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PROF. JOSEPHINE N. OKOLI

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EDITORIAL

Journal of Innovations in Science Education (JISE) is a Publication of Association of Science Educators Anambra (ASEA). It is publishable both online and offline. The publication is twice a year. It embraces only on science education and innovative ideas. JIES provide an avenue for dissemination of research findings, innovative ideas and practices between researchers, science educators and policy makers in the form of original research, book review, theoretical and conceptual papers which will serve as an important reference for the advancement of teaching, learning and research in the field of science education.

We are grateful to the contributors and hope that our readers will enjoy reading these contributions.

Prof. Josephine N. Okoli
Editor-in-Chief

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STRATEGIC DEVELOPMENT OF ENTREPRENEURIAL SKILLS AMONG UNDERGRADUATES IN SCIENCE AND TECHNOLOGY EDUCATION FOR POVERTY ALLEVIATION IN NIGERIA

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Abstract

The persistent challenge of poverty in Nigeria, the nation's growing graduate unemployment rate and the economic downturn underscores the urgent need for innovative and sustainable solutions, particularly through education. Lack of technical skills, which can be acquired in science and technology education, have been linked to graduate unemployment, adolescent delinquency and the majority of adult crimes. This paper explores the strategic development of entrepreneurial skills among undergraduates in science and technology education as a vital approach to poverty alleviation in Nigeria and advocates for a paradigm shift towards skill-oriented and enterprise-driven curricula. The integration of entrepreneurship education within science and technology disciplines equips students with the critical thinking, creativity and business acumen necessary to identify opportunities and create value in the economy. Emphasis is placed on strategies such as curriculum reform, institutional partnerships with industry, experiential learning, mentorship programs and access to startup resources. The development of entrepreneurial skills for STE undergraduates was assessed using such approaches, including role play, project method, field excursions and demonstration among others in a strategic manner. It was suggested, among other things, that the connections between educational institutions and industries should be strengthened in the area of student industrial work experience. By fostering innovation and self-employment capabilities, science and technology graduates can become job creators rather than job seekers. The study concludes that a deliberate and well-structured framework for entrepreneurial skill development can empower Nigerian youths, reduce unemployment and contribute significantly to national poverty reduction efforts.

Keywords: Entrepreneurship skills, Poverty alleviation

Introduction

Nigeria has a nationwide poverty problem. It can be found throughout the country's northern, southern, western and eastern regions. It can be found in Nigeria's cities and rural areas. Nevertheless, poverty rates in Nigeria are substantially higher in rural than in urban areas. The poor are those who are unable to obtain an adequate income, find a stable job, own property or maintain healthy conditions. They also lack an adequate level of education and cannot satisfy their basic health needs (Jhingan, 2017). The poor are often illiterate, poor health and have a short life span (World Bank, 1995). The World Bank Organization describes poverty in this way: Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time.

Poverty has many faces, changing from place to place and across time and has been described in many ways. Most often, poverty is a situation people want to escape. Therefore, poverty is a call to action for the poor and the wealthy alike, a call to change the world so that many more may have enough to eat, adequate shelter, access to education and health, protection from violence, and a voice in what happens in their communities.

The Central Bank of Nigeria (1999:1) views poverty as:

> *A state where an individual is not able to cater adequately for his or her basic NEEDS of foods, clothing and shelter; is unable to meet social and economic obligations, lacks gainful employment, skills, assets and self-esteem; and has limited access to social and economic infrastructure such as education, health, portable water, sanitation and consequently has limited chance of advancing his or her welfare to the limit of his or her capabilities.*

The poor have limited or no access to basic needs of life such as food, clothing, decent shelter and are unable to meet social and economic obligations, they lack skills and gainful employment, have few, if any economic assets and sometimes lack of self-esteem (Sarah, 2021). The ability of the destitute to change their circumstances on their own is frequently lacking. The popular perception is that poverty is natural and a part of life that one may tolerate till death due to the prevalence of poverty in Nigeria. When one considers that Nigeria, a nation rich in both liquid and solid materials that produces

about 1.8 million barrels of oil per day, would be so impoverished that more than 80% of its population would be surviving on less than N500 per day, the story will become even more confusing. According to a (World Bank) report, the number of poor people in Nigeria will rise to 95.1 million in 2022. The number of poor people was 89 million in 2020 and would be 95.1 million in 2022. This means that 6.1 million more persons would have fallen beneath the poverty line between 2020 and 2022, a 6.7 percent increase. (Ojeifo, 2018).

