



Leveraging Artificial Intelligence for Inclusive Technical and Vocational Education: An Indicator for Entrepreneurial Development of Tertiary Institution Students in Lagos State, Nigeria

Victor Igrubia ¹, Oluwatoyi Ruth Oyegunwa ² & Baritule Prince Saue ³

¹ Department of Technical Education, Isaac Jasper Boro College of Education Sagbama, Bayelsa State,
Email: victorigrubia@ijbcoe.edu.ng

² Department of Home Economics Education, Federal College of Education (Technical) Akoka, Lagos,
Email: oluwatoyin.oyegunwa@fcetakoka.edu.ng, ORCID: <https://orcid.org/0000-0001-6690-4211>

³ Department of Metalwork Technology, Federal College of Education (Technical) Akoka, Lagos,
ORCID: <https://orcid.org/0009-0001-3525-2828>

*Corresponding author: baritule.saue@fcetakoka.edu.ng

Abstract

This paper has reviewed the inclusion of artificial intelligence as a driver of the inclusive technical and vocational education and assumed as a predictor of the level of entrepreneurial growth among learners of tertiary institutions in Lagos State, Nigeria. The search in particular looked at the ability of AI to improve TVET skills development and entrepreneurship. The descriptive survey design was embraced where 222 respondents were involved including TVET students, lecturers and administrators in the Federal College of Education (Technical) Akoka, the University of Lagos Akoka and Lagos State University of Education Oto/Ijanikin, all offering undergraduate programs in TVET. A stratified random sampling of 382 people was used to select the participants. The instrument employed to collect the data was the “Artificial Intelligence for TVET and Entrepreneurial Development Questionnaire (AITVETEDQ), which was full of Google Forms and used a 4-point modified Likert scale. The instrument proved to be reliable with a Cronbachs alpha coefficient of eighty-three. Statistics was done in form of descriptive statistics (mean and Standard deviation) and inferential statistics (ANOVA) with the significance value of 0.05 and the SPSS version of 24. The results indicated that there is a high level of agreement in the viewpoint of all groups of stakeholders on the beneficial effects of AI on TVET skills development (mean scores: 3.34, 3.31, 3.31) and entrepreneurial development (mean scores: 3.35, 3.34, 3.40). Statistical tests proved that there was no significant difference between groups of respondents ($F=1.937$, $p=.146$; $F=5.168$, $p=.080$) thus keeping both null hypotheses. The standard deviations were between .51 and .90, which showed homogeneity in the responses. The research concludes that AI is a useful tool to support the development of inclusive tertiary education in television and contribute to entrepreneurship among students in tertiary establishments in Lagos State. To this end, it is suggested that universities in Nigeria ought to adopt artificial intelligence tactically in the curriculum of entrepreneurship to transform teaching the predominantly theoretical frameworks to be data-driven venture generation, which would produce an innovator, startup founder, and digital entrepreneur.

Keywords: Artificial Intelligence, Inclusive Education, Equitable Learning, Tertiary Institution, Pedagogy and TVET.

Introduction

The tertiary education environment of Nigeria incorporates universities or polytechnics, and colleges of teacher training (Federal Republic of Nigeria, 2014). These institutions promote learning, address social issues, and make overall socio-economic development (Oluwatoyin, 2020). Successful higher education requires, in collaboration with other national systems and institutions (Nwakanma, 2020). The changing economic patterns across the globe require educational systems on all levels to adapt to the evolving needs that demand more skillful and flexible employees (Oranu, 2021). Technical and vocational Education and Training (TVET) is the main aspect of programs in the accredited tertiary programs of Nigeria. The institutions of higher learning, more so, act as propellants towards the formation of vibrant communities that support equity and opportunity via human capital advancement (Saue & Momah, 2025). The benefits of tertiary education investments, in the long-run, are an increase in personal income and the growth of the economy (Abraham and Mallatt, 2022). The educational system of a country determines the level of workforce competencies and productivity that is needed to develop industries (Stephen, 2020). Tertiary institutions depend to a large extent on building the national workforce by means of education and training, especially, Technical and Vocational Education and Training (TVET), which has a direct impact on the economic development of the country.

