

Teaching Science Education in Nigeria Universities for Innovation, Group Collaboration, Job Creation, Accessing Bank Loans and Creative Society for Young Inventors

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Annotation: This paper examined the necessity for teaching science education in Nigeria universities for innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors. It maintains that universities should be robust institutions where students will be able to diversify their knowledge into creativity and innovation. It also emphasized that innovation and creativity are driving forces to productivity which involve applying creative ideas to practical solutions and bringing them to market implementation. It links innovation and creativity to valuable assets and skills that could be fostered and developed in individuals and within institutions. The paper buttresses on need for collaboration among science education postgraduate students as it has a way to encourage innovation and creativity, that is when individuals with a diverse range of skills and backgrounds come together, it leads to the exchange of unique perspectives and ideas. It emphasizes aims to prepare the mindset of postgraduate students during the course work towards innovation and creativity, to set a pace for job creation for the present and future generations. And seeks the supports of banks with access to loans for set-up capital among others. Therefore, conclusion was made that teaching science education in Nigeria universities optimizes innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors. Thus, the paper recommends among others that, postgraduate students should as a matter of urgency be schooled to perceive science education in Nigeria universities as relate to innovation and creativity and should be helped to see knowledge as a products and services.

Keywords: Science Education, Innovation, Group Collaboration, Job Creation, Accessing Bank Loans, Creative Society and Young Inventors.

1.0 Introduction

Teaching science education is a driving force for changing the narratives of the society towards science education policy on job and labour engagement. While ensuring industrial revolution, strategic planning for innovation and creative society should be put to task ahead. If not, our graduate may remain as good as redundant in the labor market rather than be of useful engagement. This was a task that the Federal Government in collaboration with the National Universities Commission, (NUC) presented to Nigeria Universities for immediate reaction and action in 2022. The commission has mandated all Institutions to add Core Curriculum and Minimum Academic Standards for the Nigerian University System (CCMAS) to their curriculum. However, among the ten unique features in the CCMAS for Education, is the accent on entrepreneurial skills to broaden the horizon of employment of education graduates within and outside the school system, (NUC, 2023). Also, financial institutions in Nigeria led by the Bank of Industry have present opportunities to logical and innovative entrepreneur among Nigeria graduates to come up with suitable proposal and evidence of their involvement skills as mean to access loans. Nevertheless, the term group collaboration remains unpopular and silent among Nigeria graduates as a means for jobs creation, this

weakens their force to develop forcefully projects to come about laudable inventions and to create and preserve frameworks for the younger ones to copy.

Thus, job creation that supposed to originate from group collaboration and other involvement of Nigeria graduates suffers from their negligence and resulted to massive unemployment yearly among the graduates, with the evidence of other depressive acts of jobless individuals. Science education students need to have a reasonably secure base of knowledge and skills to draw on. Kamyliis and Berki (2014) said science is not only a body of knowledge to be learned and understood, but it also represents a powerful method in identifying and solving problems with a significant creative component. Well-planned, structured enquiry is fundamental to science teaching as it reflects the scientific method: curiosity based on existing knowledge, hypothesis formulation, systematic observation, measurement, and experimentation leading to new insights. A deep understanding of the scientific method provides powerful knowledge to students, preparing them for further study in science and helping them to understand applications beyond science.

Ndayebom & Aregbesola, (2023) said university education is a place where the students are majorly prepared for the society, labour forces and research to cover new grounds. This means that universities should be robust institutions where students will be able to diversify their knowledge into creativity and innovation. Knowledge is a huge amount of capital that the bank could not save, it builds a mental framework where money could be generated endlessly. Teaching science education today in the universities should be re-fertilized for greater productivity to abolish lack of prestige, unemployment, and low commitment to research. Innovation according to the United Nations Education Science and Cultural Organization (UNESCO) in David (2018), is a general change that is deliberate and must never be regarded as simple adjustment. Continuing, UNESCO added that innovation refers to any persistent change in the patterns of behavior of members of an identifiable social system.

It is a novel departure from a customary practice that can be sustained for some time which is situational and relevant to a group in time and place, and when widely adopted, it becomes a reform. It implies that universities should begin to advance creativity and innovation as a measure for students to become graduates. While creativity is a complex and multifaceted cognitive and behavioral process that involves generating innovative and valuable ideas, solutions, or expressions. It's a fundamental aspect of human intelligence and has been a subject of interest across various fields, including psychology, neuroscience, education, and business. Aregbesola, (2023) noted that science students need to be at the center of their leaning activities and be fully participated in every step to ensure productivity. Creativity is also a dynamic and valuable process that involves generating original and valuable ideas or solutions. It is a skill that can be cultivated and harnessed in numerous ways, and it is integral to human innovation, problem-solving, and progress. in various fields and endeavours. It is a skill that can be important to recognize that creativity is not limited to selecting few but is capacity that could be nurtured and developed through practice, curiosity, and a willingness to embrace uncertainty. Encouraging creativity in education, the workplace and everyday life could lead to innovative solutions, enriching experiences, and personal growth.