Statement of the Problem

Despite Nigeria's abundant human and natural resources, the country continues to face persistent poverty and high unemployment rates, especially among graduates. Undergraduates in science and technology education programs often lack practical entrepreneurial skills that could enable them to become self-reliant or job creators after graduation. The existing curriculum in many Nigerian tertiary institutions tends to emphasize theoretical knowledge over the development of innovations, entrepreneurial competencies that are necessary for navigating the current socio-economic realities, (Hassan, 2018).

Furthermore, the gap between academic training and the practical demands of the labour market has contributed to a mismatch in skills, rendering many graduates ill-prepared to contribute meaningfully to economic development or to alleviate poverty through self-employment. Without strategic efforts to integrate and develop entrepreneurial skills within science and technology education, the potential of these disciplines to serve as tools for national development and poverty alleviation remains underutilized, (Ekong & Ekong, 2016).

Therefore, this study seeks to examine the extent to which entrepreneurial skills are being strategically developed among undergraduates in science and technology education in Nigeria and how such development can be effectively harnessed as a means of reducing poverty and improving economic self-sufficiency.

Purpose of the Study

The purpose of the study is to investigate the strategic development of entrepreneurial skills among undergraduates in science and technology education in Nigeria, with a specific focus on its potential contribution to poverty alleviation. The study aims to

evaluate the current status of entrepreneurial education within science and technology programs, identify existing gaps in skill acquisition and explore effective strategies for integrating entrepreneurship into the curriculum. Ultimately, the study seeks to provide practical recommendations for enhancing the entrepreneurial capacity of students to enable them to become self-reliant, innovative and capable of contributing meaningfully to national economic development.

The Causes and Problems Imposed by Poverty in Nigeria

Poverty in Nigeria could be attributed to so many factors such as poor economic policies, poor value orientation and poor provision of infrastructural and social amenities especially in rural areas, low productivity in agricultural and industrial sectors resulting from low skill possession among workers. Others are inadequate school curricula and high level of unemployment resulting from lack of saleable skills among graduates from the various educational institutions (Araba, 2018).

Changing trend in the labor market profiles have increased the complexity of skills required by today's workforce and threatened the position of graduates that are ill-equipped with knowledge of modern technology (Onyeaghala, & Okorie, 2018). It is these same skills that are needed for a graduate to start and effectively run and manage his own business. The available statistics indicate that the unemployment rate in Nigeria has increased from 27.1 percent in the second quarter of 2020 to an estimated 33 percent in 2022. Unemployment is unquestionably a root cause of poverty. When people have no jobs, they get hungry and angry. They also become easy tools for criminal activities. Without addressing unemployment head-on, Nigeria cannot successfully alleviate poverty (Esomonu, 2018).

Poverty Alleviation Programmes and the Need for the Development of Entrepreneurial Skills among the Youth

Nigeria, being one of the sub-Saharan African nations with a high percentage of poverty, has long developed and executed a number of policies and programs, if not specifically to address the needs of the poor, then at least to reach them. These programmes include but not limited to: National Accelerated Food Production Project (NAFPP), Agricultural Development Programme (ADP), National Directorate of Employment (NDE, Family Support Programme (FSP), Directorate of Food, Roads and Rural Infrastructure (DFRRI), National Poverty Eradication Programme (NAPEP),

