

# Information and Communication Technology for Entrepreneurship Skills Development in Woodwork Trade in Technical Schools in Nigeria

Bala Maik Mohammed\*, Kareem Bamidele Wahab, Abdullahi Mohammed Hassan, Franka Chinenye Nwankwo  
*Department of Industrial and Technology Education, School of Science and Technology Education, Federal University of Technology, Minna, Nigeria*  
\*Corresponding author

**Abstract** - The Information and Communication Technology (ICT) has continue to gain momentum within framework of potential efforts and strategies to boost all faucets of human endeavour among which is acquisition of skills in Entrepreneurship and Technical, Vocational Education and Training (TVET) for employment and job creation. Regrettably, many technical college graduate entrepreneurs do not achieve optimal success in their businesses due to poor skills in entrepreneurship, technical and computer soft skills required for success in the occupation. Consequently, woodwork entrepreneurs faced huge financial burden resulting from lack of stable income. This situation neither empowers them to manage their problems nor to provide the quality services needed for economic growth. This paper targeted the technical college students studying the woodwork trade in Nigeria. The paper identified needed skills in the areas of woodworking occupations, entrepreneurship and the use of computer in modern day woodworking. Strategies for integrating Information and Communication Technology skills with entrepreneurial and technical skills in woodworking needed for adjustment and successful entrepreneurship were discussed. The paper provides some important basic information that can inspire the technical college graduate entrepreneur into a successful entrepreneurship. The paper also made laudable recommendations.

**Key words:** Entrepreneurship, Woodwork, TVET, Soft-skills.

## I. INTRODUCTION

Entrepreneurial education as seen today is the framework of all business efforts. Nafukho (2002) stated that entrepreneurship education is a catalyst for business formation. Entrepreneurial education according to Nelson (2006), refers to competency based education capable of satisfying the needs of the individual and that of the economy. A quality TVET programme plays an essential role in promoting a country's economic growth, contributing to poverty reduction as well as ensuring the social and economic inclusion of marginalized communities (UNESCO 2013). However, acquiring relevant technical skills alone without appropriate entrepreneurial skills will not guaranty success in business. Fadele (2009) submitted that vocational entrepreneurship education should not only reflect specific skills but should also indicate in the learners the acquisition of general knowledge necessary to function within and outside

the organization. According to Igbo (2006) lack of basic financial, investment education and relevant technical skills is why educated persons often end up in retirement as poor and wretched fellows. A quality TVET programme plays an essential role in promoting a country's economic growth and contributing to poverty reduction as well as ensuring the social and economic inclusion of marginalized communities" (United Nations Education, Scientific and Cultural Organization, [UNESCO, 2013]). A wise Technical and Vocational Education and Training (TVET) teacher should help students to understand their options in a free market economy and encourage them to look for employment opportunities as an end to the mission of entrepreneurship education in the Technical and Vocational Education and Training (TVET) curriculum.

TVET programme must be flexible, adaptable, and life-long. TVET encompass all educational and/or instructional experience that might be formal or informal, pre-employment related, outside the job or on the job, in schools or in industries. The training directly enhances the skills, knowledge, attitudes, competencies and capabilities of individuals, required in undertaking gainful employment. The major challenge in the world today is to find ways of living and working sustainably, so that the reasonable needs and wants of people from all walks of life and in all countries can be satisfied without over-exploiting the natural resources upon which all life depends.

TVET takes on a complex and distinctive character with regard to sustainable industrial development and economic growth. This is because TVET produces and consumes resources; as well, affects attitudes towards sustainability held by future workers in all nations. During the process of TVET, the greater the exposure of trainees to sustainable concepts, practices and examples that reflect advanced technologies and materials, the more likely the desired workplace culture change will take place in the future. This current trend have made the Information and Communication Technology (ICT) a versatile tool for TVET and makes it necessary for individual to acquire computer skills (soft-skills). Moreover, the delivery of sustainable practices must be universal; that is, including not only pre-service TVET, but also on-the-job

learning and worker upgrading and retraining. ICT will continue to predominate in the future, in order to accommodate entrepreneurial, technological and job change for the success of any economic agenda.