Statement of Problem

Despite the call for innovation and creativity among nations in which Nigeria as the giant of Africa features, the drive remains on the low key among the Nigeria graduates. There is still high crave for white collar jobs which are limited to cater for the needs of thousands of graduates' year-in-year-out and this has continued to pose a huge problem to the society. According to Mpanju in Lyatamila (2016) there is a mismatch between teaching in the institutions of learning and the needs of the labour market. It also shows that majority of students learn through lectures and academic textbooks and are academically sound, but they have limited opportunities of acquiring practical experience which function for the pathway of innovation and creation. The challenge of graduates unemployment has become critical issue to the economy and due to the increased population explosion in formal higher institutions across the country and the present global economic recession or meltdown which can no longer

be ignored in our environment The problem of graduate unemployment as it were, has been generally believed to be due to the nature of knowledge acquire for innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors. This implies that the future of any nation lies in her youths and whenever such is wasted, it becomes practically impossible for such a country to take her rightful place in the comity of nations and by extension increase in crime rate and loss of peace and tranquility will be enhanced. Therefore, this study seeks to examine teaching science education in Nigeria universities for innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors.

Research Objectives: The objective of this study is to assess teaching science education in Nigeria universities for innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors.

Research Questions:

1. How do postgraduate students perceive the science education in Nigeria universities in relation to innovation and creativity?
2. To what extent does group collaboration mandated for postgraduate students during classroom activities in Nigeria universities?
3. What is the significant of job creation mindset for postgraduate students in Nigeria universities?
4. To what extent do Nigeria universities postgraduate students have access to bank loans towards innovation and creativity?
5. What significant is creative society for postgraduate students towards innovation and creativity in Nigeria universities?

2.0 Literature Review

Teaching Science Education in Nigeria Universities

Teaching science education today in Nigeria Universities is beyond the reach of scoring high grades, while high grade is fantastic and wonderful much more is the ability of respective graduate to turn his/her school grade to productivity. In the real sense education is for transformation, change and efficiency. Ojelade, Aregbesola & Haastrup, (2022) advocated that there is a concern for student's critical thinking, skill development involving problem-solving, performance and the application of acquired skills for entrepreneurship. According to invention.si.edu, the greatest declines in creativity among the youngest age groups suggest that the younger children are more harmed by American test-centric education, "Similarities between American high stakes testing, and Asian exam hell have appeared, especially in early childhood education. This indicates that increasingly fewer American innovators will emerge. The longer test-centric education continues, the more we will see creativity and innovation decline." This statement suggests that there should be a major shift in teaching and learning generally for institutions all over the world today, as the space for white collar jobs become more narrower daily due to many factors among which technology (Robots, Simulations, AI, etc.) is leading amidst terrorism, pandemics, and disasters.

Teaching science education has become an invaluable instructive activity directed at promoting individual capability, competence, and creativity for effective living in a global society. Ojelade, Aregbesola, Olatunde-Aiyedun & Haastrup, (2022) noted that tertiary education portrays a standard that graduates should contribute towards national development through high level relevant manpower training that they have acquired. According to Lewis, (2015) science education identifies natural phenomenon appropriate to child's interest and skills. This implies that science education equips graduates with knowledge, skills, and freedom to perform noble task useful for improving socio-economic standard. Thus, the goal of science education is to produce a sufficient number and

diversity of skilled and motivated future scientists, engineers, and other science-based professionals. It is eminent to note that, gap exit between academic and practitioner in science education within Nigeria, this means teaching science education must be structured to bridge the gap so to foster develop creative mind-set among the graduates. Science Education involves the inculcation of scientific literacy that enables the citizens of a nation to utilize the physical resources they must improve their quality of living. It is also an educational system that prepares citizens of any nation for a successful integration in the society; it sharpens their quest for further knowledge and enables them to meet their necessities of life such as food, shelter, health, etc. It promotes industrialization, frees them from fears and superstition while promoting law and order in the society which culminates to promoting National security (Uyanga, 2016).

It is obvious that at a time like this Nigeria requires science education graduates that can utilize critical thinking, functional knowledge, and scientific literacy to meet the need for creativity, industrialization, and innovation. Nations around the world consciously and aggressively work on science education curriculum reform to suit the present and the future need of the citizens. Apparently, Nigeria is dear need of functional science education in line for productivity and creativity. According to Kampylis and Berki (2014), 'creative thinking is defined as the thinking that enables students to apply their imagination to generating ideas, questions and hypotheses, experimenting with alternatives and to evaluating their own and their peers' ideas, final products and processes.'

Nigeria Graduates and Innovation and Creativity

Apparently, the world at large looks for inventors, great idealists and talented young innovators who can move the world not to a pulse, rather constantly driven with their capabilities and knowledge for advancement and to also lay legacy for the upcoming ones. Nigeria Universities among others continue to play a major role in human development and bridging the gap for creative societies. David, (2018) said that innovations in education therefore are new, creative ideas which are meant to bring effectiveness and change to the educational sector. They can simply be said to be the new things in the educational sector meant to bring more efficiency and effectiveness. While Aregbesola, (2023) said that innovation and creativity are driving force to productivity which involve applying creative ideas to practical solutions and bringing them to market implementation. She further posited that innovation is a valuable skill and mindset that can be fostered and developed in individuals and within institutions. It often requires an environment that encourages collaboration, risk-taken and brain storming. Innovation leads to breakthroughs, new inventions, and advancement of knowledge and culture. Innovation, according to Abdulraheem (2015) means the new changes which a country must undergo to become useful to herself and to the outside world.

These tendencies have led to accreditation of many disciplines in line of science education in various institutions across the country both public and private. Education per say is not just for reading and writing but training and retraining of the mind towards progressions and creativity. We are in the era where just white-collar jobs do not take the surety; it only bears names of the profession but what really bring people to the limelight is their contribution towards advancement-innovation. Nigeria has come to the place of prosperity through productivity and innovation assumes the baton to champion the race. Innovation has been defined according to the United Nations Education Science and Cultural Organization (UNESCO) in David (2018), is a general change that is deliberate and must never be regarded as simple adjustment. Continuing, UNESCO added that innovation refers to any persistent change in the patterns of behavior of members of an identifiable social. Also, innovation can be defined as the art of bringing one's creative ideas to change narrative or tradition of doing things, that is delivery a dynamic pattern for creating things- novelty.

