial Skills**

The curriculum is the guiding framework for school activities. The Building technology education curriculum in Technical and Vocational Education (TVE) is highly enriched with totality of planned experiences, knowledge, skills and activities which a prospective student must pass through under the guidance or auspices of the school. Building Technology Education Curriculum is a properly designed, well-crafted, organized, planned and executed programme that helps to develop construction craft skills that are used to improve and produce craftsmen who will actively participate in the nation building. The emphasis on this curriculum is on skill acquisition which helps to develop intrinsic potentials in individuals in the pursuit of sustainable economic and industrial development (Effieyen et al, 2013; Anaele and Okoro, 2014 and Adediji, Ojelabi & Oyeipo (2017). The curriculum framework is so structured, effective and dynamic in nature to accommodate several utility purposes which prepares the youth for the active participation in the productive activities in this fast changing society. The building construction craft-skills acquisition framework clearly shows that building technology curriculum is highly enriched with basic construction craft-skills which will increase self-employment, increase business opportunities and increase employment of graduates. According to Effieyen et al (2013), the building technology education curriculum framework borders on how technical and vocational education can be used to improve the quality of life of the individual and society by equipping them with relevant scientific and technological skills, attitudes and values in building technology for productive and

effective life. The aim of the building technology curriculum is to provide technology and vocational skills necessary for industrial development in order to produce skilled young men and women who will be enterprising for economic development. Its major concern is on economic stability and sustainability through human effort.

The entrepreneurial spirit that leads to self-reliance is heavily dependent on skill acquisition training which can be enhanced through entrepreneurship education. It is one thing to be sufficiently anchored with skills and amore herculean task to market the acquired skills thereby profiting the individual and society. One can possess the technical skills and yet do not have the entrepreneurial skills that will catapult a trained person in building technology to initiate or create a business venture. Entrepreneurial skills can be learnt. Many graduates acquired technical skills in their chosen careers but were denied access to self-reliance and wealth creation due to sheer ignorance. Entrepreneurship education will catapult a graduate of building technology into creating self-employment and wealth creation in the absence of paid jobs. That is the meeting point of building technology and entrepreneurship. Technology provides the manipulative technical skills while entrepreneurship transforms it to saleable services to humanity through industrial and educational sectors thereby yielding profit to the entrepreneur and increased productivity and economic growth to the nation.

Thus the merging of entrepreneurial skill acquisition programmes with the conventional education could give an individual an advantage in business and greatly influence entrepreneurship decisions. Therefore, incorporating skill development targeted at tertiary school curriculum in the educational area of the student would lead to enterprise, innovation and creation. Ogundele, Feyisetan and Shaaba (2014) reasoned that skill acquisition will provide lifelong opportunity for self-development, national development and nation building. A person can be trained on how to organize and manage a business. Ogalanya (1997) as cited by Odu (2012) identified the following as some of the entrepreneurial skills needed for self-reliance and wealth creation. These are conceptual/planning skills, human relation skills, supervisory/guidance skills, investigative/problem solving skill and risk-taking skill. People who are likely to excel in entrepreneurship are those who could assume reasonable level of risk, show self-confidence, work hard, set goals, are accountable and innovative, must be able to anticipate, forecast what the customer will want as well as possible changing economic

conditions. There is thus the need to infuse these entrepreneurial skills into building technology curriculum. It is will promote and improve the economy. The importance of functional building technology education in entrepreneurship is of no small measure as this programme trains and prepares individuals in many areas of skills. Hence the inclusion of entrepreneurial skills into building education programme will reduce the rate of dependence on government for job, instill in the students the right entrepreneurial mindset, the ability to be innovative and be able to create job of their chosen career.

**Entrepreneurial Prospects in Building Technology Education**

Developing entrepreneurial skills in building technology is essential for graduates' self-reliance, job creation and wealth creation. The field of building technology education furnishes a variety of building construction craft skills which will enable graduates to set-up small/medium scaled business ventures. These entrepreneurship prospects are

