UBS Journal of Engineering, Technology and Applied Sciences
Journal of UNIZIK Business School, Awka, Anambra State, Nigeria

Volume 1, Issue 1; 2023
https://journals.unizik.edu.ng/ubs-jetas

INTEGRATING ENTREPRENEURSHIP TECHNIQUES IN METALWORK PROGRAMME OF TECHNICAL COLLEGES FOR SELF-EMPLOYMENT IN NIGERIA

Anthony U. Ekeagwu
Department of Technical Education Alvan Ikoku Federal College of Education, Owerri..
Email: akantony54@gmail.com

CITATION: Ekeagwu, A.U. (2023). Integrating entrepreneurship techniques in metalwork programme of Technical Colleges for self-employment in Nigeria, *UBS Journal of Engineering, Technology and Applied Sciences*, 1(1), 17 – 26.

***Paper Type**: Original Research Paper;*
***Correspondence**:*
akantony54@gmail.com

ABSTRACT

The study was aimed at identifying entrepreneurship techniques needed in metalwork programme of technical colleges to meet the demand of self-employment in Nigeria. The population for the study consisted of 51 Metalwork Instructors from technical colleges in the South East, Nigeria. The instrument for data collection was a structured questionnaire developed by the researcher. The respondents were the 51 metalwork Instructors teaching in eleven technical colleges in the South East States. Mean and standard deviation were used to answer the research questions 1 & 2. The findings of the study revealed that metalwork programme in technical colleges needed the following entrepreneurship techniques: techniques for planning, budgeting, funding, personnel management and control, networking, product patenting, intellectual property preservation, mass production, marketing and strategy of monopoly in entrepreneurship. Based on the findings, conclusions were drawn after which the following recommendations were made among which were that: Government, in collaboration with successful entrepreneurs should establish entrepreneurship programme for students post-graduation internship to promote business management ability for self-employed graduates; Government should also influence local companies to extend post-graduation internship programmes to industrial space, where graduates of technical colleges in metalwork could freely gain entrepreneurship experience, without having to hit and miss in their individual search for internship placement; Government should seriously adhere to the foregoing recommendations if metalwork graduates must succeed in the business of self-employment.

***Key words:** Entrepreneurship, Internship, Metalwork, Self-employment, Techniques.*

1. INTRODUCTION

Metalwork programme is the study that involves metal-related courses such as: Mechanical Engineering Craft Practice, Welding and Fabrication and Foundry Craft Practice (National policy on Education by the FME 1998). Metalwork, therefore, is the use of metallic materials, tools and equipment for the production of goods and services for humanity. Metalwork is one of the (TVET) programmes carried out in technical colleges in the South-East of Nigeria. National policy on Education by the FME (2013)

describes the role of Vocation Technical Education and Training (TVET) as providing skills acquisition and scientific knowledge for manpower development, aimed at equipping the learner with tools, culture and values necessary for effective function in the society. It is the opinion of Gambo (2002) that socio-economic development is not only achievable through the provision of relevant and functional TVET but will also assist in the development of skilled manpower required in laying solid foundation for technological and industrial development, as well as source of income-generation for the individual and the nation. Tsado and Abdullahi (2016) posit that two major solutions proffered by Intervening Solution (2015) for reducing poverty in developing countries are provision of quality education and self-sustaining programmes or enterprises of which TVET, through formal, informal and non-formal system equips individuals with skills to conquer poverty. Products of technical colleges who acquired practical skills in the area of metalwork through TVET programme would surely overcome poverty by embracing gainful employment. TVET furnishes skills required to improve productivity raise income levels and improve access to employment opportunities (Umar, Igwe and Mohammed, 2019). Entrepreneurship on the other hand is the art of establishing and managing business enterprise such as production workshop, sails showroom or servicing and maintenance of machines at the risk of gaining or losing money on the running capital. Olawolu and Kaegon (2012) confirm that entrepreneurship education prepares the youth to be responsible and trains individuals who become entrepreneurs by exposing them in real life-learning-experiences, where they will be required to think, take risks manage circumstances and incidentally learn from the outcome.