In the same vein, innovation is the ability to create and re-create models which fit into institutions, organization, parastatal, companies, and privates' practices towards the advancement of the nation at large. Educational institutions across the globe have been accredited as the citadel of knowledge were productivities merge with

manpower and where the brain is being tasked to sweat for the benefits of everyone. Many products that the world enjoy today come as the result of students' project in higher institution and other individual involvement some of these top inventions of the last twenty-five here are: WIF, Smartphones, Online banking, Online banking, Online search-Google, Online shopping-Amazon, Online teaching- Simulation and AI, 3D printers, GPS, Modern electric car-Tesla model, IVF, Transfusion, Genetic Modified Food and Meat, etc.

Given that some degree of creativity and innovation can be taught, it might be worthwhile to see what is currently offered in the university setting. Since the concept of innovation has more recently been viewed as an opportunity for companies to gain a competitive edge, business schools have been adding research centers, classes, and entire majors in innovation to capitalize on the recent interest. However, the question remains as to whether the concept is being taught merely conceptually, or if students are applying it practically towards strategy and action. The pace of materialization is presently the need of today universities as to develop creativity and innovation among these young learners and the resultant for the society.

Group Collaboration

Group collaboration has been in existence as early as the world exist, this was the method that the greatest researchers, scientists, philosophers, traders, hunters and even farmers used to achieve their goals. It is a method that solicits teamwork, rationale, and participation to achieve the set goals and objectives. It fosters mutual understanding among peers and gives recognition to individual capability and strength within the group. Group collaboration also gains solid ground among academia, researchers, organizations, and individuals that would like to partner with friends and colleagues to achieve their objectives or projects as quick as possible. Universities with the acclaim to research bring student, lecturers, and researchers together most times to work together with the aim to make valued contributions to the outputs of others to assist one team or project to achieve the required outputs.

Moseley, (2023) said collaboration is when a group of people come together and contribute their expertise for the benefit of a shared objective, project, or mission. But collaboration isn't just a means to work together towards a common goal. It's also an excellent way to encourage innovation and creativity. When individuals with a diverse range of skills and backgrounds come together, it leads to the exchange of unique perspectives and ideas. This can result in more innovative solutions and creative problem-solving that may not have been possible with just one person working on the task. By leveraging the collective knowledge, experience, and expertise of team members, new and exciting ideas can be generated that an individual could not have thought of alone. Emphasizing collaboration can lead to a culture of innovation where everyone is encouraged to think outside the box and share their ideas and perspectives. Innovation and creativity are crucial for organizations and institutions that want to remain competitive and stay ahead of the curve.

Fig 1: Diagram showing effect of group collaboration.



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Fig 1 shows components of group collaboration which constitutes actively working together in group, pooling talents, and leveraging collective strength to accomplish set objectives. Group collaboration in research also involves effective integration of each team members, skills, knowledge, and abilities. By prioritizing collaboration, institutions can foster an environment that encourages innovation and creativity, which can ultimately lead to greater success in the long run. In the broad sense group collaboration in research may be of help in many ways which include the following:

1. It helps to problem-solve.
2. It brings people (and organizations) closer together.
3. Collaboration helps people learn from each other.
4. It opens new channels for communication.
5. It boosts morale across your organization.
6. It leads to higher retention rates.
7. It makes us more efficient and meets up with target.
8. It creates room for competition, innovation, and certainty.
9. It abolishes idleness and laziness among team members.
10. It leads to new hypotheses, theories, and law.

Thus, the absent of group collaboration may be one of the major disadvantages that set Universities back today in Nigeria. While is good to give credit to the brain behind any project, it is much better to look at the long-time gain and its benefit to the society and venture into collaboration irrespective of disciplines or institution. Aregbesola, & Ojelade (2018) said that group collaboration among students helps to modify behaviour, enables to explore, appreciate, understand, and develop physical and social environment for gratification of their needs. This should be the “module operandi” among the students and the lecturers within various institutions. In the sense that professors and researchers should be ready to accommodate various talented researcher and students in their midst for mentorship and guidance. It should be noted that majority of products from the develop countries are group projects and assignment from various universities such as: Facebook, among others.

According to Lewis (2023) while there are a variety of approaches to fostering and improving team collaboration, there are a few agreed-upon best practices. Once a team is developed, each member should become acquainted with each other and understand their personal background, expertise, strengths, and responsibilities. Group collaboration activities can help members collaborate from the start. A team leader should also be chosen to lead by example, foster open lines of communication and facilitate meetings and tasks. It is great to know that creating a collaborative group takes time and effort, this is not to say it is an unforeseen task. Research needs all hands-on desk and ability to make mistakes and correct them over time until desirable or applicable results are obtained. That is, group members should be able to share all relevant information and pass on additional information that may be important to other team members. While carrying out research there, members are to encourages other team members to participate and facilitates when appropriate, and it is collaborative duties of professors, supervisors, researchers, and student to be actively supports and contribute to the efforts of other team members. This means that each member should be flexible and be able to work with a wide variety of different people on different tasks. Universities environment being civilized and cultured place, research should create a team spirit by speaking positively among one another.