Technical and Vocational Education and Training has historically been an important part of Nigerian educational system, developing practical skills that make the economy more productive. These programmes equip the youths in terms of industrial growth and diversification of the economy (Udoudo & Ikeji, 2023). The coding in TVET also provides industry-oriented technical skills particularly in areas where the short supply of

skilled labor has been a problem. These kinds of training enable the participants with the skills necessary to national development, economic diversification and poverty alleviation. TVET is considered a strategic way of enhancing economic growth and satisfying young people unemployment and skill gaps in workforce (Korter, 2023). TVET as one of the sustainable development strategies faces poverty, economic stagnation, low productivity, social inequality, instability, security challenges, environmental challenges, and lack of environmental awareness (UNESCO, 2019). Industrialised economies and emerging ones currently place emphasis on the skill-based education to meet the increase in the demand of skilled labourers (Harun & Muzir, 2020).

Technical and Vocational Education and Training (TVET) represents a necessary economic aspect in many countries. Modern and prospective professionals are becoming increasingly dependent on the solutions of TVET (Chukwu et al., 2020). Such programmes also prioritize occupation-based competencies without focusing on general academic knowledge thus causing better employment preparedness especially in STEM fields. TVET is vital in the development of human capital, to facilitate industrialization and creation of job opportunities in the face of ever-increasing world competitiveness (Salleh & Sulaiman, 2020). The success of technological development, industrial advancement, wealth-generating processes, and alleviation of poverty are pegged on TVET provided under inclusive education systems.

Development of equitable societies involves the inclusion of education, with everyone being involved meaningfully. The provision of inclusive education access to learners with varied cognitive, physical, linguistic, and socioeconomic backgrounds is still a challenge in the developing world like Nigeria (UNESCO, } (2021; Adebayo, } (2022). The educational needs of marginalized

groups are more numerous in the policies and programmes by the Nigerian government (Federal Ministry of Education, 2020). Inclusive education is an issue that is significant in Nigeria as it can help in the personal growth of an individual and contribute to the creation of just societies that can benefit diversity and allow every member of the community to engage in the process (Eze, 2019; Odo, nosti, 2021). This style fosters teamwork, instruction tactics and accommodative materials that increase involvement and accomplishment of students in most fields (Florian and Black-Hawkins, 2011). It has ensured the access to quality mainstream education without considering the student backgrounds or capabilities. The use of artificial intelligence (AI) may reinforce this strategy.

AI does not substitute human capabilities with improvisations, and its usage covers various industries. One can take AI systems as a reflection of human cognition since algorithms and data enable the machine to compute new information and act independently (Russell and Norvig, 2021). AI-based computer systems also execute tasks that typically demand the ability of the human mind such as learning, reasoning, problem solving, perception and decision making (Manir & Gwandu, 2025). AI is a useful tool in eliminating poverty and shared prosperity by reducing the costs and burdens of the solutions of the private sector and triggering investment in an emerging market (International Finance Corporation, 2020). AI disrupts education by providing the benefit of personalised learning and enhancing learning outcomes, and there are also emerging findings that AI can eliminate educational inequalities (Melo, 2025). The development of AI technologies that change the way instruction is delivered and learning occurs grows at an increasing pace by higher education institutions all over the world (Asio and Gadia, 2024; Zawacki-Richter et al., 2019). AI integrated solutions provide impressive inclusion education opportunities by expanding the accessibility of special needs students, personalising the learning experience, offering

educators data-based insights, and ensuring that one engages in education in the same way. Artificial intelligences tailor learning process, optimise administrative processes, and come up with insights that reinforce teaching practices (Luckin et al., 2016; Holmes, 2021). The following capabilities allow personalising learning, optimising an operation, and having a critical course of action that enhances the quality of education (Asio, 2024; Holmes et al., 2021) hence enhancing the development of entrepreneurial development when it comes to TVETs.