The education industries are trying to harness the power of ICT mediated learning as part of a comprehensive strategy to reform TVET systems. TVET plays a vital role in human resources development of the country by producing skilled work force, enhancing industrial productivity and improving the quality of life. TVET delivery systems will therefore, if well-harnessed train workforce that can have requisite skills in ICT, entrepreneurship and technical woodworking that Nigeria needs to create wealth and emerge out of poverty.

#### A. Strategies for Sound Entrepreneurship Education.

The following strategies will assist in empowering the youth at the various levels of education to self-reliance:

i). *Creative Positive Attitude towards Entrepreneurship:* Encouraging the enterprise spirit in young people is a pit-condition to achieving progress in employment, growth competitiveness and innovation. The argument is that entrepreneurship should be a general attitude that can be useful and applied in all working activities and everyday life. When this becomes the focus of education, it will nurture in young people those personal attributes that form the basis of entrepreneurship such as creativity, spirit of initiatives, responsibility of confronting risks and independence.

ii). *Seminar and Workshop:* Seminar and workshops on entrepreneurship skills and attributes that are needed by entrepreneurs to succeed in business. Mere successful entrepreneurs and experts could be invited to deliver lectures on entrepreneurship to broaden students mind and develop entrepreneurial skills from their experiences.

iii). *Intern Challenge:* Through internship with a local entrepreneur, trainees get the opportunity to participate in a small business organization where they can practice the skills they have learned. Through this programme, entrepreneurial awareness among the trainees is promoted, and a stronger bridge between the educational system and the business world is further strengthened.

iv). *Use of Competent and Qualified Teachers:* The entrepreneurship education teacher employed should be competent and qualified in terms of qualification, practical skills (trade, ICT and entrepreneurial) and knowledge of business opportunities available after graduation. Okworie (2016) stated that qualified, competent, and dedicated teachers that have the interest of their students at heart be employed to ensure qualitative education at all levels.

v). *Teaching Strategies:* Teachers should use appropriate teaching methods (such as demonstration and field trip) that will build competence in students. The most significant aspects of competence, Le Boterf, (2010), is to know how to act, to want to act and to able to act. Maccario, (2012)

proposed ability levels (categories) applicable both to cognitive, psychomotor, affective and social domains as follows:

- perception skill: to pay attention, to integrate;
- reproduction skill: to specify, to transpose, to apply;
- production skill: to analyze, to adjust, to synthesize;
- self-management skill: to assess, evaluate, to self-control oneself.

vi). *Entrepreneurship village* where available can exposed students to the real workplace skills in the woodwork business.

vii). *Making use of Current ICT Initiatives:* Computer skills (soft skills) can aid Communication, critical thinking, customer relations, personal relations, sales, scheduling and supervision skills. With strong critical thinking skills, woodworkers can use logic not only to solve problems but also to foresee them before they occur. Critical thinking skills are required in design, layout, ordering, ornamental design, planning, project management, troubleshooting, problem solving, and time management.

viii). *Counseling:* The teacher needs to counsel the students on ICT and entrepreneurship education so that they will know the importance of entrepreneurs. These teachers will guide the students properly towards establishing their own business.

ix). *Visitation to Entrepreneurs in the Community:* On occasional basis, entrepreneurial education teachers should organize students' visits to local woodwork entrepreneurs; students to undertake case studies of successful businesses. Through such visitation, instructors can expose students to successful small business, provide opportunities for students to practice their skills, enable students to become familiar with entrepreneurial and management, and introduce students to contacts that they can draw upon to pursue their entrepreneurial dreams (Adapted from Adebusuyi, 2002).