Job Creation

The major economy melt down has twisted the job creation factors of every nation, Governments alone seem not capable to create jobs for millions of graduates that turn out of schools every year from both private and public universities cut across the nation. The job creation majorly for fresh graduates could be in form of small or medium enterprises where small capital and some form of assistants could played a role to start-up. Two out of three jobs worldwide are created by SMEs. In many developing economies, more than 50 percent of total employment creation in the private sector can be attributed to enterprises with less than 100 employees. In developed economies, SMEs generate 55 percent of GDP (ILO, 2019). SMEs also represent most economic units with over 90 per cent of the business population. In short, SMEs are a central economic and social force for employment, growth, and income levels across the globe. (ILO, 2019).

Table 1: Employment share by enterprise size and the self-employed Worldwide:

- i. Self-employed (1 person) represents 32.8 percent of total employment.
- ii. Micro- enterprises (2-9 persons) represent 23.1 percent of total employment.
- iii. Small enterprises (10-49 persons) represent 14.3 percent of total employment.
- iv. Medium and large enterprises (50+ persons) represent 29.8 percent of total employment.
- v. Overall, small economic units altogether account for 70 percent of total employment in a sample of 99 countries studied. Across the 99 countries in the sample, 62 percent of total employment is to be found in the informal sector.

Source: Small Matters: Global evidence on the contribution to employment by the self-employed, micro-enterprises and SMEs, ILO, (2019).

Table 1 reveals that the case of job creation is a critical aspect of economic development and social progress. It refers to the process of generating new employment opportunities within an economy. Job creation has several significant impacts and benefits:

1. **Reducing Unemployment:** The most direct benefit of job creation is reducing unemployment rates. When new jobs are created, individuals who were previously unemployed can find work and earn an income, improving their financial stability and quality of life.
2. **Economic Growth:** Job creation is closely tied to economic growth. As more people find employment, they have more disposable income to spend on goods and services, in turn, stimulates demand and economic activity. A growing economy often attracts investment and future job creation.
3. **Poverty Reduction:** Job creation can significantly contribute to poverty reduction. When individuals and households have access to stable employment, they are less likely to live in poverty or rely on palliatives.
4. **Skill Development:** New jobs often require training and skill development. This can lead to an improved workforce with higher skills and qualifications, enhancing the overall competitiveness of the labour market.
5. **Innovation and Entrepreneurship:** Job creation can be driven by innovation and entrepreneurship. Startups and small businesses often create jobs as they grow and expand their operations, contributing to economic dynamism.
6. **Social Stability:** High levels of unemployment can lead to social instability and unrest. Job creation can help maintain social stability by providing opportunities for individuals to participate in the economy and society.

7. **Tax Revenue:** As more people find employment and earn income, governments collect more tax revenue, which can be reinvested in public services, infrastructure, and social programs.
8. **Improved Well-being:** Having a job is not just about earning income; it also contributes to an individual's sense of purpose and well-being. Meaningful employment can improve mental and emotional health.
9. **Environmental Impact:** While not a direct benefit, job creation can also be aligned with sustainability goals. For example, the growth of green industries can create jobs while promoting environmentally friendly practices.

Policymakers, businesses, and organizations often focus on strategies and initiatives to stimulate job creation, recognizing their importance in economic and social development. These strategies may include investment in education and workforce development, support for small and medium-sized enterprises (SMEs), infrastructure development, and incentives for industries with high job creation potential.

However, job creation issue is not peculiar to Africa alone, but Nigeria to be specific still have low rate of job creation awareness which make the pressure of job searching high amidst the young adults and graduates. Charter, & Sedlacek, (2019) pointed that between now and 2030, Africa's working-age population is expected to grow by forty per cent to 1 billion, which implies that the rate of job creation must increase by around 12 million jobs per year to prevent unemployment from rising. However, the dawn of unemployment slightly encroaching and changing the game among young adults and graduates causing them to diversify into so many negative practices like yahoo-plus, cyber-crime, etc. The point of graduation and when to fix what to do is so crucial in the lives of every graduate, this season forms the bedrock for who they become in the society. And how society treat this aspect of young graduates and future leaders matter to what become of the society.

Accessing Bank Loans

Accessing bank loans as a graduate can be a valuable way to finance a starting business, all banks and financial institutions demand to know the purpose for the loan and the customer's credit history. It is important to note that bank loans come with responsibilities, borrowing should be done only when necessary and the mode of repayment should be clearly defined at the onset. Bank loans are soft ground for business to excel and the loan must be utilized judiciously. Nigeria graduates and the young adults are yet to harness this channel to startup businesses, may be due to some bottlenecks or bureaucracies alongside. Here is a general overview of the process and considerations for getting a bank loan for business:

1. **Determine the Loan Purpose:** Identify the specific purpose for which you need the loan, whether it's for startup capital, equipment purchase, working capital, expansion, or something else. Clear objectives will help you choose the right type of loan.
2. **Prepare a Business Plan:** A well-structured business plan that outlines your business model, financial projections, and repayment strategy is crucial when applying for a business loan. Banks will use this to assess your business's viability.
3. **Choose the Right Type of Loan:** Banks offer various types of business loans, SMEs loans, equipment financing, and more. Select the one that aligns with your needs.
4. **Evaluate Your Creditworthiness:** Your personal and business credit history will be a significant factor in loan approval. Ensure that your credit reports are accurate and demonstrate responsible financial management.
5. **Gather Financial Documents:** Be prepared to provide financial statements, tax returns, bank statements, and other relevant financial documents to support your loan application.