Entrepreneurial development is a very important factor in the modern economies in relation to wealth creation, amelioration of living standards and development of the production system. Also, entrepreneurship learning encourages originality of thought and flexibility so that individuals can respond to business ambiguities (Akanbi and Yusuf, 2021). In this way, the most common understanding of entrepreneurial development refers to identifying opportunities in the market and creating value through the use of innovations and by taking financial risks (Omotayo et al., 2024; Emeh et al., 2020). The development of entrepreneurship involves those activities that promote the growth of enterprises and long-lasting value creation (Adeoye, 2022). Entrepreneurial development refers to offering individuals the necessary skills, knowledge, and resources that would enable them to identify opportunities, develop innovative business ideas, and run businesses successfully (Akinola, eddie.A. 2022). Development of entrepreneurship is becoming a growingly acknowledged tool of socio-economic change, creation, and non-discriminatory progress. In reference to Muntaqa et al. (2025), the Central Bank of Nigeria (2011) defines entrepreneurial development in Nigeria, as in the other emerging economies, through the capacity of individuals to create wealth and spark off growth in the community. The development of entrepreneurship is a measure of the economic progress of any country, and its key role in stimulating innovative processes, creation of jobs, and overall economic

growth. As Ajayi and Olufemi (2023) note, entrepreneurs in Nigeria are playing a major role in wealth creation, provision of jobs and bringing innovative concepts in various sectors.

As a result, the tertiary institutions in Nigeria have introduced entrepreneurial education as part of the curriculum, to instill innovation, economic independence and creation of employment (Okon & Adebayo, 2023). The Technical and Vocational Education and Training (TVET) students acquire exposure to business planning, financial literacy, market analysis, and risk management- things that constitute successful business through highly developed courses. In that regard, the current research on “leveraging artificial intelligence towards inclusive technical and vocational education: an indicator of entrepreneurial development among tertiary institution students in Lagos State, Nigeria fills the gap of TVET students being equipped with practical skills necessary to develop towards becoming an entrepreneur.

Statement of the Problem

The current educational system of Nigeria is struggling with significant gaps and disparities in the education provision, access, and achievement due to the existing systemic issues. Learning gaps indicate differences between the current teaching methods and the best learning techniques required in learning. The reasons behind these gaps vary: they can be the use of outdated curricula and insufficient preparation of teachers, limited access to technology, and the gap between instructions and student needs (Darling-Hammond et al., 2020). Conventional teacher-based teaching that is still common in most classroom settings is a barrier to the use of new inclusive teaching methods (O'Neill and McMahon, 2022). Such issues as a lack of infrastructure and learning resources among students with special needs, which creates systemic exclusion, and more than 20 million out-of-school children (UNICEF, 2023) attract much attention. The several barriers to inclusive education include digital divides (Maphalala & Njody, 2024, 2020). The federal republic of Nigeria has a national

policy (National policy on Special needs education) aimed at ensuring sustainable development goal number four which is to promote inclusive quality education but there has been poor implementation (Melo, 2025). This situation led to the undertaking of the study as an indicator of entrepreneurial development of tertiary institution students in Lagos State, Nigeria: leveraging artificial intelligence to inclusive technical and vocational education.

Aim and Specific Objectives of the Study

This study aimed to leverage artificial intelligence for inclusive technical and vocational education as an indicator for entrepreneurial development of tertiary institution students in Lagos State, Nigeria. Specifically, the study sought to leverage AI as an indicator for:

- 1) TVET skills development of tertiary institutions students in Lagos State, Nigeria
- 2) Entrepreneurial development of tertiary institutions students in Lagos State, Nigeria

Research Questions

- 1) How would leveraging AI enhance TVET skills development of tertiary institutions students in Lagos State, Nigeria?
- 2) How would leveraging AI enhance entrepreneurial development of tertiary institutions students in Lagos State, Nigeria?

Hypotheses

H₀₁: No significant difference exists between the mean responses of respondents regarding how leveraging AI would enhance TVET skills development of tertiary institutions students in Lagos State, Nigeria.

H₀₂: No significant difference exists between the mean responses of respondents regarding how leveraging AI would enhance entrepreneurial development of tertiary institutions students in Lagos State, Nigeria.

