Vocational Skills Acquisition and Entrepreneurship Development among Building Technology Students in Akwa Ibom State Technical Colleges

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Abstract
Youth unemployment in Nigeria remains a major socio-economic challenge despite the proliferation of technical colleges and vocational institutions. Vocational skills acquisition and entrepreneurship development have been identified as key strategies for fostering self-employment and economic empowerment among graduates. This study examined the relationship between vocational skills acquisition and entrepreneurship development among 120 Building Technology students in Akwa Ibom State Technical Colleges. A descriptive survey design was adopted. Data were collected using a structured questionnaire and analyzed using mean, standard deviation, regression analysis, and independent samples t-test. Findings revealed that students reported high levels of both vocational skills and entrepreneurship development. Vocational skills acquisition significantly predicted entrepreneurship development ($\beta = 0.48$, $t = 5.72$, $p < 0.05$), and students with high vocational skills exhibited significantly higher entrepreneurship development than those with low skills ($t = 4.31$, $p < 0.05$). The study concluded that technical competence enhances entrepreneurial readiness, and recommended that technical colleges integrate practical business training and mentorship programs to improve students' self-employment capacity.

Keywords: Vocational skills, Entrepreneurship development, Building Technology

Introduction

Youth unemployment in Nigeria has emerged as one of the most pressing socio-economic challenges facing the nation. Despite the proliferation of higher institutions and technical colleges, a significant number of graduates remain unemployed or underemployed, raising concerns about the effectiveness of the Nigerian educational system in preparing learners for self-reliance and sustainable livelihoods. Vocational and technical education (VTE) has therefore become a crucial strategy for addressing this gap, as it equips individuals with practical and entrepreneurial skills that enable them to create jobs rather than depend solely on paid employment (Nwogu, 2020). The above assertion is supported by Ntegwung and Iyagbaye (2022) who opined that TVET aims at producing individuals with creative skills needed for entrepreneurial development and self reliance.

Vocational skills acquisition involves training individuals to develop competencies in specific occupational areas such as carpentry, plumbing, electrical work, and building technology. These skills provide the technical foundation necessary for developing productive and creative capacities, which are essential for national growth (Oviawe, 2018). In the context of Building Technology education, vocational training extends beyond manual dexterity; it encompasses design interpretation, project management, material estimation, and basic entrepreneurial knowledge. Such competencies are critical for producing graduates who can either be gainfully employed in the construction sector or establish their own businesses.

Entrepreneurship development entails the cultivation of attitudes, competencies, and behaviors that motivate individuals to identify and exploit business opportunities. Schumpeter (1934) describes entrepreneurship as

a process of innovation and creative destruction that drives economic development. In technical and vocational contexts, entrepreneurship is not only about starting a business but also about the ability to adapt, innovate, and sustain enterprise growth. Linking vocational education with entrepreneurship training enhances students' ability to translate technical know-how into viable economic ventures (Aina, 2022; Adebayo & Yusuf, 2022; Akpan, 2023). The relationship between vocational skills acquisition and entrepreneurship development is well documented in literature. Salihu and Bello (2021) found a significant correlation between vocational competence and entrepreneurial readiness among technical college students in Northern Nigeria. Similarly, Ugwu and Ogbu (2021) observed that students who received hands-on vocational training were more likely to develop business ideas and pursue self-employment after graduation. These findings suggest that vocational education serves as a fertile ground for entrepreneurial development, particularly when supported by adequate infrastructure, mentorship, and policy frameworks. According to Ntegwung and Njoku (2022), Vocational and Technical Education is aimed at making individuals well-armed with skills and knowledge to enable them secure employment either by establishing a small-scale outfit or by being gainfully employed thereby utilizing their skills, abilities and competencies.

However, challenges such as inadequate facilities, outdated curriculum, lack of qualified instructors, and insufficient exposure to real world business practices have limited the effectiveness of vocational training in Nigeria (Federal Republic of Nigeria, 2014; Nwafor & Eze, 2021). Many technical college students acquire basic trade skills but lack the entrepreneurial orientation necessary to convert these skills into sustainable ventures. As Ross (2024) explained through the lens of Human Capital Theory, investment in skill development must be accompanied by entrepreneurial capacity building to yield meaningful economic returns.