#### B. The Guiding Principles for the Woodwork Entrepreneur.

i). *Innovation:* What appears to be one of the most difficult tasks for the woodwork entrepreneur is introducing something new to the market. Innovation is the central concept of entrepreneurship. This is so because one requires the understanding of the ever-changing environment in which he/she lives in order to develop strategies that will sustain business growth.

ii). *Maintain principles:* that would build trust, integrity and credibility of the management from the market. Investors and clients evaluate the management of an enterprise in terms of these qualities. Where these qualities are lacking they will have no confidence in the enterprise. This may lead to the collapse of any enterprise (Anyakoha, 2006).

iii). *Challenges of frustration and anxiety:* situations such as fear of sales, intense competition, lack of capital, ability for effective management, among others, could create

enthusiasm, frustration and anxiety for the beginning entrepreneur. Injecting some innovations in your approaches could provide a breakthrough in coping with the challenges of frustration and anxiety.

iv). *Investment proposal*: document the nature of the business, market target, and other factors of the enterprise including risks that are involved.

v). *Legal Issues*: seek and meet legal requirement put in place by relevant authorities to regulate such businesses.

vi). *Employ qualified labor*: consider the essential traits, qualifications, skills and knowledge needed for the job when recruiting workers.

vii). *Compete favourably in the market*: be aware of who your competitors are; their strength and weakness, and device strategies that will enable you to triumph.

viii). *Establish an efficient accounting system*: ensure that factors identified and costed in the business proposal are accounted for (Onu, 2006).

### C. Woodworking Occupations and Jobs.

The woodworking trade has several occupations that include wood machining, carpentry, Joinery, Upholstery, Finishing, pattern making, cabinet making, furniture making, boat building, vehicle body building, and interior finishing among others.

#### i) *What are the Woodwork Skills for Today's Workplace?*

New materials and technology can make a skill obsolete. It is important for one to understand what skills are required for what task(s) or job(s). Woodworkers utilize mechanical skills to work with a variety of tools and machines. These might include ladders, electronic levels, and rotary tools such as power saws. A woodworker must be comfortable operating, maintaining, and occasionally repairing these types of tools. The woodworker require a range of mechanical skills on power tools, hand tools, cabinet building, drilling, framing, furniture making, insulation, paneling, sanding, sawing, trimming and woodworking. Math skills are also required to make accurate measurement of materials that need to be cut and installed; to plan projects (reading blueprints and making measurements, as well as calculating costs to make sure the project comes in under budget). Arithmetic, algebra, geometry, calculus and statistics skills all are imperative soft skills that are required in budgeting and estimation, geometry, measuring and marking out work.

Woodworkers need skills in orientation to details in order to be very precise in their work. They have to measure distances and the size of items exactly when installing household items. An eye for detail helps with making measurements and fitting structures. Skills in the use of building codes, reading building plans, cutting, finishing, installation, quality control and reading blueprints are

required. Critical thinking is an important skill a woodworker also needs.

Woodworkers have to think critically to solve issues. When issues arise in a project, carpenters must be able to solve them. Often, projects run longer than expected. Other times errors occur, such as materials arriving late or in the wrong size. With strong critical thinking skills, carpenters can use logic not only to solve problems but also to foresee them before they occur. Critical thinking skills are required in design, layout, ordering, ornamental design, planning, project management, troubleshooting, problem solving, and time management. Woodworkers need strength to execute certain maneuvers. Physical strength is critical, since woodworkers lift and use heavy tools and materials, including lumber (which can often be quite heavy). Woodworkers also need physical stamina. Most jobs require standing, climbing, lifting objects, and/or bending down for long periods at a time. To achieve these, hand-eye coordination, maintenance, manual dexterity, nailing, painting and rigging skills are required.

Communication is a useful soft skill for woodworkers. They should be able to communicate effectively with clients, as well as listen carefully so that they can understand what the client requires. They also need to be able to explain complex technical issues to non- woodworkers in terms they will understand. A major challenge is making ICTs more accessible and adaptable to varying needs in different contexts (Kafka, 2013). Customers appreciate a woodworker that listens to their needs and explains things clearly and kindly. Skills needed include communications skills, computer skills, customer relations, personal relations, sales, scheduling and supervision. Other technical skills are required in appliance installation, building housing additions, building, house foundations, general construction, zoning laws, adherence to safety procedures, compliance, trade licensing, Microsoft office suite, mobile devices, precision, assembling, demolition, spirit level, chiseling, troubleshooting, flooring, refinishing, remodeling, renovation, repairs, restoration, rough to finish, wood quality, versatility, deck planning, deck construction and roofing.