National Economic Empowerment and Development Scheme (NEEDS). According to Ekong et al 2016), early poverty alleviation measures were targeted at the agricultural sector. There are several causes of the failure of these poverty alleviation programmes in Nigeria. The causes are divided into two broad categories. Those associated with policy design and implementation and those associated with policy acceptability. The factors that relate and have bearing on these causes include: misunderstanding of the policies made for the people by the policy makers: misplaced priorities: favoritism and benefit capture, which breeds contempt for the policies. A situation whereby the change agents or policy makers do not know the people they make the policy for, especially their felt needs, they are liable to either overestimate or underestimate the problems of such people and are also likely to misplace priorities. However, skill acquisition and entrepreneurship education are crucial path for Nigerians to escape poverty. Many people will be able to escape poverty if skill development and entrepreneurship education are encouraged and promoted rather than orientating the youths toward searching for white-collar jobs. The education industry has to focus on skill development and entrepreneurship education since it helps people become more independent and is considered as crucial to becoming ready for the workforce. An educated individual is therefore required to display a noble character in society for both his own growth and the growth of society. Among other things, entrepreneurship education in Nigeria aims to give tertiary institution students the knowledge, skills and inspiration to support the success of entrepreneurs in a range of initiatives. It is a life-long learning process. (Esomonu, 2018 & Ojeifo, 2018)

Meaning and Types of Entrepreneurs

An entrepreneur is someone who starts a new business, taking on the most of the risks and reaping most of the gains. Entrepreneurship is the practice of starting a business. The entrepreneur is usually regarded as an innovator, a source of fresh concepts for products, services, businesses and operational methods. Entrepreneurs are essential to the health of any economy because they have the knowledge and drive to foresee requirements and sell viable new ideas. Profits, notoriety and prospects for future expansion are given to entrepreneurs who successfully take on the risks involved in starting a business. Failure in entrepreneurship leads to losses and diminished presence in the business world. There are various types of entrepreneurs. Basedon enterprise size, entrepreneurs are classified into the following types: small-scale entrepreneur,

medium-scale entrepreneur, large-scale entrepreneur. However, this paper is focused at looking into the following types of entrepreneurs (Agommuoh & Ndirika, 2017).

Innovating Entrepreneurs

Entrepreneurs who are innovative, also referred to as innovators, are the kind of businesspeople who frequently introduce novel products or ideas to the market. They specifically search new markets, new production techniques, new goods and restructure the company. Such businesspeople constantly strive to innovate and spend time and resources on development.

Imitative Entrepreneurs

Imitative entrepreneurs or imitating entrepreneurs are often called 'copy cats'. This is because these entrepreneurs mainly follow and adopt the innovative entrepreneurs' existing successful enterprise system. They do nothing new of their own. Imitative entrepreneurs apply strategy from other enterprises in their own business.

Fabian Entrepreneurs

Fabian entrepreneurs are described as those types of entrepreneurs who generally do not seek to implement changes in their enterprise techniques. These entrepreneurs are known for not making sudden decisions. They imitate the change in their strategy only when it is completely clear that failing to do so will not be harmful.

Drone Entrepreneurs

Drone entrepreneurs are often described as entrepreneurs who do not like to adopt any changes in their enterprise techniques. They strictly follow their traditional strategies or methods for development, production or marketing. These entrepreneurs feel or experience pride and tradition in the old ways of doing business.

Introduction and Relevance of Entrepreneurship Education in Science and Technology Education in Nigeria Economy

Science and Technology education is used as a comprehensive term referring to those aspects of the educational processes involving the study of science, technologies and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. In the light of this, vocational and technical education is the preparation of individuals to acquire practical skills as well as basic scientific knowledge; it provides skilled manpower for the world of work that is increasing the workforce in the country. Students acquire specialized skill from science and technology education as they are trained, equipped, with workable practical skills, knowledge, aptitude and competencies required in specific occupations. (Agommuoh & Ndirika, 2017).

In Nigeria, several forms of entrepreneurship education are provided from primary to graduate university programs, covering all levels of education. Therefore, the move by the government through the Federal Ministry of Education to make entrepreneurship education one of the compulsory general studies for students in universities across the country should be seen as a positive step in the right direction. This is to inculcate in the undergraduates the spirit of self-reliance. This development will not only address the problem of unemployment and underemployment but will also ensure an entrepreneurial human capacity for poverty alleviation. It is the hope that with the introduction of entrepreneurial education in our science and technology education at the tertiary institution level will better be repositioned to become centers of excellence with the equipping of technical laboratories at the primary and secondary levels. Different strategies for seizing opportunities are the focus of entrepreneurship education. The goal of entrepreneurship education in science and technology education is to provide students with the information, knowledge, skills and drive they need to become successful in their various business endeavors. At the university level, science and technology education programmes include science education, technology education, business education and home economics education. Science education programmes are Cloud Computing, Data Science/ Big Data, Cyber Security, Web & Mobile Design: UI/UX Design, etc. While, Technology education has three option areas as; wood/building technology, mechanical/auto-mechanics, electrical and electronics technology. Other programmes of science and technology education include Digital marketing and agriculture that offer special options areas necessary in