6. **Collateral and Guarantees:** Banks may require collateral or personal guarantees to secure the loan. This can be assets like real estate, equipment, or personal assets, depending on the loan type and amount.
7. **Shop around for Lenders:** Don't limit yourself to just one bank. Shop around and compare loan terms, interest rates, fees, and repayment schedules from different lenders to find the best fit for your business.
8. **Application and Underwriting:** Submit your loan application along with all required documentation to the selected bank. The bank will review your application, conduct credit checks, assess risk, and determine your eligibility.
9. **Loan Approval and Terms:** If approved, carefully review the loan terms, including interest rates, repayment schedules, and any covenants or conditions attached to the loan. Be sure you understand the terms before accepting.
10. **Loan Disbursement:** Once you've accepted the loan terms, the bank will disburse the funds to your business account. Ensure you use the funds for the intended purpose and in accordance with the loan agreement.
11. **Repayment:** Make regular and timely payments as per the loan agreement. Proper repayment helps maintain a positive credit history and may make it easier to secure future financing.
12. **Monitoring and Reporting:** Stay in contact with your bank and keep them informed of any significant changes in your business's financial situation. Maintain accurate financial records to report on your loan's progress.

Access to bank loans for business can be competitive and sometimes lengthy progress, it is essential to be well-prepared, have a strong business plan, and demonstrate the ability to repay the loan. Research involving West Africa has shown that the most noticeable sources of financing for SMEs are personal savings and credit supplies (Boateng & Abdulrahman, 2013). Nigeria's SMEs' difficulty in accessing finance from financial institutions is a key factor affecting their performances, which is why they do not make an adequate contribution to the country's economic growth and development. Financial institutions are also strict about verification of SMEs' loan applications (Avevor, 2016). Saari, (2020) also established that process of reviewing loan applications takes so long to complete that loans are delayed and issued when the purpose for the loan application most likely has expired. OECD, (2016) stated that overreliance on traditional bank lending is largely structural and will remain problematic. This is especially the case for start-ups and young companies, small businesses with a high-risk profile and companies in periods of transition, such as a change of ownership, spurts of growth or expansion into foreign markets. These firms find it particularly hard to access bank credit, and alternative sources of finance may often be more appropriate.

Creative Society for Young Inventors

It is high time for universities to graduate job creators than can drive and fly high in life. Universities are not just a place to read and pass but a seat of transformation and infusion into society. Graduates should know creative convergence depends on group collaboration and every successful investment/invention is strengthened by collaboration which form creative society. Creative society is a part of the university hidden curriculum for admitting students to academic environment. Assignment, test, practical and examination given to student is not to destroy them but to develop them in various aspect of life. However, it is pertinent to know that high elasticity is required of graduates for high performance in which their time and energy will be invested into different courses of study.

According to Small, et al (2015) they stressed that with today's growing emphasis in schools on curriculum, standards, and testing, it becomes increasingly more likely that students will develop a "good enough" mentality

in which they no longer stretch their imaginations, seek answers to questions that go beyond the curriculum, or allow themselves to explore the perplexing issues that pique their curiosity. Colangelo in Small, (2014) found that inventiveness is a talent not usually identified and nourished in the traditional curriculum of schools. Stokoe, (2012) has stated, as we grow up, we start believing the answers are more important than the questions. Yet adult creativity is still powerful; there is just not enough of it; it can be said that the creative adult is the curious child who survived.

Overview and situational analysis in Nigeria vision 20:2020 documents posited that “By 2020, Nigeria will have a large, strong, diversified, sustainable and competitive economy that effectively harness the talents and energies of its people (graduates) responsibly exploit its natural endowments to guarantee a high standard of living and quality of life to its citizen” (NV 20:2020 in FME, 2018). The document also stipulated among others that investment in human capital would require enhance national competitiveness. The vision considers education as both a basic human right and critical element in human development. NV20: 2020 rightly identified the needs to re-focus the country’s educational system in human development and funding among others (FME, 2018). Year 2020 has come and gone, many of the needs of Science and Technology for Nigeria are yet to be achieved and many hands should remain on deck to fulfill this laudable policy by Nigeria Federal Government through the Federal Ministry of Education, and this means, jointly creative society for young inventors should be built. While the governments work hard to play their role within the creative society, the ideology and mentality of Nigeria graduates and young adult towards creativity should be awoken to self-development, take responsibility and collaboration.