Methodology

The current study was descriptive survey research design. Survey design uses information that has

been collected by asking the participants, and does not introduce any experimentation or intervention (Avwokeni, 2003, cited in Christopher and Udoh, 2020). The sample chosen to take part in the research was based on 382 respondents, 382 respondents were defined as students, lecturers and administrators of tertiary institutions in the state of Lagos, which offer TVET programmes including the Federal College of Education (Technical) Akoka, the University of Lagos Akaka, and the Lagos State University of Education Oto/Ijanikin. To get a sample of 222 subjects out of the target population, a stratified random sampling method was used. A questionnaire was used to collect the data, and it was titled as Artificial Intelligence for TVET and Entrepreneurial Development Questionnaire (AITVETEDQ). The tool had a four-point modified Likert scale, with the levels of strongly agree or disagree and conducted by Google Forms. Informed consent was obtained by calling, sending text messages, e-mailing the respondents and having face-to-face communication with them. The questionnaire was shared on e-mail inboxes of respondents and

WhatsApp through the approval. The participants were given a 14-day time to respond and submit the tool. Validity and suitability of the questionnaire items were checked by three scholars of the University of Lagos Akoka Yaba and the Lagos State University of Education Oto/Ijanikin. The instrument was then subjected to test, retest in order to determine stability and reliability. The coefficient produced by Cronbach alpha was 0.83 and this gave satisfactory internal consistency and dependability. Research questions were analysed using descriptive statistics (mean and standard deviation) to find out the data on hypotheses whereas inferential statistics (Analysis of Variance, ANOVA) was used to test all these hypotheses at the 0.05 significance level on SPSS version 24. A decision-making criterion mean of 3.0 was adopted, in order to set decision-making criteria.

Analysis of Data

Research Question 1:

How would leveraging AI enhance TVET skills development of tertiary institutions students in Lagos State, Nigeria?

Table 1: Mean and standard deviation responses of students, lecturers and administrators on leveraging AI for TVET skills development in tertiary institutions in Lagos State

S/N	Items	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_{Av}$	SD_{Av}	Rmk
1.	AI enhances practical skill diagnostics	3.34	3.23	3.19	3.25	.66	Agree
2.	AI supports remote control of lab equipment or virtual experimentation	3.50	3.51	3.44	3.48	.51	Agree
3.	Intelligent tutoring systems provide step-by-step guidance during practical exercises.	3.32	3.34	3.19	3.28	.62	Agree
4.	Adaptive learning platforms adjust training content based on student skill level.	3.32	3.34	3.19	3.28	.62	Agree
5.	Real-time feedback during practical tasks	3.34	3.17	3.38	3.30	.63	Agree
6.	Competency-based assessment aligned with industry standards	3.50	3.51	3.44	3.48	.51	Agree
7.	Exposure to Industry 4.0 technologies (robotics, IoT, AI systems).	3.34	3.23	3.19	3.25	.66	Agree
8.	Supports industry-relevant training and improves employability and entrepreneurship	3.50	3.51	3.44	3.48	.51	Agree
9.	AI-driven labour market analysis identifies in-demand skills	3.16	3.20	3.50	3.29	.70	Agree
10.	Assistive AI technologies support students with disabilities.	3.34	3.23	3.19	3.25	.66	Agree

11.	AI can recommend personalized upskilling programs as industries evolve	3.15	3.14	3.25	3.18	.66	Agree
12.	Flexible learning modes support working students and apprentices.	3.50	3.51	3.44	3.48	.51	Agree
13.	Automated skills assessment using sensors and machine vision	3.15	3.14	3.25	3.18	.66	Agree
Average Mean / SD		3.34	3.31	3.31	3.32	.60	Agree

Source: Researchers (2026) $\bar{X}_1; \bar{X}_2; \bar{X}_3$ = Mean of respondents $\bar{X}_{av}$; = Average and SD_{av}

Table 1 shows the average outcomes of 3.34, 3.31, 3.31 and 3.32 of the TVET students, lecturers and administrators respectively in relation to the role of artificial intelligence on development of TVET skills among the students in tertiary institutions in Lagos State, Nigeria. These findings support the agreement of the participants that the factors listed in Table 1 positively affect the skill improvement

achieved in these scholars in the field of TVET. The estimates of standard deviation, ranging between 0.51 and 0.70, are absent of a break in the pattern of the response of the participants.

Research Question 2:

How would leveraging AI enhance entrepreneurial development of tertiary institutions students in Lagos State, Nigeria?