producing individuals that are self-reliant. By this, science and technology education create jobs for Nigerian teaming population. (Nigerian Universities Commission, 2008). It is essential for science and technology education to work closely with entrepreneurship education advocates and other social sectors to reduce poverty and to ensure the emergence of graduates who are self-sufficient and job creators rather than job seekers. This is crucial for decreasing poverty and boosting the nation's ability to produce wealth. (Curran & Stanworth, 2015),

Objective of Teaching Entrepreneurship Education in Science and Technology Education

Entrepreneurship education according to Paul (2015) is structured to achieve the following objectives.

- To offer functional education for the youth that will enable them to be self-employed and self-reliant.
- Provide the youth-graduates with adequate training that will enable them to be creative and innovative in identifying novel business opportunities.
- Creation of employment opportunities and generation
- To serve as a catalyst for economic growth and development.
- Offer tertiary institution graduates with adequate training in risk management, to make certain bearing feasible.
- To reduce the high rate of poverty.

Entrepreneurship Skills Required in Science and Technology Education for Poverty Alleviation

Students in particular can benefit from relevant and high-quality Science and Technology education and training, which can provide them with the information, skills and competences needed for employment possibilities or prepare them for self-employment. Successful businesspeople exhibit several desirable and teachable practical-oriented behaviors. The term "developing skills" in this paper refers to improving one's capacity for producing higher-quality work through education. The entrepreneurship development program is one that is created to assist a person in fostering their entrepreneurial interest and in acquiring the skills required to fulfill their role as an entrepreneur successfully. Skills are the aptitudes, propensities and expertise that are developed via deliberate, systematic and prolonged training required to successfully perform work duties in an adaptable manner. Entrepreneurial skills are

competency-based, resourceful abilities that can help someone become self-sufficient, independent and effective in overcoming obstacles in life. The entrepreneurial skills required by undergraduates of Science and Technology Education include but not limited to leadership skills, managerial skills, communication skills, networking skills. (Ekong, *et al*., 2016)

Managerial Skills: Fabunmi, (2019) identified some management skills such as ability to plan, organize and manage small scale businesses, ability to maintain business ethics, ability to utilize market information, develop skills for effective supervision and co-ordination as well as ability to apply integrating skills. Management skills are competencies obtained to enhance the process of running, directing or administering an organization. It refers primary to directing human endeavors and capabilities and coordinating the whole as a team through effective leadership. However, management skills needed for effective job performance consist of various components which include:

Planning: This is the process of setting up targets or objectives to be achieved in the future and an outline of appropriate means necessary to accomplish them.

Directing: This is the exerting of influence on people to work towards the organizational goal. It has to do with interpersonal aspect of managing. It involves clarifying, guiding, teaching and encouraging employees to perform effectively, zealously and confidentially.

Controlling: It is the process of ensuring that organizational objective is actually being attained and correcting lapses where they occur. Its elements are setting standard, measuring performance, analysis of results and taking corrective measures (Sambo, 2020).

Networking Skills: Networking is a skill that many business owners and entrepreneurs use to grow their brands. It involves keeping in touch with people who can support and boost one's idea into a successful, realized business venture. An innovative idea, ambitious goal and strong work ethic are vital for an entrepreneur. However, those elements are not enough on their own. There are a lot of tools that can be used to build professional network, including reaching out to successful business owners to learn from. (Ikeme, 2017)

Resource Utilization and Management Skills: Human and material resources utilization skills play a vital role in the success of any business. Resources utilization and management is concerned with the process of planning, organizing, directing, controlling and co-ordination of available resources for success of enterprises.