Entrepreneurship complements the attributes of a metalworker who is basically a good work-planner, innovative, constructive and project executor. It teaches a product of technical college to plan, set up, fund and manage an enterprise for profit-making. Abafe-Balogun and Nwankpa (2012) validate the foregoing assertion by stating that entrepreneurship education involves a dynamic process of creating wealth through the process of creating something new and in the process assumes both attendant risks and rewards. There is so much confidence reposed on Entrepreneurship Education currently, hence the assertion by Okereke and Okoroafor (2011) that entrepreneurship education has been acknowledged world-wide as a potent and viable tool for self-employment, job and wealth creation. For Daluba and Odiba (2013), entrepreneurship is a process of producing something new with value by creating enough time, effort with social risk and resulting to monetary reward and personal satisfaction. In support of the foregoing assertion of Daluba and Odiba, Nwabuama (2000) revealed that entrepreneurship education identifies the general characteristics of entrepreneurs and how potential entrepreneurs can be trained in management techniques needed for effective performance for long-time survival of an organization, after the acquisition of occupational skills.

Most careers in the industries in future will be automated, so for someone to succeed in keying into the system, they must be practically innovative, curious and resilient. The tendency to create new products should dominate the managerial instinct of a metalworker in an enterprise where information and dexterity are internalized. Ememe (2010) admonishes that entrepreneurship education enables youths to seek for success in ventures through their efforts. Creativity, which is an attribute of entrepreneurship is significant in leadership and management of techniques that drive business success. Amusan (2004) acknowledges this fact, when he claims that entrepreneurship education provides opportunities for students to access their aptitude and skills relating to those necessary for

developing and running businesses. People are said to be skilled when they have the capacity to apply acquired knowledge to practical work. More cramming of ideas, instructions and directives that are verbalized or read in the pages of a textbook cannot achieve the desired effect on industrial output. Teaching students knowledge today, the way they were taught yesterday without skills, would surely rob them of tomorrow. That is the reason Ezeani (2012) affirms that entrepreneurship education entails teaching students, learners and would be businessmen the essential skills required to build viable enterprises and equipping them with the skills needed for taking responsibility and developing initiatives of prospective trainees.

The current spate of unemployment in the country, Nigerian has made it imperative to promote technical education, particularly metalwork skills in technical colleges. Education for self-employment is one of the goals of secondary education as enunciated in the National Policy of Education by the Federal Ministry of Education (FME, 2009). A new challenge emerges when students of technical colleges graduate with appreciable skills and establish private workshops or enterprises. This new challenge is the lack of knowledge and techniques needed in managing their enterprises. This idea brings to the fore, the idea that metalwork entrepreneurship is the blue-chip for success in self-employment. Most metal workshops seen in the South-east are substandard and poorly managed. This scenario makes it obvious that entrepreneurial techniques are underplayed in such labour spaces. One therefore wonders how successful those business ventures have been, in what measure they have contributed in mitigating the challenge of unemployment in the region. This state of affair has made it imperative for an intensive study to be carried out to identify the techniques needed to produce a reliable self-employed workforce to accelerate the economic growth of the country.

Accordingly, metalwork Entrepreneurship Techniques are the indices that create the technological space, which every student need to live through in order to be successful in this austere world. Okereke and Okorafor (2011) lend their support to the foregoing assertion by emphasizing that entrepreneurship education has been acknowledged world-wide as a potent and viable tool for self-employment, job and wealth-creation. Entrepreneurship education affords one the opportunity to develop a mindset and motivation to risk venturing into a new career-path that will complement the knowledge and skills they acquired in the technical college. Entrepreneurship education creates the willingness and ability in a person to seek out investment opportunities in society and establish and run such enterprise successfully. The entire aim of entrepreneurship education is predicated on inspiring students to make positive changes in their lives through creating new business environment, advancing knowledge and skills in planning, establishing, funding and managing the business, with a view to making financial profit. It is the integration of entrepreneurship techniques that creates avenues for jobs and wealth in self-employment after graduation.

1.1 Objectives

The main purpose of the study was to identity metalwork entrepreneurship techniques needed to achieve human capital to meet the demand of self-employment. Specifically, the study sought to:

1. identify the supervisory entrepreneurship techniques needed in metalwork programme of technical colleges.
2. ascertain the brainstorming entrepreneurship techniques needed in metalwork programme of technical colleges.

1.2 Research Questions

a. What are the supervisory entrepreneurship techniques needed in metalwork programme of technical colleges?
b. What are the brainstorming entrepreneurships techniques needed in metalwork programme of technical colleges?