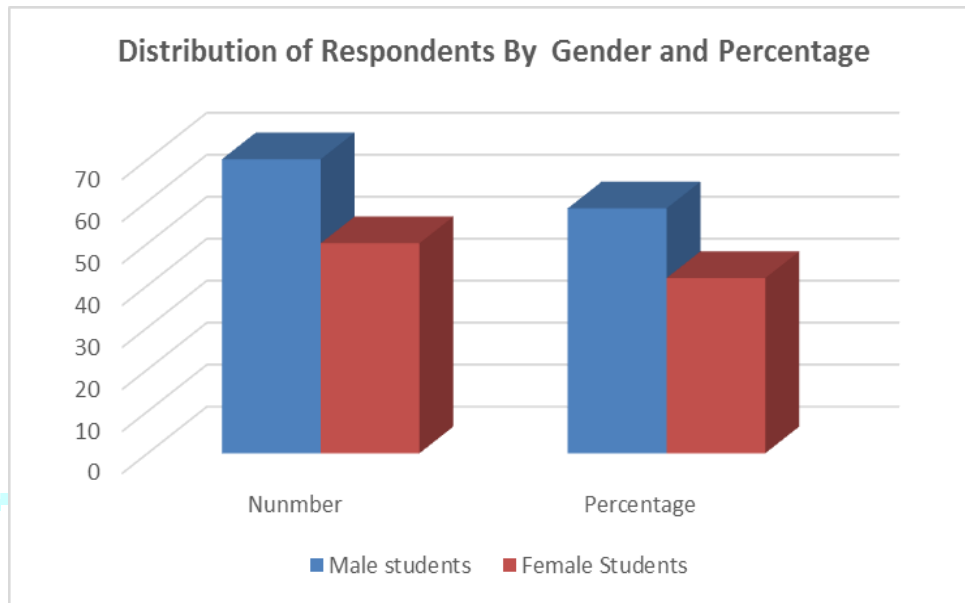
3.0 Methodology

The study adopted the descriptive survey design, this allowed this study to obtain information from the selected sample. According to Voxco, (2021) define descriptive survey design is an approach of descriptive research that blends quantitative and qualitative data to provide relevant and accurate information. A time-efficient research method, descriptive survey design engages the people at the center of the research objective. The sample size of the study was one hundred and twenty postgraduate (master) students studying science education from federal universities from six geopolitical zones, using sample random sampling technique. An innovation and creativity questionnaire, postgraduate students’ innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors’ questionnaire (IGJBCY) was developed and used for this study. The questionnaire had two parts: A constituted of demographic information (gender and institutions); while B constituted of five sections: I was on innovation and creativity with five (5) items; II was on group collaboration with five (5) items; III was on job creation with five (5) items; IV was on bank loan with five (5) items and V was on creative society with five (5) items.

The instrument was face and content validated by two measurement and evaluation experts and two science education lecturers, and their corrections were incorporated into the final state of the instrument before administration. The instrument was trail tested using 30 science postgraduate students who were not part of the study. Kuder Richardson (KR-21) was used to determine the reliability with 0.85 coefficient. One hundred and thirty (130) copies of questionnaires were distributed, while one hundred and two (120) questionnaires were retrieved from the students which were analyzed using the mean, and standard deviations.

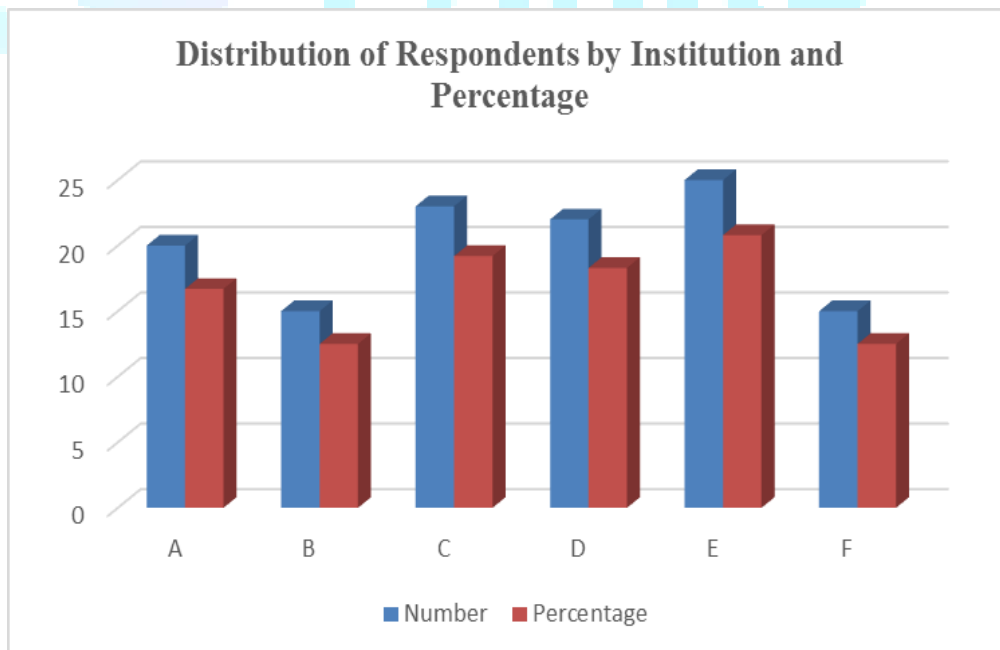
4.0 Results

Fig 2: The demographic data of the postgraduate students’ gender in the various selected federal universities from the six geopolitical zones.



The bar chart (fig 2) shows that seventy respondents representing 58.3% were male postgraduate students while the fifty respondents representing 41.7% of the sample were female postgraduate students. The total sample of the study was hundred twenty. Result of this analysis showed that the number of male postgraduate students were in the majority.

Fig 3: The number of the postgraduate students’ from each institution and percentage in the various selected federal universities from the six geopolitical zones.



The bar chart (fig 3) shows that twenty (16.7%) postgraduate students were from institution A; fifteen (12.5%) postgraduate students were from institution B. Also, twenty-three (19.2%) of the postgraduate students were from institution C; twenty-two (18.3%) postgraduate students were from institution D and twenty-five (20.8%) postgraduate students were from institution F another fifteen (12.5%) postgraduate students were from institution E. This shows that majority of the respondents were from institution E, followed by institution C, D, A, and followed by institution B and F.

Research Question One: How do postgraduate students perceive the science education in Nigeria universities in relation to innovation and creativity? To answer this question, frequency counts, means and standard deviations were used to analyze the data based on the items as shown on table 2.