Marketing Skills: Marketing skills are broad range of knowledge, abilities, attitudes and observable patterns that directs the flow of products from producers to final users. These together accounts for the ability to buy, develop and package quality product, sell and deliver several services and products for profitability of enterprises. Marketing skills involves seeking out marketing opportunities and the ability to penetrate market in the midst of competition, timely and effective delivery of product, maintenance of customer loyalty and patronage to satisfy the needs of customers and to make profit. For instance, the curriculum may illustrate the use of advertisements and cooperative societies to market products, how to identify product seasons and how to distribute goods to those that need them. (Ombugus, *et al*., 2017)

Strategic Planning Skills: Strategic planning skills involve abilities in effective planning of investment opportunities considering the risks involved. It covers issues in problem identification, risk assessment, investment opportunities identification, decision-making and savings (Uza, 2017). It also includes environmental analysis skills and skills in effective application of science and technology. Such include skills in stock and financial planning, critical thinking, preparation and presentation of data in various forms, reading and interpreting maps, graphs, charts as a guide to investment opportunities and forecasts.

Communication Skills: An excellent entrepreneur needs solid communication skills. It's essential to sell vision to target audience and potential investors. Entrepreneur need to be clear, confident and patient when communicating. They can work on this skill in your professional and personal life. Communication skills are vital when leading a team, pitching your business, delegating tasks and many more situations as an entrepreneur.

Capability Skills: Capability skills to be developed for entrepreneurship success include the ability to locate customers, identify product seasons, negotiate for prices of goods, identify market functioning, keep records of sales, dressing etiquette and comportment, thrift savings and investment abilities, literacy and decision-making abilities.

Strategies for Developing Entrepreneurial Skills in Science and Technology Education for Poverty Alleviation

Various strategies could be implemented to develop reliable entrepreneurial skills among undergraduates of science and technology education programmes. Such strategies are practical oriented. These strategies are thereby classified into in-class and out-class. The in-class strategies are those that are meant to take place in the laboratory or classroom while the out-class are those that the students would have to experience outside the classroom. The in-class strategies are the pragmatic teaching techniques such as innovation challenge, demonstration and role-play. While the out-class strategies includes field trips (excursion), internships, project method and proper monitoring during industrial training. (Ombugus, *et al*., 2017)

Demonstration Strategy: This involves any planned performance by an instructor on an occupational skill or information aimed at explaining the steps involved in carrying out an operation. This is a basic strategy for introducing new skills to the students aimed at showing how a process, procedure or experiment is to be carried out. This is teaching by doing as evidence or proof of a claim. In entrepreneurship training, the teacher demonstrates as students do same under supervision.

Role Plays Strategy: This is when members of a group, either individually or in smaller groups act as a role in a given situations to demonstrate ideas. It is very effective for skill acquisition in entrepreneurship as it appreciates and demonstrates actions necessary for success or failure of given projects. Role play stimulates active participation of learners and gets them involved in activities required for successful entrepreneurship as they will meet in their established enterprise after graduation. The facilitator should effectively direct learners earlier before the role play by explaining the objectives of the lesson. This makes learners more interested in the educative aspect of the play than the entertainment. A discussion session is also held at the end of the role play to highlight the major experiences and knowledge required to be acquired, (Anho, 2019).

Explanation Strategy: This entails imparting skill in conjunction with almost all other methods of teaching method. Concepts in entrepreneurship are first explained and followed by the actual practical activities. For instance, in impartation of skills on how to start an automobile engine, the concept of automobile engines and how they function is first brought to the knowledge of the undergraduates. The use of explanation as a

strategy to impart skills among students start with what the student is familiar with and then proceed towards the desired goal. This is done by explanations, moving from simple to complex concepts. This is further followed by demonstration by driving the engine as practical example. The material to be presented should be properly understood. The instructor should also ensure that explanation giving arouses the interest of students and does not dampen that which already exists. To make the strategy more effective, explanation should be as simple as possible with words that are relevant and simple to understand. Unfamiliar trade or technical jargons should be well explained.