#### D. *Entrepreneurship skills and TVET: The missing link.*

Entrepreneurship is the ability of an individual to seek out investment opportunities, establish and run an enterprise successfully. Entrepreneurship involves three important features, namely, organization of business, production in an exchange economy and the management of risks (Ihekoronye, 2006). This means the entrepreneur is someone who takes risk of investing money into a venture or business in a bid to make profit. According to Igbo (2006), an entrepreneur is a factor on fostering economic growth. The entrepreneur owns and runs a small business. The entrepreneur must possess some creative skills and competencies to succeed in business. Such skills include:

- i) Skills for managing money, men, materials, machines and methods (5Ms)

- ii) Marketing and sales skills, and
- iii) General business competencies.
- iv) Computer soft skills (ICT) for operations and timely decision making.

Despite challenges from the use of materials such as plastic, the wood trades continue to grow. In addition to other advantages it has over other materials, wood is a material that can be replenish. The woodwork trade command respect as one of the lucrative and fast growing businesses due to high demands on well-furnished homes. Businesses are established every year; a good number of them fail (Anyakoha, 2006). Failure may result from:

- i) Incompetence resulting in wrong decisions.
- ii) Lack of experience in managing the five Ms (men, money, material, machine and market)
- iii) Lack of knowledge of operational methods, procedures and policies relating to the business.
- iv) Neglect due to inadequate supervision.
- v) Fraud: Situations where employees cheat on goods and money and are not quickly detected.
- vi) Inadequate capital needed to establish and sustain the business.
- vii) Lack of knowledge of potential threats or weaknesses to the business.
- viii) Setting unreasonable and un-measurable goals and lack of objectivity in the business transactions.

#### E. Entrepreneurship education

Entrepreneurship education provides information that are needed for a successful entrepreneurship. A good education in ICT (computer soft skills), woodworking technology and relevant financial and investment skills is a sure way to financial freedom. Ford (n.d) stated that "the best we can do is size up the chances, calculate the risks involved, estimate our ability to deal with them, and then make our plans with confidence". Failure of a plan must not degenerate into a total business failure. When the implementation of business plan is properly monitored, warning signs can be detected early enough to allow a corrective mechanism to be put in place. Let us not forget that "change" is constant, accommodate it in order to succeed.

#### F. What Strategies will Foster Successful Entrepreneurship?

i). *Innovation*: the central concept of entrepreneurship is the introduction of something new in the form of product or services. This however, appears to be one of the most difficult tasks for the entrepreneur. This is so because one requires the understanding of the ever-changing environment in which we live. Change is the only thing constant in today's world.

ii). *Maintain principles* that would build trust, integrity and credibility of the management from the market. Investors and clients evaluate the management of an enterprise in terms of these qualities; where these qualities are lacking, they will

have no confidence in the enterprise. This may lead to the collapse of any enterprise (Anyakoha, 2006).

iii). *Coping with the challenge of frustration and anxiety*: for the beginning entrepreneur, Situations such as fear of sales, intense competition, lack of capital, management ability, among others, could create enthusiasm, frustration and anxiety. Injecting some innovative approaches could provide a break through.

iv). *Investment proposal*: put down in writing the nature of the business, market target, and other facts of the enterprise including risks that are involved.

v). *Legal issues*: seek and meet all legal requirements put in place by relevant authorities to regulate such businesses.

vi). *Employ qualified work force*: consider the essential traits, qualifications, skills and knowledge needed for the job when hiring labour.

vii). *Compete favourably in the market*: be equipped with relevant information about your competitors, their strengths and weakness, and device strategies that will enable you to triumph.

viii). *Establish an efficient accounting system*: ensure that factors identified and costed in the business proposal are accounted for, (Onu, 2006).

## II. CONCLUSION

To guaranty success in the woodwork industry, there is the need for TVET to combine in its programme, skills training in ICT, entrepreneurship and woodwork skills in managing the 5Ms, marketing and sales, and general business competencies will facilitate entrepreneurial success, while ICT will aid the skill development process in both entrepreneurship and woodwork. This will fast tract the achievement of the goals of TVET and stream it on course for economic development.