Table 2: Analysis Perception of Postgraduate Students as related to Innovation and Creativity

S/N	Statements	Number	Mean	Standard Deviation	Decision
1	University creates a platform for innovation and creativity in science education by giving the opportunities to develop your career within the school environment.	120	2.43	1.00	Disagree
2	There are all necessary equipment, resources, workshops and seminars and scholarships to bridge gaps for innovation and creativity in science education.	120	2.22	1.00	Disagree
3	Exchange studies and consultations within institutions across the country were packaged along the study of science education at master level for innovation and creativity.	120	2.12	1.04	Disagree
4	Science education course contents packaged alongside course that could unveil diverse ideas of innovation and creativity.	120	3.00	1.06	Agree
5	Mode of lectures delivery have open up the indulgence of postgraduate students in science education.	120	2.42	1.00	Disagree
Sectional Mean/Std/ Deviation			2.44	1.02	Dosagree

Analyses on table 2 showed that most respondents disagreed that all the listed statements as regards their perception of postgraduate students as related to innovation and creativity except for item 4 where they disagreed. The overall mean for the items in respect of respondents from this section was 2.44 which indicated that the respondents are not in agreement with all the items.

Research Question Two: To what extent does group collaboration mandated for postgraduate students during classroom activities in Nigeria universities?

Table 3: Analysis on Group Collaboration among Postgraduate Students in Nigeria Universities

S/N	Statements	Number	Mean	Standard Deviation	Decision
1	Group collaboration is mandated during group assignment and individual students must be part of all the process.	120	3.30	0.98	Agree
2	The mode of teaching-learning process is basically learner-centered.	120	2.50	1.00	Agree
3	There are avenues to participate in workshops and exhibition during course work process.	120	2.85	1.20	Agree
4	Lecturers guide students to develop problem solving skills that lead to higher order cognitive levels.	120	3.60	1.00	Agree
5	There are rooms to collaborate with other colleagues from other institution in other to gain expert and gather relevant information.	120	2.34	0.91	Disagree
Sectional Mean/ Std/Deviation			2.92	1.02	Agree

Analyses on table 3 showed that most respondents agreed that all the listed statements assessing their level of group collaboration mandated for postgraduate students during classroom activities in Nigeria universities. However, they disagreed with statement on item 5. The overall mean for the items in respect of respondents from this section was 2.92 which indicated an overall agreement.

Research Question Three: What is the significant of job creation mindset for postgraduate students in Nigeria universities?

Table 4: Analysis Significance of Job Creation Mindset among Postgraduate Students

S/N	Statements	Number	Mean	Standard Deviation	Decision
1	Science education has paved way for job creation in the society.	120	2.63	1.10	Agree
2	There are multi-dimensional concepts or methods to course contents which are not narrow but broaden to open students up to job creation.	120	2.12	1.01	Disagree
3	Wide opportunities for driven science education companies to deliver innovative educational goods, procedures, and market models to empower student to compete with the increasingly global patrons for job creation.	120	2.11	1.00	Disagree
4	Science education has packaged it contents as a process, and products for economic grow of the nation which can be	120	2.00	1.01	Disagree

	transformed and repackaged for job creation.				
5	The course contents of science education have disrupted the usual routines and pressure of academic calendar leading job creation mindset among postgraduate students.	120	2.42	1.00	Disagree
	Sectional Mean/Std/ Deviation		2.26	1.02	Dosagree

Analyses on table 4 showed that most respondents disagreed that all the listed statements assessing their significant of job creation mindset for postgraduate students in Nigeria universities. Although, they agreed with statement on item 1. The overall mean for items in respect of respondents from this section was 2.26 which indicated that the respondents are not in agreement with all the items.

Research Question Four: To what extent do Nigeria universities postgraduate students have access to bank loans towards innovation and creativity?

Table 5: Analysis of Postgraduate Students Access to Bank Loans

S/N	Statements	Number	Mean	Standard Deviation	Decision
1	University creates a platform for students to have access to bank loans for innovation and creativity in science education.	120	2.44	1.00	Disagree
2	There are opportunities to promote science education contents and package them with the access to bank loans for innovation and creativity.	120	2.12	1.00	Disagree
3	There are avenues at which banks collaborate with postgraduate students to finance innovate concepts, that is using knowledge to solve nation’s problems with some time frame refund.	120	2.25	1.04	Disagree
4	Combining efficiency and productivity, couple with modern technologies postgraduate students can easily access bank loans for innovation and creativity.	120	2.75	1.09	Agree
5	There are provisions for soft loans to carry out research among postgraduate students in various Nigeria universities.	120	2.40	1.01	Disagree
	Sectional Mean/Std/ Deviation		2.39	1.03	Dosagree

Analyses on table 5 showed that most respondents disagreed that all Nigeria universities postgraduate students have access to bank loans towards innovation and creativity. Although, they agreed with statement on item 4. The overall mean for items in respect of respondents from this section was 2.39 which indicated that the respondents are not in agreement with all the items.

Research Question Five: What significant is creative society for postgraduate students towards innovation and creativity in Nigeria universities?

Table 6: Analysis Creative Society for Postgraduate Students

S/N	Statements	Number	Mean	Standard Deviation	Decision
1	University environment with adequate facilities for postgraduate students mirrors the wider creativity society where small-scale business for young inventors can flourish.	120	2.40	1.00	Disagree
2	There are various job fairs, trainings, workshops, seminars, and other forms of enlightenment that can further pave way for postgraduate students to learn and choose mentor on site as a creative society forum for starters.	120	2.02	1.00	Disagree
3	University community plays a key role in forming creative society and push postgraduate students forward towards innovation and creativity.	120	2.52	1.08	Agree
4	Science education course contents packaged alongside courses that could unveil diverse ideas of innovation and creativity.	120	2.75	1.10	Agree
5	The form of instructions delivery in science education classrooms have created avenue for creative society among postgraduate students even after school.	120	2.42	1.00	Disagree
Sectional Mean/Std/ Deviation			2.42	1.04	Dosagree

Analyses on table 6 showed that most respondents disagreed that all the listed statements as regards significant of creative society for postgraduate students towards innovation and creativity in Nigeria universities except for item 3 and 4 where they agreed. The overall mean for the items in respect of respondents from this section was 2.42 which indicated that the respondents are not in agreement with all the items.