Lecture Using Buzz Group: Lecturing is the most commonly used method of teaching especially when the facilitator has a wide area of knowledge to cover to a large number of people within a short period. Imparting skills with lecturing as a strategy in entrepreneurship education is very effective if the undergraduates are divided into smaller groups and organized to talk, lecture and present shared topics in turns to the entire class. The use of buzz groups engage undergraduates in discussion to bring in their own life experiences and to make them active participants in the teaching/learning process, (Paul, 2015).

Questioning Strategy: This is a strategy that exposes undergraduates of science and technology to the unknown as a stimulus-response technique for confirmation of ideas. This is adopted when learners are reluctant to contribute to discussion or are bored during talk to make them participate effectively. The educator could equally raise issues or fact-finding tasks in entrepreneurship and instruct learners to form groups for discussion. These groups later come together again after trashing the issues out, at the expiration of allotted time to give reports. This strategy makes the students active participants in the learning process especially in acquisition of practical knowledge and skills. Questioning is a strong skill development strategy as it stimulates critical-thinking in students and elicits responses that will lead to the proper solution of entrepreneurship problems, (Sambo, 2020).

Innovation Challenge Strategy: Also known as innovation competitions or ideas challenges, the essence of this strategy is to motivate students to develop and invent new solutions, plans of action, or even products. The best ideas are then appreciated, applauded and rewarded. By doing this, students would be motivated to bring up creative ideas that could provide solution to contemporary problems in the society and the nation at large.

Internship Training Strategy: Internship Training in the provision of entrepreneurial skills to undergraduates of science and technology education entails collaborations between schools and industries for real life work experience. This form of collaboration is necessary after exposing students to theories and concepts in science and technology education programmes and attached to industries where they are expected to practicalize the knowledge acquired. Effectiveness of internship as a strategy for developing science and technology education undergraduates entails proper planning, timely posting, organization, proper implementation, monitoring and effective supervision. To enable students practicalize the skills taught, they must be fitted in establishments that provides services in their areas of study and with adequate facilities, equipment and machines to work with. This will help them establish such small-scale enterprises to become self-reliant after graduation.

Proper Monitoring of Student during Industrial Training: The essence of the students' industrial work experience is to enable students attain the necessary practical knowledge and skills related to their course of study. However, if these students are not closely monitored throughout the training period, they might not eventually achieve the main objectives.

Field Trips to Industries: Field trip strategy in the development of entrepreneurship skills among undergraduates entails organizing educative visits to successful establishments, entrepreneurs or institutions for first-hand information. Field trips are made effective when well organized and combined with teachings that are in line with the concrete and direct learning experiences provided. At the end of the trip, students are engaged in group discussion to make sure that the aim of the trip was achieved, (Jhingan, 2017).

Project Method Strategy: This method facilitates acquisition of entrepreneurial skills among Science and Technology Education undergraduates through application of knowledge in solving problems with little direction of the educators. Students are allowed to explore their environment and based on their areas of interest embark on projects that aims at showcasing their ingenuity and skill acquired in entrepreneurship. The projects may be suggested by the teacher, but they are planned and executed by the undergraduates themselves, individually or in groups within the period directed by the educator. Project method as a strategy improves student involvement and

motivation in order to foster independent thinking, self-confidence and social responsibility, (Omolayo, 2016).

Conclusion

Developing entrepreneurial abilities in Science and Technology education is essential for empowering undergraduate students and creating independent Nigerian young who can start their own businesses to reduce poverty in the nation.

Nigerian education curricula at all levels should focus on fostering entrepreneurial abilities among her undergraduates during training to equip them for constant improvement and development of the economy as entrepreneurs are agents of social and economic change. If skill development and entrepreneurship education are supported and pushed rather than encouraging young people to look for white-collar professions, many individuals will be able to overcome poverty. The education sector needs to concentrate more on entrepreneurship education and skill development because these topics promote financial independence, problem solving and are essential for preparing students for the workforce. The key to raising the standard of life in Nigeria lies in the educational system's capacity to give young undergraduates the information, skills and competences necessary for entrepreneurship. Youth unemployment and poverty rates are low in countries that place high priority on skills development. The strategies mentioned above when implemented carefully and skillfully by experienced instructors are going to yield the expected results in the students.