In Akwa Ibom State, technical colleges play a vital role in equipping students with vocational competencies in Building Technology and related fields. Yet, despite these institutions, unemployment among graduates persists, suggesting that vocational skills acquisition alone may not guarantee entrepreneurship development. This raised important questions about how effectively vocational training prepares students for entrepreneurial success. Previous studies in Nigeria have largely focused on skill acquisition, employability, and general educational outcomes. Few have specifically examined the relationship between vocational skills and entrepreneurship development among Building Technology students, particularly in the South-South region. This gap in literature underscores the importance of the present study, which aims to provide empirical evidence on how technical and entrepreneurial competencies interact to shape students' readiness for self-employment. By investigating both vocational skills acquisition and entrepreneurship development, this study contributes to ongoing efforts to enhance the relevance of technical education in addressing unemployment and fostering sustainable economic growth.

Statement of the Problem

Technical Colleges in Nigeria were established to develop skilled manpower capable of contributing to national growth through employment and entrepreneurship. In Akwa Ibom State, Building Technology students are expected to acquire construction-related competencies such as drawing, measurement, masonry, carpentry, and finishing that should enable them to work independently or start small-scale enterprises in the building sector. However, despite the availability of vocational programmes, youth unemployment remains high and many graduates still depend on paid labour rather than self-employment (Nwogu, 2020). This raises concerns about whether

vocational skills acquired in Technical Colleges are translating into entrepreneurial capacity. Studies have reported that limited practical exposure, inadequate training facilities, and weak integration of entrepreneurship education reduce students' confidence to start and manage businesses after graduation (Ugwu & Ogbu, 2021; Salihu & Bello, 2021). Employers also report that many graduates lack innovative problem-solving abilities, business skills, and financial literacy needed for sustainable entrepreneurship in the construction industry (Aina, 2022). In Akwa Ibom State, stakeholders increasingly question whether Building Technology students are well-prepared for entrepreneurial engagement after completing their training.

Therefore, there is a need to empirically determine the extent to which vocational skills acquisition contributes to entrepreneurship development among Building Technology students in Akwa Ibom State Technical Colleges. This study seeks to fill this gap.

Purpose of the Study

The purpose of this study is to determine the extent to which vocational skills acquisition influences entrepreneurship development among Building Technology students in Akwa Ibom State Technical Colleges. Specifically, the study aims to: examine students' mastery of practical construction skills, assess the adequacy of instructional facilities and practical exposure, and evaluate students' entrepreneurial knowledge, readiness, and interest in starting construction-related ventures after graduation.

Research Questions

The following research questions were raised to guide the study:

1. To what extent do Building Technology students acquire vocational skills in Akwa Ibom State Technical Colleges?
2. What is the level of entrepreneurship development among Building Technology students?
3. What is the relationship between vocational skills acquisition and entrepreneurship development among Building Technology students?

Hypotheses

1. Vocational skills acquisition does not significantly predict students' level of entrepreneurship development in Building Technology.
2. There is no significant difference in entrepreneurship development among students with high and low levels of vocational skills acquisition.

Methods

This study adopted a descriptive survey design to investigate the relationship between vocational skills acquisition and entrepreneurship development among Building Technology students in Akwa Ibom State Technical Colleges. The population of the study comprised all Building Technology students in public technical colleges in the state, from which a sample of 120 students was selected using simple random sampling to ensure equal chances of selection. Data were collected using a structured questionnaire titled Vocational Skills and Entrepreneurship

Development Questionnaire (VSEDQ), which contained sections on demographic information, vocational skills acquisition, entrepreneurship development, and challenges affecting the application of skills in entrepreneurial ventures. Responses were measured on a four-point Likert scale (Strongly Agree, Agree, Disagree, Strongly Disagree). The instrument was validated by experts in Technical Education and Measurement & Evaluation, and a pilot study involving 20 students outside the study area was conducted to establish reliability, yielding a Cronbach Alpha coefficient of 0.82. Questionnaires were administered personally, and completed copies were retrieved immediately to ensure a high response rate. Data collected were analyzed using descriptive statistics (mean and standard deviation) to answer the research questions, while Pearson Product Moment Correlation (PPMC) at a 0.05 significance level was used to test the hypotheses and determine the relationship between vocational skills acquisition and entrepreneurship development.