Table 2: Mean and standard deviation responses of students, lecturers and administrators on leveraging AI for entrepreneurial development in tertiary institutions in Lagos State

S/N	Items	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_{Av}$	SD_{Av}	Rmk
1.	Helping students identify viable business opportunities within Nigeria's economy (agribusiness, fintech, renewable energy, creative industries)	3.16	3.20	3.50	3.29	.70	Agree
2.	Analyzing market trends, consumer behavior, and local economic data	3.50	3.49	3.56	3.52	.51	Agree
3.	Students receive customized business case studies and simulations	3.36	3.46	3.25	3.36	.60	Agree
4.	Support product design and AI-assisted prototyping	3.33	3.17	3.31	3.27	.66	Agree
5.	AI-driven customer service (chatbots, CRM tools)	3.35	3.46	3.25	3.35	.68	Agree
6.	E-commerce optimization and digital marketing analytics	3.35	3.17	3.56	3.36	.61	Agree
7.	Offering virtual incubation and mentorship platforms for students in remote areas.	3.37	3.49	3.63	3.50	.53	Agree
8.	Bridging skill gaps between urban and rural institutions	3.36	3.31	3.56	3.41	.56	Agree
9.	Provide virtual coaching, legal advice, and funding guidance	3.32	3.29	3.31	3.31	.59	Agree
10.	Connect student entrepreneurs to investors, industry experts, and startup hubs	3.34	3.31	3.25	3.30	.64	Agree
11.	Supports intellectual property analysis and patent searches	3.35	3.31	3.31	3.32	.55	Agree
12.	Startup growth metrics and learning progress	3.15	3.14	3.25	3.18	.66	Agree

13.	TVET, innovation hubs, and startup funding programs (e.g., TETFund, NITDA)	3.50	3.51	3.44	3.48	.51	Agree
14.	Digital economy and Industry 4.0 initiatives.	3.25	3.23	3.19	3.22	.90	Agree
15.	Entrepreneurial competencies (creativity, risk-taking, problem-solving)	3.50	3.51	3.44	3.48	.51	Agree
16.	Receive real-time feedback on business viability	3.36	3.31	3.56	3.41	.56	Agree
Average Mean / SD		3.35	3.34	3.40	3.36	.61	Agree

Source: Researchers (2026) $\bar{X}_1; \bar{X}_2; \bar{X}_3$ = Mean of respondents $\bar{X}_{av}$; = Average and SD_{av}

The data provided in Table 2 will indicate mean scores of 3.35, 3.34, 3.40 and 3.36 on the variables TVET students, lecturers and Administrators respectively when considering the impact of the artificial intelligence on creating an entrepreneurial development within the tertiary institutions in Lagos State, Nigeria. These findings indicate that there is some consensus between respondents that the dimensions identified in Table 2 have a positive impact on entrepreneurial growth in such

environments. In addition, the standard-deviation values that have been observed (0.51-0.90) display a high level of consistency between the responses of the participants.

Hypotheses Testing

Hypothesis (Ho₁): No significant difference exists between the mean responses of TVET students, lecturers, and administrators regarding how leveraging AI would enhance TVET skills development in tertiary institutions in Lagos State.

Table 3: One-way ANOVA of mean scores of respondents on how would leveraging on AI enhance TVET skills development in tertiary institutions in Lagos State

Source	Sum of Squares	Df	Mean Square	F	Sig. value
Between Groups	.270	2	.135	5.168	.080
Within Groups	9.094	220	.026		
Total	9.364	222			

Source: Researchers (2026)

According to the statistical analysis in Table 3, the value of F (2, 222 5.168, p. 80), is not significant at the traditional level of statistical significance (p.05). Thus, the data do not show statistically significant differences between the three groups of stakeholders, which are TVETs students, TVET lecturers, and TVET administrators in their perceptions of the role AI plays in increasing TVET skills development in tertiary institutions. In this regard, the null hypothesis is accepted. These results can be used to sustain the hypothesis that

artificial intelligence will be a relevant tool to promote the improvement of TVET skills development across tertiary institutions in Lagos State.

Hypothesis (Ho₂): No significant difference exists between the mean responses of TVET students, lecturers, and administrators regarding how leveraging AI would enhance inclusive education in tertiary institutions in Lagos State.