## REFERENCES

- [1] Adebusuyi, A. M. (2002). Poverty Alleviation in Nigeria: The Prospect of Secondary Students. *Nigeria Association of Business Education*. Vol. 3 No. 5, pp.147-153.
- [2] Anyakoha, E. U. (2006). *Entrepreneurship Education and Wealth Creation Strategies: Practical Tips for Economic Empowerment and Survival*, Nigeria: Home Economics Research Association of Nigeria (HERAN).
- [3] Fadele, G. (2009). *Impact of Vocational Training on Welfare of Immates in Nigerian Prisons*. Unpublished Ph.D Thesis Ibadan: University of Ibadan.
- [4] Igbo, C. A. (2006). *Developing Entrepreneurship Through Entrepreneurship Education in Anyakoha, E. U. (Eds) Entrepreneurship Education and Wealth Creation Strategies: Practical Tips for Economic Empowerment and Survival*. Nigeria: Home economic Research Association of Nigeria (HERAN).
- [5] Ihekoronye, C. N. (2006). *Women Entrepreneurship Challenges, Contribution to Family Living, Economics development and growth*, Nigeria: *Journal of Home Economics Research* (Special Edition vol. 7, pp. 24-27. HERAN.
- [6] Kafka, N. (2013). *What are the Implications of the ICT Revolution For TVET? UNESCO-UNEVOC e-Forum - Virtual Conference on ICTs & TVET Held from 14 to 28 May 2013*. Retrieved 10<sup>th</sup>

- March, 2020 from  
[https://unevoc.unesco.org/fileadmin/user\\_upload/docs/ICTandTV/ET\\_background-note.pdf](https://unevoc.unesco.org/fileadmin/user_upload/docs/ICTandTV/ET_background-note.pdf)
- [7] Le Boterf, G. (2010). *Costruire le Competenze Individuali e Collettive. Agire e Riuscire con Competenza. Le Risposte a 100 Domande*. Guida: Napoli. Sakarya University. Retrieved 11<sup>th</sup> January, 2020 from doi: 10.1016/j.sbspro.2015.01.1129
- [8] Maccario, D. (2012). *A Scuola di Competenze. Verso un Nuovo Modello Didattico*. Torino: Società Editrice Internazionale. Retrieved 11<sup>th</sup> January, 2020 from doi: 10.1016/j.sbspro.2015.01.1129
- [9] Nafokho, F. M. (2002). Entrepreneurial Skills Development Programmes for Unemployed Youth in Africa. *Journal of Small Business Management*.
- [10] Nelson, B. (2006). Entrepreneurship and Self-Employment Promotion in Asia and Pacific Region. Proceeding of the Regional Workshop on Training for Entrepreneurship and self-Employment. Asian Development Bank & ILO.
- [11] Okorie, J. U. (2000). *Developing Nigeria's Workforce*. Calabar: Page Environs Pub.
- [12] Onu, W. C. (2006). Practical tips to successful Entrepreneurship in Anyakoha, E. U. (Eds) *Entrepreneurship Education and Wealth Creation Strategies: Practical Tips for Economic Empowerment and Survival*, Nigeria: Home Economic Research Association of Nigeria (HERAN).
- [13] Saud et al. (2011). Effective Integration of Information and Communication Technologies (ICTs) in Technical, Vocational Education and Training (TVET) Toward Knowledge Management in the Changing World of Work', *African Journal of Business Management* Vol. 5, No. 16, pp. 6668-6673. Retrieved 7<sup>th</sup> December, 2019 from <http://www.academicjournals.org/ajbm/pdf/pdf2011/18Aug/Saud%20et%20al.pdf>
- [14] Tuscany Academy (2012). Computer Education in Nigeria Secondary Schools. Retrieved 18<sup>th</sup> November, 2019 from <http://www.tuscanyacademy.com>
- [15] United Nations Education, Scientific and Cultural Organization (2013). Connecting Social Entrepreneurship in ICT with Educational Purposes: The Cambodian Case of Digital Divide Data. Retrieved 7<sup>th</sup> December, 2019 from <http://www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/connecting-social-entrepreneurship-in-ict-with-educational-purposes-the-cambodian-case-of-digital-d/>