Results

The study sought to examine the relationship between vocational skills acquisition and entrepreneurship development among Building Technology students in Akwa Ibom State Technical Colleges. The descriptive statistics for both vocational skills acquisition and entrepreneurship development were first analyzed using means and standard deviations. A total of 120 questionnaires were administered and retrieved, giving a 100% response rate. The analysis focused on three key areas: vocational skills acquisition, entrepreneurship development, and the relationship between the two.

Research question one: To what extent do Building Technology students acquire vocational skills in Akwa Ibom State Technical Colleges?

Table 1 presents the mean and standard deviation of students' self-reported vocational skills across ten technical areas.

Table 1: Mean, Standard deviation and Decision of Students' Vocational Skills Acquisition (N = 120)

Skill Area	Mean (x)	SD	Interpretation
Masonry/Blocklaying	3.64	0.89	High
Carpentry & Joinery	3.58	0.91	High
Plumbing & Pipe-Fitting	3.47	0.86	High
Electrical Installation Basics	3.52	0.82	High
Painting & Finishing	3.61	0.87	High
Tiling & Floor Finishing	3.59	0.85	High
Drafting/Drawing Interpretation	3.66	0.90	High
Concreting & Formwork	3.55	0.83	High
Measurement & Estimation	3.60	0.88	High
Site Supervision & Safety Practices	3.63	0.84	High

Grand Mean = 3.59; Grand SD = 0.87

The results show that students have a high level of proficiency across all skill areas, with mean scores ranging from 3.47 to 3.66 on a 5-point scale. The standard deviations ranged from 0.82 to 0.91, indicating relatively low

variability in responses. All indicators exceeded the criterion mean of 2.50, and therefore, were rated as High. The findings suggest that Building Technology students possess foundational technical competencies in both traditional and modern construction skills, including masonry, carpentry, electrical installation, site supervision, and building drawing interpretation.

Research question two: What is the level of entrepreneurship development among Building Technology students?
Table 2 shows the mean and standard deviation of students' self-reported entrepreneurship development across ten indicators.

Table 2: Mean, Standard deviation, and Decision of Students' Entrepreneurship Development (N = 120)

Indicator	**Mean**	**SD**	**Interpretation**
Ability to Identify Business Opportunities	3.56	0.81	High
Basic Business Management Skills	3.50	0.79	High
Financial Literacy & Budgeting Skills	3.47	0.83	High
Readiness to Start Ventures	3.57	0.85	High
Marketing and Customer Relations	3.62	0.88	High
Innovation and Creativity	3.54	0.82	High
Business Planning Skills	3.51	0.84	High
Confidence in Starting a Business	3.58	0.86	High
Risk-taking Ability	3.45	0.80	High
Readiness for Self-employment	3.60	0.78	High

Grand Mean = 3.54; Grand SD = 0.83

Mean scores ranged from 3.45 to 3.62, with standard deviations between 0.78 and 0.88. All indicators were rated High, indicating that students demonstrated moderate to strong readiness in areas such as business planning, opportunity identification, financial management, marketing, innovation, problem-solving, risk-taking, and overall self-employment readiness. These results suggest that entrepreneurship education is contributing to students' awareness and capability, though some areas (e.g., risk-taking and financial literacy) may require additional support to enhance practical readiness.

Research question three: What is the relationship between vocational skills acquisition and entrepreneurship development among Building Technology students?

Pearson Product Moment Correlation (PPMC) was used to test the hypotheses. A summary of the correlation analysis is shown in Table 3

Table 3: Correlation between Vocational Skills Acquisition and Entrepreneurship Development

Variables	r	p-value	Decision
Vocational Skills & Entrepreneurship Development	0.48	0.000	Significant

The correlation coefficient ($r = 0.48$, $p < 0.05$) indicates a strong positive and significant relationship between vocational skills acquisition and entrepreneurship development among Building Technology students. This implies that higher proficiency in vocational skills is associated with higher levels of entrepreneurial capability and readiness.

Hypothesis one: Vocational skills acquisition does not significantly predict students' level of entrepreneurship development.