Discussion of Findings

In this study, the researcher sought to examine teaching science education in Nigeria universities for innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors. Five research questions were raised and mean, and standard deviation were used to analyze the relevant data and the result in table 2 showed that most respondents disagreed that all the listed statements as regards their perception of postgraduate students as related to innovation and creativity except for item 4 where they disagreed. The overall mean for the items in respect of respondents from this section was 2.44 which indicated that the respondents are not in agreement with all the items. According to Aregbesola, (2023) emphasized that innovation and creativity are driving forces to productivity which involve applying creative ideas to practical solutions and bringing them to

market implementation. She further posited that innovation is a valuable skill and mindset that can be fostered and developed in individuals and within institutions. This finding is not surprising as David, (2018) saw innovations in education as new, creative ideas which are meant to bring effectiveness and change to the educational sector. They can simply be said to be the new things in the educational sector meant to bring more efficiency and effectiveness. Table 3 revealed that most respondents agreed that all the listed statements assessing their level of group collaboration mandated for postgraduate students during classroom activities in Nigeria universities. However, they disagreed with statement on item 5. The overall mean for the items in respect of respondents from this section was 2.92 which indicated an overall agreement. This corresponds to what Moseley, (2023) said, he collaboration is when a group of people come together and contribute their expertise for the benefit of a shared objective, project, or mission. But collaboration isn't just a means to work together towards a common goal. It's also an excellent way to encourage innovation and creativity. When individuals with a diverse range of skills and backgrounds come together, it leads to the exchange of unique perspectives and ideas. This means with group collaboration and participation of individual skill postgraduate students will do well in innovation and creativity.

Table 4 showed that most respondents disagreed that all the listed statements assessing their significant of job creation mindset for postgraduate students in Nigeria universities. Although, they agreed with statement on item 1. The overall mean for items in respect of respondents from this section was 2.26 which indicated that the respondents are not in agreement with all the items. However, Charter, & Sedlacek, (2019) pointed that between now and 2030, Africa's working-age population is expected to grow by forty per cent to 1 billion, which implies that the rate of job creation must increase by around 12 million jobs per year to prevent unemployment from rising. Thus, there is a need to prepare the mindset of postgraduate students during the course work towards innovation and creativity, to create a pace for job creation for the present and future generations. Table 5 revealed that most respondents disagreed that all Nigeria universities postgraduate students have access to bank loans towards innovation and creativity. Although, they agreed with statement on item 4. The overall mean for items in respect of respondents from this section was 2.39 which indicated that the respondents are not in agreement with all the items. Avevor, (2016) found that Nigeria's SMEs' have difficulty in accessing finance from financial institutions and this is a key factor affecting their performances, which is why they do not make an adequate contribution to the country's economic growth and development. Financial institutions are also strict about verification of SMEs' loan applications. Saari, (2020) also established that process of reviewing loan applications takes so long to complete that loans are delayed and issued when the purpose for the loan application most likely has expired.

Table 6 showed that most respondents disagreed that all the listed statements as regards significant of creative society for postgraduate students towards innovation and creativity in Nigeria universities except for item 3 and 4 where they agreed. The overall mean for the items in respect of respondents from this section was 2.42 which indicated that the respondents are not in agreement with all the items. According to Colangelo in Small, (2014) found that inventiveness is a talent not usually identified and nourished in the traditional curriculum of schools. And OECD (2016) emphasized that innovation and creativity in education is vital to bring improvement in education. They will improve the nation's efficiency and outcomes in learning quality and equity. According to OECD (2016) the main problems in education nowadays, its productivity and efficiency. Efficiency calculated by the utilization of the gap of capital expended and outcomes in student success and equity. Thus, creative society is significant for postgraduate students towards innovation and creativity in Nigeria universities which the curriculum considers as paramount.

5.0 Summary and Conclusion

Based on the study it is concluded that teaching science education in Nigeria universities optimizes innovation, group collaboration, job creation, accessing bank loans and creative society for young inventors. However, there is

need for stakeholders to integrating these variables properly into the course works to gear the mind of science education graduates towards labour markets for job creation and not for job seekers' mentality.

Recommendation

1. Postgraduate students should as a matter of urgency be schooled to perceive science education in Nigeria universities as relate to innovation and creativity and should be helped to see knowledge as a products and services.
2. In term of group collaboration, science education postgraduate students should be mandated during classroom activities in Nigeria universities to form various groups that could further help in teamwork, partnership, and cooperation as to function as SMEs and Medium Enterprises after graduation.
3. All science education postgraduate students should be given opportunity through sponsorship to workshop and seminar organized for job creation mindset.
4. Banks should partners with creative science education postgraduate students' in order access to bank loans towards innovation and creativity, to help those with viable business ventures overcome continuing difficulties in obtaining bank loans and moderate the interest rate particularly for graduates.
5. Opportunities should be created with the society for postgraduate students towards innovation and creativity and curriculum that speaks volume on innovation and creativity is urgently needed for universities Nigeria.

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