2. METHODOLOGY

The study employed a survey design. The survey design is used for studies that deal with people's opinion, beliefs, attitudes, motivation and behaviour (Osuala, 2001). The study found out opinions of respondents on the entrepreneurial techniques needed by metalwork students of technical colleges to meet the demand of self-employment after graduation, hence the suitability of survey design for the study. The study was carried out in south-east of Nigeria to cover the 12 technical colleges in five south-east states. The population for the study comprised of 51 Metalwork Instructors in all the technical colleges studied. The instrument for data collection of the study was a questionnaire developed by the researcher. The items of the questionnaire were based on 5-point scale. The entire population was used due to its manageable size.

The response options on the instrument were weighed and assigned numerical values as follows: Very Highly Needed (VHN=4.50-5.00); Highly Needed (HN=3.50-4.49); Needed (N=2.50-3.49); moderately Needed (MN=1.50-2.49); Not Needed (NN=0.00-1.49) respectively. A higher value indicated a more positive response. The instrument was validated by three metalwork technology education lecturers in the Department of Industrial Technical Education, University of Nigeria, Nsukka. The instrument has a reliability co-efficient of 0.86, using Cronbach Alpha reliability test conducted by 6 computer experts who trial-tested it and found it consistent with what it was intended to measure. This is in line with Nworgu (2012) who stated that reliability concerns the consistency with which an instrument measures whatever it measures. The instrument was therefore considered suitable for the research. The questionnaire was administered by the researcher with the help of four research assistants, one person from each state of the south-east. Copies of the questionnaire were collected and their items used for data analyses. The research questions were answered using descriptive statistic cognates of mean and standard deviation from data collected on the 5-point scale of measuring instrument.

3. ANALYSIS AND DISCUSSIONS

The results of the data analyzed for the study were presented based on the research questions posed in the study.

3.1 Research Questions Analyses

3.1.1 Research Question One

What are the supervisory entrepreneurship techniques needed in metalwork programme of technical colleges?

Table 1: Metalwork Instructors with respect to supervisory Entrepreneurship Techniques Needed in Metalwork programme of Technical Colleges.

S/N	Item Statement	$\overline{X}$ N = 51	SD	Remarks
1	Evaluate obscure business cloud.	3.53	0.55	Highly Needed
2	Ascertain true customer need.	3.34	0.73	Needed
3	Adopt excellent market plan.	4.47	0.71	Highly Needed
4	Maintain regular course of work procedure.	3.37	0.59	Needed
5	Create trade monopoly for increased profit.	4.61	0.49	Very Highly Needed
6	Ensure adequate book-keeping.	4.61	0.49	Very Highly Needed
7	Observe patenting and intellectual property preservation.	3.34	0.73	Needed
8	Ensure advertising and sale of new products.	4.53	0.55	Very Highly Needed
9	Generate foresight into new business areas.			
10	Capacity to network for knowledge of new business environment.	3.44	0.62	Needed
11	Instill courage to take bearable risks in business	4.27	0.60	Highly Needed
12	Encourage perseverance and work under pressure.	3.33	0.67	Highly Needed
13	Make decisions in the face of hardship	3.35	0.61	Needed
14	Take responsibility for failure.	3.35	0.61	Needed

15	Capacity for multi-task business environment.	3.68	0.47	Highly Needed
16	Pro-activeness in tackling new challenges.	3.37	0.59	Highly Needed
17	Dexterity in finance and budget planning.	4.48	0.62	Very Highly Needed
18	Create supply and consumer market when needed.	4.47	0.59	Very Highly Needed
19	Prudent management of time and resources.	4.53	0.55	Very Highly Needed
20	Ability to manage and control subordinate personnel.	4.40	0.65	Highly Needed

Deducing from the above data as presented in Table 1, it could be seen that supervisory techniques with mean values from 3.33 – 4.61 are needed by metalwork teachers

The result of the study in Table 1 on the supervisory techniques needed in metalwork entrepreneurship showed that none of the entrepreneurship techniques stated have been applied in the technical colleges under study. The incorporation of entrepreneurship education in the curriculum of technical colleges programme would enable students to acquire the needed techniques for the management of their business after graduation. The business of self-employment is more challenging without the acquisition of the knowledge of entrepreneurship techniques which usually propels the metalwork craftsmanship to greater success. Ezeudu (2008) agrees with the foregoing statement by asserting that entrepreneurship education is a process of organizing, managing and assuming risk in an enterprise. Ibrahim, Mandara and Soba (2008) expressed the quality and characteristics expected of an entrepreneur as, perception of new economic opportunities, taking initiative, creativity, ability to demonstrate effective sales promotion, ability to determine when to introduce new products which the customers needed and skills to determine when to allow reasonable credit facilities to trusted customers.