- Brick/Block Molding, Laying and Concreting: These are building technology skills which entrepreneurial skills can promote. Two entrepreneurial skills for establishment of small/medium scaled business can be created form this trade. Brick/Block Molding trade and Brick/Block Laying and Concreting trade. The building entrepreneur who engages in brick/block molding can set up a block moulding industry where various standard sizes of bricks and sand-crete blocks are manufactured for marketing. This business is very lucrative and has a high-turn rate provided it is established in a strategic area. The building technologist/builder who engages in brick/block laying and concreting trade has the professional opportunity of providing shelter for all categories of people in various communities. This is a very lucrative business. Shelter is one of the basic necessities of life and people will continue to build houses for habitation and other purposes irrespective of prevailing economic conditions. The successful entrepreneur in this area will create jobs.
- Draftsmanship: Drafting is a term that refers to the activity of creating technical drawings that communicate how something e.g. building is designed. It is the graphic language used by building industry to communicate ideas and plans from the creative design through production. (Brown 2000 and Effieyen et al 2013). Drafting is a highly developed science. The use of AUTOCAD and ARCHICAD is

now being used to enhance drafting. It is an effective means of meeting the challenges in an individual. Building Technology Curriculum Content emphasizes the process of drafting as an entrepreneurial skill acquisition. People are actually their living with drafting where they are into the skilled activity of drawing building plans

- Plumbing and Pipe Fitting: Building technology promotes entrepreneurial skills through innovation in Plumbing and Pipe-Fitting. Plumbing is the skilled art of providing a system for the supply of adequate water for domestic use and for removal of foul water through public sewer or private septic tank. Pipe- Fitting is the act of instilling pipes for water, steam, gas, oil, and chemical plants. Through the acquisition of vocational skills and entrepreneurial knowledge plumbing and pipe fitting can make a plumber to become a tradesman who shapes, cuts, bends, joins and installs water pipe.
- Painting and Decoration: Building Technology curriculum provides the avenue of practical skills in painting and decoration. The acquisition of technical skills and entrepreneurial skills will enable the painter to be gainfully involved in the painting and decoration of houses. Painting and decoration can be contracted out to an undertaker in this lucrative business.

❖ Tiling: Building technology curriculum also provides the trade of tiling. Tiling refers to the process of laying tiles on roofs, internal walls or other surfaces e.g. floors. Tiles are manufactured furnishing materials commonly used in the skilled operation of tiling. The procedural steps in tiling operation are included in building technology curriculum.

❖ Iron-bending: This is the skill of laying reinforcement in building construction. This trade involves selection, bending and arranging steel rods required for the casting of beams, columns, slabs and staircase. This skill is greatly emphasized in building technology curriculum. The entrepreneurial skill in this area can propel one to take up a job.

❖ Other entrepreneurial skills in building technology are carpentry, concrete rings and culverts, manufacture of fancy blocks, POP molding, casting and molding of

inter-lockng tiles, roofing, landscaping and site preparation concreting/plastering skill , marketing of building materials at construction sites etc.

**Problems facing entrepreneurship education**

According to Atakpa (2016) and Udu (2016), they are many problems that are militating against entrepreneurship education. These are:

- Inadequate funding
- Inadequate training facilities e.g. ill-equipped work-shops and laboratories
- Poor state of existing equipment and machines
- Poor implementation of government policies
- Poor quality time attached to practicals which will aid skill acquisition
- Poor relationship between institutions and industries
- Lack of diversification and implementation in entrepreneurship education curriculum content.
- Lack of qualified manpower in the field of entrepreneurship education
- Perception of undergraduate on entrepreneurial education as one of the necessary elective or general courses forced on them by the authority.

**Conclusion**

The building technology education curriculum is highly enriched with planned experiences, knowledge, appropriate skills and activities which a certified graduate of the discipline must pass through in order to achieve self-reliance and wealth creation. The building technology education furnishes a variety of building construction craft-skills such as draftsmanship, brick/block molding, brick/block laying and concreting, tiling, iron-bending, plumbing and pipe-fitting, painting and decoration, manufacture of fancy blocks, manufacture of inter-locking tiles, manufacture concrete rings and culverts, skilled art of selling building materials etc. It is possible for one to be sufficiently anchored with technical skills and yet do not possess entrepreneurial skill to enter business venture. Technology provides the manipulative technical skills while entrepreneurship transforms it to saleable services. Entrepreneurial education must stimulate the passion and zeal for the prospective graduates of this discipline to be in engage in any of the building trades to earn a living. The whole essence of entrepreneurship education being entrenched in building

technology education is to achieve self-reliance which is akin to self-help, self-sustainability, self-sufficiency and self-support. A functional building technology education must highly be enriched with entrepreneurship education.

**Recommendations**

1. Resource persons in the form of successful entrepreneurs in construction technology should always be invited to give lectures to the students on new dimensions in technological innovations
2. Seminars, workshop and conferences should be organized for building technology teachers on technological innovations in building construction
3. Building technology students should be taken to construction sites for skill development and exposures of technology innovations
4. The building technology education curriculum must be reviewed in order to attach enough time on practical or workshop training
5. The building workshop must be fully equipped with the necessary equipment, tools and machines

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