Table 4: One-way ANOVA of mean scores of respondents on how would leveraging on AI enhance entrepreneurial development in tertiary institutions in Lagos State

Source	Sum of Squares	Df	Mean Square	F	Sig. value
Between Groups	.084	2	.042	1.937	.146
Within Groups	7.537	220	.022		

Total	7.621	222
--------------	-------	-----

Source: Researchers (2026)

Table 4 shows statistical results of the F statistic equal to (2,222) =1.937 and a p -value of =.146 which falls below the traditional significant level of (p-value) less than =.05. As a result, the difference between the perceptions of the TVET students, lecturers and administrators regarding the role of artificial intelligence in improving the entrepreneurial development in tertiary institutions is not statistically significant. Based on that, the null hypothesis was accepted. This finding, consequently, underlies the hypothesis that artificial intelligence is an effective tool in career building of entrepreneurs in tertiary organizations, in particular, in Lagos state of Nigeria.

Discussion of Findings

The feedback of the participants supported the idea that the mechanisms outlined in Table 1 help to support the promotion of TVET skill development in the tertiary institutions in the Lagos State. The values of the standard deviation in the range of 0.51 to 0.70 are a witness to the consistency of the opinions of the respondents. Analysis of the information shows that there is no statistically significant difference between the TVET students, lecturers, and administrators on the issue of whether or not AI enhances the development of TVET skills in tertiary institutions. The null hypothesis was therefore confirmed and this implied that Artificial Intelligence is a relevant instrument of enhancing TVET skill acquisition among tertiary higher institutions in Lagos State, Nigeria. This result is in line with Bozkurt and Sharma (2020), who have reported that learners belonging to underserved groups can face limited opportunities to access essential technology infrastructure, which can restrict their ability to utilize AI-enhanced tools of education.

The responses of participants confirmed the approval that the elements described in table 2 are facilitating the entrepreneurial growth of tertiary institutions in the city of Lagos state of Nigeria. The measures of standard deviation between 0.51

and 0.90 point to the consistency of the views of the participants. The statistical analysis shows that there is no substantial difference between TVET students, lecturers, and administrators as to whether AI improves the development of entrepreneurship in tertiary institutions in the Lagos State, Nigeria. The null hypothesis was accepted, which means that Artificial intelligence is helpful in terms of entrepreneurship development in tertiary institutions in Lagos State. These findings support the study by Ally et al. (2019), who highlighted that intentional efforts are necessary in ensuring equal access to technology and in ensuring that every student develops the digital literacy and skills necessary to incorporate AI in business across the boundaries of nations.

Conclusion

The objective results of the current research reveal a strong agreement between Technical and Vocational Education and Training (TVET) students, faculty members and administrative staff with regard to the beneficial implications of Artificial Intelligence on the development of TVET skills and entrepreneurial capacity in tertiary institutions located at Lagos state in Nigeria. Mean values that are consistently large (between 3.31 and 3.40 among the various respondents' cohorts) confirm the existence of an unquestioning consensus that strategic usage of AI complements and maintains the technical and vocational competence, thus inculcating an entrepreneurial potential within the TVET students in the tertiary educational environment of Lagos State, Nigeria. The limited number of the standard deviation values show that the personal perceptions of the participants were significantly uniform which represented a shared interpretive paradigm that senescence through the different stakeholder groups. Statistical tests proved the null hypotheses and, therefore, supported the fact that there are no significant differences between the TVET students, lecturers, and administrators in terms of the use of

AI as a driver of the improvement of TVET competencies and entrepreneurial growth.

Recommendations

Based on the empirical evidence below, the propositions outlined below are thus advanced:

- 1) Higher learning institutions, in my opinion, should introduce AI-mediated learning systems, including adaptive learning platforms, virtual laboratories, and intelligent tutoring systems, into TVET programs and improve access, engagement, and acquisition of practical skills.
- 2) We should immediately establish cooperative agreements with technology enterprises, industries operating in the TVET industry, and creators of AI applications, reinforcing access to new resources, promoting work-related skills training assets, and maintaining consistency with the requirements demanded by the current labor market.
- 3) Particularly, the integration of the concept of artificial intelligence into entrepreneurship education should become a strategic choice of tertiary institutions in Nigeria, transforming a rather theoretical model into an information-driven entrepreneurship-creation environment that develops innovators, start-up founders, and digital entrepreneurs.