Recommendations

The study recommend that;

1. The Innovative and Continuous training and retraining in contemporary teaching strategies for fostering entrepreneurial abilities in students should be offered to Science and Technology educators.
2. Undergraduate of Science and Technology students should be the core of the entrepreneurship education process, not the teacher.
3. As part of Science and Technology Education programs at Nigerian universities, the curriculum for entrepreneurship education should be reviewed frequently. The

learning opportunities offered ought to be in line with what society and the job economy currently want.

4. The teaching of Science and Technology Education undergraduates should take place using facilities that are adequate for effective instruction and the transmission of entrepreneurial skills; hence STE programs in Nigerian universities should receive adequate funding.
5. The partnership between businesses and schools should be improved in terms of providing students with real-world work experience. This will assist the undergraduates in learning how to operate machinery and other tools, which they will likely use after graduation for either unpaid or paid jobs.
6. Performance-based evaluations should be used in entrepreneurship education to measure the effectiveness of the curriculum. This is done to ensure that undergraduates are learning new skills and to inspire them to do better.

References

Adetayo, O., Oke, A., & Aderonmu, O. (2015). Assessment of entrepreneurship education and employment generation among university graduates in Nigeria. *European Journal of Business and Management*, 7(23),136-143. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.735.5310&rep=rep1&type

Agommuoh, P. C., & Akanwa, U. N. (2018). Senior secondary school physics teachers assessment of entrepreneurial skills needed for global competitiveness. *Journal of Research and Method in Education*, 4(1), 25-29. https://www.iosrjournals.org/iosrjrme/papers/Vol-4 Issue-1/Version-5, 150 - 165.

Agommuoh, P. C., & Ndirika, M. C. (2017). Strategies for promoting entrepreneurial skills in science education students for poverty eradication. IOSR *Journal of Research & Method in Education*, 7(3), 45-49. https://www.iosrjournals.org/iosr-jrme/papers/Vol-7 Issue3, 70 - 85.

Akinbobola, A. O., & Ikitde, G. A. (2018). Entrepreneurship education among Nigerian senior secondary school physics students in the concept of electrical installations. *IRCAB Journal of Art and Education*, 2(1), 132–139. https://lasu.edu.ng/publications/education/solomon_olanrewaju_makinde_ja_57.pdf

Akintoye, O.H. & Adeyemo, S.A. (2018). Career prospects in Physics education in a quest towards entrepreneurial skill Development. *Research Journal of Social Sciences*,1(6),1-5.

Anho, J. E. (2019). Impact of entrepreneurship education and training on university graduates for sustainable development. In E. A. Arubayi, N. E. Akpotu, & E. P. Oghuubu (Eds.), *A book of reading: Education and training for entrepreneurship.* ASCONT.

Araba, S. (2018). Entrepreneurial education as a tool for reducing unemployment in Comfort O. C and Bonaventure O. C. (2013). Student's entrepreneurial skill acquisition through Students Industrial Work Experience Scheme (SIWES) in Nigeria. An analytical approach. *International journal of independent research And studies. 1(3),* 97-105.

Curran J. & Stanworth, J. (2015), Education and Training for Enterprise – Some Problems of Classification, Education Policy Research, *International Small*

Business Journal, 7, http://www.idrc.ca/en/ev-30793-201- 1-D0TOPIC.html, 22 – 38.

Ekong, U. M., & Ekong, C. U. (2016). Skills acquisition and unemployment reduction in Nigeria: A case study of national directorate of employment in Akwa Ibom State. *International Journal of Economics and Management Sciences*, *5*(4), 1–10.

Ekpe, I., Razak, C. R., Ismail, M. & Abdullah, Z. (2015). Entrepreneurial skill acquisition and youth's self-employment in Malaysis: how far? *Mediterranean Journal of Social Sciences, 6(4),* 150-154.

Esomonu, N.P.M. (2018). Assessment of the Implementation Strategies of Poverty Eradication Programme in Nigeria *Journal of Women in Colleges of Education,* 6(1) 311-318.