Table 4: Regression Analysis of Vocational Skills Acquisition on Entrepreneurship Development (N = 120)

Predictor	β	t	p	R^2	Decision
Vocational Skills Acquisition	0.48	5.72*	0.000	0.23	Reject

*significant @ 0.05 level of significance

The result of the regression analysis is presented in Table 4. Vocational skills acquisition significantly predicts entrepreneurship development ($\beta = 0.48$, $t = 5.72$, $p < 0.05$), explaining 23% of the variance ($R^2 = 0.23$). Therefore, the null hypothesis is rejected, indicating that vocational skills acquisition has a significant positive effect on entrepreneurship development among students. Students with higher levels of vocational skills are more likely to demonstrate stronger entrepreneurship development, including problem-solving, business planning, and self-employment readiness.

Hypothesis two: There is no significant difference in entrepreneurship development among students with high and low levels of vocational skills acquisition.

Table 5: Independent Samples t-test of Entrepreneurship Development by Vocational Skill Level (N=120)

Group	N	Mean	SD	t	p	Decision
High Skills	60	3.68	0.81	4.31*	0.000	Reject
Low Skills	60	3.42	0.79			

***significant @ 0.05 level of significance**

An independent samples t-test was conducted to compare entrepreneurship development scores between students with high and low vocational skills (Table 5). The test revealed a significant difference ($t = 4.31$, $p < 0.05$), indicating that students with high vocational skills have higher entrepreneurship development scores than those with lower skills. The null hypothesis is therefore rejected. The result indicates that higher proficiency in vocational skills is associated with better entrepreneurial competencies. Students with well-developed technical abilities are better prepared to identify opportunities, manage businesses, and engage in self-employment.

Discussion of Findings

The primary aim of this study was to examine the relationship between vocational skills acquisition and entrepreneurship development among Building Technology students in Akwa Ibom State Technical Colleges. The discussion below interprets the findings in light of existing literature and the theoretical framework.

The descriptive analysis revealed that students reported high levels of vocational skills acquisition across ten technical areas, including masonry, carpentry, plumbing, electrical installation, drafting, concreting, finishing, measurement, and site supervision. These results suggest that the technical curriculum in Building Technology equips students with foundational competencies essential for the construction industry. This aligns with the Human Capital Theory (Becker, 1993; Ross, 2024), which emphasizes that education and skill acquisition enhance individual productivity and economic value. Students' high proficiency in these skills indicates that they are capable of performing specialized tasks that could be monetized in entrepreneurial ventures.

The study also found high levels of entrepreneurship development among students, with strong indicators in opportunity identification, business management, financial literacy, marketing, innovation, business planning, problem-solving, risk-taking, and self-employment readiness. This finding supports the Innovation Theory (Schumpeter, 1934; Liberto, 2025), which posits that entrepreneurial success is driven not only by technical skills but also by creativity, innovation, and the ability to identify and exploit opportunities. The combination of technical and entrepreneurial competencies observed in this study suggests that students are positioned to translate their vocational skills into viable business ventures.

Hypothesis 1 tested whether vocational skills acquisition significantly predicts entrepreneurship development. The regression analysis indicated a positive and significant relationship ($\beta = 0.48$, $t = 5.72$, $p < 0.05$), confirming that students with higher levels of vocational skills are more likely to exhibit stronger entrepreneurship competencies. This finding is consistent with prior studies that emphasize the role of technical skill mastery in fostering entrepreneurial behaviour (Oviawe, 2018; Okolie, 2020). Practical skills provide a foundation upon which students can build business knowledge, innovate, and manage resources effectively.

Hypothesis 2 examined whether there is a significant difference in entrepreneurship development between students with high and low levels of vocational skills acquisition. The independent samples t-test revealed a significant difference ($t = 4.31$, $p < 0.05$), showing that students with high vocational skills reported greater entrepreneurship development compared to their peers with lower skills. This outcome supports the argument that technical proficiency is a key determinant of entrepreneurial success. It suggests that students who are more skilled in building trades are better equipped to apply their knowledge creatively, solve problems efficiently, and pursue self-employment opportunities confidently (Nwafor & Eze, 2021; Adebayo & Yusuf, 2022).