References

- Abraham, K. G. & Mallatt, J. (2022). Measuring human capital. *Journal of Economic Perspectives*, 36(3):103–130. [10.1257/jep.36.3.103](https://doi.org/10.1257/jep.36.3.103)
- Adebayo, F. A. (2022). Inclusive education and emerging technologies: A Nigerian perspective. *Journal of Educational Development*, 9(2), 34– 47.
- Adeoye, A. (2022). *Entrepreneurship development and enterprise growth in Nigeria*. Publisher
- Ajayi, A., & Olufemi, B. (2023). Entrepreneurial Ventures and Economic Growth in Nigeria: A Sectoral Analysis. *Journal of Economic Development*, 28(2), 75-89.
- Akanbi, M. O., & Yusuf, A. B. (2021). *Entrepreneurship education and the development of innovative thinking in Nigerian universities*. Talent Press
- Akinola, J. (2022). Entrepreneurship development and its role in job creation. *Journal of Business Innovation*, 10(4), 221-238
- Ally, M., Grimus, M., & Ebner, M. (2019). Preparing for the digital university: A review of the history and current state of distance, blended, and online learning. *Journal of Computing in Higher Education*, 31(3), 548-567. <https://doi.org/10.1007/s12528-019-09208-w>
- Amin, S. M., Suhaimi, S.S.A. & Nazuri, N. S. (2023). The present and future of Malaysian technical and vocational education and training (TVET). *International Journal of Academic Research in Business and Social Sciences*, 13(18), 107 - 117
- Asio, J. M. R. & Gadia, E. D. (2024). Predictors of student attitudes towards artificial intelligence: Implications and relevance to the higher education institutions. *International Journal of Didactical Studies*, 5(2), 27763. <https://doi.org/10.33902/ijods.202427763>
- Asio, J.M.R. (2024). Artificial intelligence (AI) literacy and academic performance of tertiary level students: a preliminary analysis. *Social Sciences, Humanities and Education Journal (SHE Journal)*, 5(2), 309 – 321
- Bozkurt, A., & Sharma, R. (2020). Bridging the digital divide in education. *Educational Technology Research and Development*, 68(4), 1439-1456. <https://doi.org/10.1007/s11423-020-09744-3>
- Christopher, I. C. & Udoh, E. (2020). The determinants of survey design in a research undertaking. *International Journal of Recent Research in Commerce Economics and Management (IJRRCM)*, 7(1), 29 - 37.
- Chukwu, D. U., Anaele, E. A., Omeje, H. O., & Ohanu, I. B. (2020). Assessing technical vocational education and training (TVET) labour market potentials: Comparison of conferees' opinions. *Journal of Technical Education and Training*, 12(2), 12-23.