Eze, S. U., Akam, G. U. & Okeke, M. C. (2022). Entrepreneurial skills acquisition and human capital development of state university's students' in South-East Nigeria. *International journal of research and innovation in social sciences, 6(12),* 571- 578.

Fabunmi, M., & Isah, E. A. (2019). Managing schools in a period of global economic meltdown. *European Journal of Social Science*, *8*(4), 653-664.

Gana, J. S. (2011). *Entrepreneurship*. Kaduna: Jofegan Associates.

Godwin A. G., Okwuolise, Chike, A. Eheli, Henri U. Anih (2019) *Entrepreneurship in Vocational Education.*Enugu: OZYBEL Publishers.

Hassan, O. M. (2018). Curbing the unemployment problem in Nigeria through entrepreneurial development. *African Journal of Business Management*, *7*(44), 4429-4444.
https://academicjournals.org/article/article1390925779_Hassan.pdf

Hirsrich, R.D., Peter, M.P. (2017), *Entrepreneurship*. New York: McGraw Hill. http://enropa.en/legislation_summaries/education_trainingyouth/general_framework/n2.

Igbo, C. A. (2006). Developing entrepreneurship through entrepreneurship education. *Journal of Home Economic Research, 7*, 50-54.

Ikeme, A. & Onu, V.C. (2017), Creativity, Innovation and Entrepreneurship: Implications for NigerianYouths and Government. *Paper Presented at the*

Annual Conference of the Nigerian Psychological Association, University of Nigeria, Nsukka.

Jhingan, F. (2017). Education and sustainable national development in Nigeria: Challenges and way forward. *Mediterranean Journal of Social Sciences,* 4(8),147-158.

Mkala, D. M. & Wangua, K. (2013). Transforming implementation of entrepreneurship Education programme in technical training institutions in Kenya. *European journal of business and innovation research. 1(3)*, 18-27.

Ogunode, N. J. & Onize, A.M. (2022). An Analysis of Challenges Facing Funding of Public Universities in Nigeria. *European Multidisciplinary Journal of Modern Science,*(8), 77-88.

Ogwo, B. A. (2016). Gender Differential effects on metal earning instructional strategies on students' achievement in metal technology. *Journal of Vocational andAdult Education*. 5(1) 2-11.

Ojeifo, S. A. (2018). *A Hand Book on Entrepreneurial Development in Nigeria.* Ekpoma: Emmasco Printers.

Okafor, C. F. (2018). Science education: A tool for skill acquisition and entrepreneurship development of Nigerian students. *Nnadiebube Journal Education in Africa, 3*(2), 19–29. https://acjol.org/index.php/njea/article/view/608

Ombugus, D. A. & Umaru, R. I. (2017). Entrepreneurship skill acquisition for wealth creation of youths in Agidi development area, Nasarawa State. *International journal of academia*. *4(1),* 1-11.

Omolayo, B., (2016). Entrepreneurship in theory and practice. In Omotosho, F., Aluko, T.K.O., Wale-Awe, O.I. & Adaramola, G. (Eds.), *Introduction to entrepreneurship development in Nigeria.* UNAD Press

Onyeaghala, O. H. & Okorie, G. (2018). Efficacy of entrepreneurial skills acquisition: A study of Nigerian University graduate entrepreneurs in Kano and Lagos Metropolis. *International journal of managerial studies and research, 6(5),* 9-20.

Paul, E. O., Ezema Priscilla N., Amoke Beatrice O., (2015), Entrepreneurship Education in Nigeria Education

Sambo, S. P. (2020). Educational Investment Channels and Technical Skills: Panacea of Sustainable Development in Nigeria. *Published jointly by KSU and ANAN,*

4(1), 72-85.

Sarah Negebu, (2021) The Need for Entrepreneurship Education in Nigeria Universities – blogcomments powered by AISQUS back to top.

Uza A. U. (2017). Importance of Science Education to National Development and Problems Militating Against Its Development. *American Journal of Educational Research,* 1(7), 225-229.

Wibowo, A. S, Saptono, A. & Suparno, C. (2018). Does teacher's creativity impact on vocational students' entrepreneurial intentions? *Journal of entrepreneurship education. 2(3),* 1-12.