3.2 Research Question 2

What are the brainstorming entrepreneurship techniques needed in metalwork programme of technical colleges?

Table 2: Metalwork Instructors with respect to Brainstorming Entrepreneurship Techniques Needed in Metalwork Programme of Technical Colleges.

S/N	**Item Statement**	**X** **N = 51**	**SD**	**Remarks**
1	Inculcating excellent work habits to staff.	4.27	0.47	Very Highly Needed
2	Monitoring steps in staff-work execution	4.55	0.93	Very Highly Needed

3	Guiding staff skills profile in line with workshop objectives.	3.64	0.81	Highly Needed
4	Outlining practical procedures for work-stages evaluation.	4.36	0.81	Highly Needed
5	Producing model piece prior to mass-production.	3.09	1.38	Needed
6	Encouraging innovation and research practice.	4.00	0.77	Highly Needed
7	Emphasizing safety in every step of production	4.64	0.81	Very Highly Needed
8	Offering incentives for staff target achievement.	4.09	0.83	Highly Needed
9	Engaging market survey as a product-pricing strategy	3.50	0.60	Highly Needed
10	Inculcating in staff the capacity for both team and independent work.	3.42	0.51	Needed
11	Capacity to plan and fund future expansion.	4.47	0.59	Highly Needed
12	Financial courage for risk on investment.	4.48	0.62	Highly Needed
13	Resilience and discipline in time of need.	3.63	0.48	Highly Needed
14	Ability to take responsibility for challenges.	3.35	0.69	Needed
15	Ability to make safe and conscious decisions.	3.42	0.51	Needed
16	Capacity to anticipate price fluctuations.	3.68	0.47	Highly Needed
17	Determination to achieve set goals.	3.58	0.49	Highly Needed
18	Having desire to improve quality of products.	4.61	0.49	Very Highly Needed

Appreciating the data presented in Table 2, it was observed that the brainstorming techniques with mean values from 3.09 – 4.64 are needed by the metalwork teachers. The respondents, therefore, are unanimous in their opinions that all the itemized requirements in the table are needed to be engaged in metalwork programme of technical colleges for the achievement of self-employment in the country. The standard deviations also revealed that the respondents are not distinctive in their opinion on the techniques of entrepreneurship needed in the metalwork programme of technical colleges, in South-east Nigeria.

Entrepreneurship entails undertaking tasks in own business enterprise. And these tasks involve production of goods, services and management of personnel who collaborate with the owner to initiate ideas to plan, organize, coordinate, finance, harness talents, apply skills, assemble the supply chain and market products for the purpose of making profit. According to Vincent et al (2013) entrepreneurship education seeks to provide students with knowledge, skills, motivation and helps them learn leadership and interpersonal relationship. Atsumbe B.N et al (2016) state some benefits of entrepreneurship as:

i. Entrepreneurship may promote innovation and thus create new jobs.
ii. There may be direct effect on employment if new young entrepreneurs hire fellow youths roaming the street.
iii. New small firms may raise the degree of competition in the product market, bringing gains to customers.
iv. Young entrepreneurs may particularly responded to new economic opportunities and trades.
v. Greater self-employment among young people may go along with increased self-reliance and well-being.

Jophus (2004) supports the foregoing by stating that entrepreneurship education equips students with knowledge and skills that could enable them identify business opportunities, start, successfully manage and expand an enterprise.

4. CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that Products of technical colleges in the South-east Nigeria do not graduate with the knowledge and techniques of entrepreneurship. Moreso, the acquisition of knowledge and practical skills in metalwork cannot substitute for the knowledge of entrepreneurship techniques of supervision and brainstorming which are the blue-chip of private business ownership. It is also clear from the findings that all the entrepreneurship techniques identified are needed by metalwork graduates to enable them to set up and grow in their self-reliant business. In embracing the new status as metalwork entrepreneur, the craftsman and technician have changed their role of business from mere workmen to workshop or business managers, an elevation that boosts both their social ego and financial prosperity.

Based on the above observations made, the following recommendations were made:

1. Government should influence private companies to extend post-graduation internship to the industrial space, where graduates of technical colleges, particularly in metalwork could freely gain entrepreneurship experience, without having to hit-and-miss in their individual arrangements for internship.