- Darling-Hammond, L., Cook-Harvey, C., Flook, L., Gardner, M., & Melnick, H. (2020). With the whole child in mind: Insights from the corner school development program. Alexandria, ASCD.
- Emeh, I., Johnson, T., & Musa, A. (2020). Entrepreneurship Development and Youth Unemployment in Nigeria. *Journal of African Business Studies*, 14(2), 67–84.
- Eze, J. (2019). *Inclusive education policies and practices in Nigeria*. University of Nigeria Press.
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828.
- Harun, A., & Munzir, A. (2020). TVET in Malaysia: Capabilities and challenges as viable pathway and educational attainment. *Journal on Technical and Vocational Education*, 5(1).
- Holmes, W. (2021). AI and adaptive learning for inclusive education. *Educational Technology Research and Development*, 69(2), 923 - 940.
- Holmes, W., Bialik, M., & Fadel, C. (2021). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign
- International Finance Corporation. (2020). Artificial intelligence in emerging markets: Opportunities, trends and emerging business models. http://lib.ysu.am/disciplines_bk/67f34.pdf
- Korter, G.O. (2023). Addressing youth unemployment in Nigeria: The role of TVET and strategies for empowerment. *International Journal of Science and Research (IJSR)*, 12(7), 26-31,
- Lawalley, A. (2024). Understanding educational inequality in Cameroon. *West African Journal of Education*, 9(1), 11-24.
- Luckin, R., Holmes, W., Griffiths, M. & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson
- Manir, H. & Gwandu, F. F. (2025). Application of Artificial Intelligence (Ai) in Enhancing Inclusive Education in Nigeria. *Journal of Contemporary Research in Educational Administration & Management*, 2(3), 52 – 60
- Maphalala, M. C., & Ajani, O. A. (2024). *Teaching and learning of computer science in higher education: a self-directed learning perspective*. In C. Bosch, L. Goosen, & J. Chetty (Eds.), *Navigating computer science education in the 21st century* (pp. 89-111). IGI Global. <https://doi.org/10.4018/979-8-3693-1066-3.ch005>
- Melo, N. (2025). Leveraging artificial intelligence for inclusive education: Bridging the gap in Cameroon's higher education landscape. doi:10.20944/preprints202503.2287.v1
- Muntaqa, M. M., Musa, I. & Magaji, S. (2025). Leveraging entrepreneurship to achieve sustainable economic growth in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research*, 13(3), 392-410
- Nwakanma, J., (2020). University education in Nigeria: History, successes, failures and the way forward. *International Journal of Technology and Inclusive Education*, 1(2), 44- 48
- O'Neill, G. & McMahon, T. (2022). Innovations in online professional learning. *Innovative Higher Education*, 47(3), 191-208.
- Odo, S. (2021). *Equity and inclusive education in Nigeria: Opportunities and challenges*. National Education Review.
- Okebukola, P. (2020). *Leveraging artificial intelligence for the future of education in Nigeria*. Keynote Lecture at the National Innovation Summit.
- Okon, U. E. & Adebayo, T. A. (2023). *Curriculum integration and entrepreneurship development in tertiary institutions*. National Academic Press.
- Oluwatoyin, D. J., (2020). The political will and quality basic education in Nigeria. *Journal of Power, Politics & Governance*, 2(2), 75-100.
- Omotayo, G., Adewole, K., Kadiri, A., & Attah, S. (2024). Entrepreneurship and economic development in Nigeria: Evidence from an

- ARDL Model. *Journal of Applied Economics and Business*, 12(4), 144–162
- Oranu, M.A. (2021). *Selecting appropriate media and equipment for instruction*. In A.I. Idowu, S.O. Daramola, A. S. Olorundare, O.O. Obiyemi, N.Y.S. Ijaiya & K. Lafinhan (Eds.), *Teaching practice*, (pp.62-64). Ilorin: University of Ilorin, Faculty of Education
- Russell, S. & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson
- Salleh, K. M., & Sulaiman, N. L. (2020). Reforming technical and vocational education and training (TVET) on workplace learning and skills development. *International Journal of Recent Technology and Engineering*, 8(5), 2964-2967.
- Saue, B. P. & Momah, S. R. (2025). Adoption of artificial intelligence-based instructional tools for enhanced classroom interactions in universities in Lagos State. *Akoka Journal of Education*, 12(1), 84 - 92
- Seymour, W., Smith, G., & Ajani, T. A. (2020). Bridging the gap: Ensuring access to AI technologies. *Journal of Computer Assisted Learning*, 36(5), 654-665. <https://doi.org/10.1111/jcal.12456>.
- Stephen, O. O. (2020). Information technology, technical vocational education in developing workforce towards globalization. In the roles of technology and globalization in educational transformation IGI Global.
- UBE Commission. (2020). State of basic education in Nigeria report. Universal Basic Education Commission.
- Udoudo, N.J. & Ikeji, F.I. (2023). Policy reforms in Technical Vocational Education and Training (TVET) for sustainable development in Abia State, Nigeria. *Integrity Journal of Education and Training*, 7(2), 26-35.
- UNDP. (2023). Harnessing technology for education in Cameroon. United Nations Development Programme.
- UNESCO (2019). *Assessment of the labour market & skills analysis: Iraq and Kurdistan RegionIraq*. <https://unesdoc.unesco.org/ark:/48223/pf0000371374>
- UNESCO, (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing
- UNICEF. (2023). Education brief: Out-of-school children in Nigeria. UNICEF Nigeria.
- Zawacki-Richter, O., Marín, V. I., Bond, M. & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 16, 39. <https://doi.org/10.1186/s41239-019-0171-0>.