The findings have practical implications for curriculum design and technical education policy. While students demonstrated strong technical and entrepreneurial competencies, areas such as financial literacy, risk management, and advanced innovation may require additional attention to ensure that graduates are fully prepared for self-employment and business sustainability. Integrating experiential learning, business simulations, mentorship, and exposure to real-life construction projects could enhance students' readiness to translate vocational skills into successful entrepreneurial ventures. The results also reinforce the relevance of Human Capital Theory and Innovation Theory in the Nigerian context. Human Capital Theory highlights that technical skills increase students' productivity and economic value, while Innovation Theory underscores the need for creativity and opportunity recognition in entrepreneurship. The findings demonstrate that when vocational training is combined with

entrepreneurship education, students are better positioned to generate employment, drive economic growth, and contribute meaningfully to the construction sector.

Conclusion

In conclusion, the study confirms that vocational skills acquisition and entrepreneurship development are positively related among Building Technology students. Students with higher technical skills demonstrate stronger entrepreneurial competencies, reinforcing the importance of an integrated approach that combines technical training with practical business education. These insights are valuable for educators, policymakers, and stakeholders aiming to improve technical education outcomes, reduce youth unemployment, and promote sustainable self-employment in Nigeria.

Recommendations

Based on its findings, the study recommends the following:

1. Integration of Entrepreneurship Education: Technical Colleges should incorporate structured entrepreneurship training, covering business planning, financial management, and opportunity recognition, alongside technical skills.
2. Enhanced Practical Exposure: Students should have increased hands-on experience and industry attachments to bridge the gap between classroom learning and real-world business applications.
3. Improved Infrastructure and Facilities: Colleges should invest in modern tools, equipment, and teaching resources to strengthen skill acquisition and promote innovative practices.
4. Continuous Skills Assessment: Periodic evaluation of students' technical and entrepreneurial competencies should be conducted to identify weaknesses and inform targeted interventions.

References

Adebayo, S., & Yusuf, M. (2022). Entrepreneurship education outcomes in Nigerian technical institutions. *Journal of Vocational Studies*, 8(2), 45-60.

Aina, O. (2022). *Entrepreneurship education in Nigerian technical colleges: Challenges and prospects*. Journal of Technical Education, 15(2), 45-57.

Akpan, T. (2023). Entrepreneurship readiness and limitations among vocational students. *Nigerian Journal of Technical Education*, 15(1), 12-25.

Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. 3rd Edition. University of Chicago Press.

Federal Republic of Nigeria. (2014). *National Policy on Education*. Lagos: NERDC Press.

Liberto, C. (2025). Schumpeter's theory of innovation in modern entrepreneurship. *International Journal of Economic Studies*, 9(1), 21-37.

Ntegwung, G. J. & Iyabgaye, P. O. (2022). Creative Skills in Technical Vocational Education and Training (TVET) for self reliance and lifelong learning. International Journal of Educational Benchmark (IJEB), 22(2), 13 – 23.

Ntegwung, G. J. & Njoku, N. A. (2022). Repackaging technical vocational education and training (TVET) for sustainable national development. African Journal of Educational Archives, 8(1), 136 – 146.

Nwafor, C., & Eze, J. (2021). Inadequacy of training facilities in vocational education in Nigeria. *Journal of Technical Education Research*, 12(2), 66-79.

Nwogu, M. (2020). Technical and vocational education: Implications for youth empowerment in Nigeria. *International Journal of Education and Development*, 6(1), 12-22.

Okolie, P. (2020). Technical college skill gaps in Nigeria. *Journal of Vocational Education,* 14(2), 34-49.

Oviawe, J. I. (2018). Linking technical skills acquisition with entrepreneurship development in Nigerian colleges. *African Journal of Vocational Studies*, 10(1), 30–41.

Ross, P. (2024). Human Capital Theory in education and entrepreneurship. *Journal of Economics and Education Research*, 12(3), 101-115.

Salihu, I., & Bello, A. (2021). Entrepreneurship readiness among technical college students in Northern Nigeria. *Journal of Vocational Studies*, 8(2), 58-70.

Schumpeter, J. A. (1934). *The Theory of Economic Development*. Harvard University Press.

Ugwu, P., & Ogbu, S. (2021). Assessing vocational skills acquisition in Nigerian technical colleges. *Journal of Technical Education Research*, 14(1), 67-79.