2. Government, in collaboration with successful entrepreneurs should establish entrepreneurship programmes for student's post-graduation internship, to promote business management knowledge and skills for self-employed graduates.

3. Entrepreneurship education should be incorporated in the curriculum of technical college programme to provide a safe-landing for metalwork students who would like to be self-employed after graduation.

REFERENCES

Abefe, B.E., Nwankpa, N.N. (2012). Tackling Unemployment through Vocational Education. *Science Education Development Institute*, 2(3), 103-110.

Amusan, A.O. (2004). Inclusion Entrepreneurship into secondary Schools Curriculum. *Journal of Business Administration and Management (JOMAM)* 51(1), Ede Federal Polytechnic.

Atsumble, B.N., Tongshuwal, J.M & Fittoka, S.B. (2016). Entrepreneurship in Technical Vocational Education and Training for Self-reliance. *Journal of technical Vocational Education, Training and Research (JOTVETAR)* 1(2), 20-27.

Daluba, N.E. & Odiba, I.A. (2004). Evaluation of Entrepreneurship Skills Development in Students of Vocational and Technical Education Programme in Colleges of education in Kogi State, Nigeria. *Research on Humanities and Social Science*. 3(2), 23-38.

Ememe, O.N. (2011). Entrepreneurship Education in the University in the Eastern Nigeria: Implications for Higher Education Administration. Unpublishes Ph.D. dissertation, University of Port-Harcourt.

Ezeani, N.S. (2012). The Teacher and Skills Acquisition at Business Education: From the Perspective of Accuracy Skills. *Arabian Journal of Business and Management (REMO)* 2(4), 13-18.

Ezendu, F.O., (2008). Restructuring our Science, Technology and Mathematics (STM). Education for Entrepreneurship. Proceedings of the 49th Annual Conference of STAN.

Fashus, K.O., (2006). Entrepreneurship Theory. Strategy and prentice, Abuja: Bee.

Federal Republic of Nigeria (1998). National Policy of Education. Lagos: NERDC.

Federal Republic of Nigeria (2009). National Policy on Education. Roadmap for Nigerian Education.

Federal Republic of Nigeria (2013). National Policy on Education. Lagos: NERDC.

Gambo, E.K., (2002). Making Vocational Institutions in Nigeria Self-sustaining. *Journal of Issues on Technical Education* 1(2), 74.

Ibrahim, A.D., Mandura, B.M. & Soba, B.M. (2008). Entrepreneurship Education in Nigeria: Challenges for the Feminine Folks. Paper Presented at a Seminar Organized by the School of Vocational Education, FCE Yola, 19th-20th June.

Jophus, A.M., (2004). Vocational Technological Education for Accelerated Wealth Creation: Critical Issues Facing the Nation. Lecture Presented at the 56th Annual New Year School, University of Education Winneba,. On Thursday 30th December, 2014.

Nworgu, B.G., (2005). Educational Research: Basic Issues and Methodology (2nd Edition), Ibadan: Wisdom Publishers Limited.

Okereke, L.C. & Okorafor, S.N., (2011). Entrepreneurship Skills Development for Millennium Development Goals (MDGS) in Business Education. Business Education Journal, 1(11), 83-88.

Olawolu, O.E. & Keagon, L.E.S., (2012). Entrepreneurship Education as Tool for Youth Empowerment through Higher Education for Global Workplace in Rivers State. A Paper presented at the Seventh Regional Conference on Higher Education for a Globalised World, Organized by the Higher Education Research and Policy Network (HERPNET), Holding at the University of Ibadan, Ibadan Nigeria, between the 19th and 21st Sept., 2012.

Osuala, E.C., (2007). Principles and Methods of Business and Computer Education. Cheston Agency Limited, Enugu, Nigeria.

Tsado, E.B., & Abdullahi, M.T., (2016). Restrategizing Technical and Vocational Education and Training for Sustainable Socio-economic Development in the Developing Countries. *Journal of Technical Vocational Education, Training and Research (JOTVETAR).* 1(2), 10-19.

Vincent, E.O., Nsini, A., & Caleb, E.E., (2013), Youth Empowerment and the Integration of Entrepreneurship Education into Technical Vocational Education and Training (TVET) in Nigeria. *Academic Journal of Inter-disciplinary Studies*. 2(2).

Wushishi, D.I., (2013). Promoting Entrepreneurship: The Training Challenges for Science Technical and Vocational Education in Nigeria, Mijorsar 4(1), 1-11.