MRN Publishing

Vol. 12, No. 21, 2024, pp. 1–5.
ISSN 1596−5074

Management Network Journal

Entrepreneurship Skills Acquisition in Technical Education: Towards a Theoretical Framework for National Development

Aishatu Musa Yusuf [1]*, Saleh Umar [2]

[1] *Department of Public Administration, School of Management Sciences, Federal Polytechnic Damaturu, Nigeria.*
[2] *Department of Office Technology & Management, School of Management Sciences, Federal Polytechnic Damaturu, Nigeria.*

Abstract

This paper provides a conceptual clarification and theoretical synthesis on the integration of entrepreneurship skills acquisition into polytechnic curricula and its implications for national development in Nigeria. It addresses persistent ambiguities in how entrepreneurship education is defined, delivered, and linked to broader developmental outcomes. Drawing on human capital theory, the capability approach, and the systems of innovation perspective, the paper advances a conditionality argument: while entrepreneurship education enhances human capital, its translation into entrepreneurial capability and developmental outcomes is mediated by institutional quality, pedagogical practices, and systemic supports. Nigerian polytechnics, situated within the Technical and Vocational Education and Training (TVET) framework, are examined as strategic sites for fostering employability, self-reliance, and innovation. However, weak industry linkages, underfunding, and limited experiential pedagogy constrain their effectiveness. The paper concludes that entrepreneurship education in polytechnics is neither inherently transformative nor redundant; its developmental relevance lies in its embeddedness within supportive ecosystems that align education, policy, and industrial strategy.

Keywords: *Entrepreneurship Education; Polytechnic Curriculum; Human Capital; Capability Approach; National Development.*

Introduction

Entrepreneurship education has increasingly been positioned as a cornerstone of national development strategies, particularly within developing economies grappling with high unemployment, industrial fragility, and widening skills mismatches. Across Africa, Asia, and Latin America, technical and vocational education institutions are being reformed to incorporate entrepreneurship training, with the expectation that graduates will acquire not only employable skills but also the capacity to create jobs, innovate, and contribute to broader socio-economic transformation (Akinyemi, 2013; Nabi *et al.*, 2017). Within the Nigerian context, polytechnics occupy a strategic niche as providers of practical, industry-oriented education; yet their role in cultivating entrepreneurship skills and translating these into national development outcomes remains under-theorised and contested (Adeoye *et al.*, 2023; Okoye & Okwelle, 2014).

Despite the growing emphasis on entrepreneurship education, the conceptual terrain remains ambiguous. The terms "entrepreneurship skills," "entrepreneurship education," and "entrepreneurship training" are often used interchangeably, even though they connote distinct orientations ranging from opportunity recognition and innovation to managerial competence and self-employment strategies (Henry *et al.*, 2005; Mitchelmore & Rowley, 2010). Similarly, while national development is frequently invoked as the ultimate outcome of entrepreneurship education, it is rarely clarified whether this refers to economic growth, industrialisation, social inclusion, or broader human development (Sen, 1999; Haq, 2003). These conceptual ambiguities weaken both theoretical debates and policy discourses, leading to overstated expectations about the transformative capacity of entrepreneurship education in polytechnic settings.

This paper therefore aims to provide conceptual clarification and synthesis regarding the integration of entrepreneurship skills acquisition into polytechnic curricula, with particular reference to its relevance for national development. Drawing on human capital theory, the capability approach, and systems of innovation perspectives, the paper interrogates the conditions under which entrepreneurship education in technical institutions can meaningfully contribute to developmental outcomes. Rather than proposing testable hypotheses, the analysis foregrounds conceptual distinctions, integrates insights from multiple theoretical traditions, and advances a conditional argument: entrepreneurship education in polytechnics has potential value for national development, but its effectiveness is contingent upon systemic supports and enabling environments.

Advancing this clarification and synthesis enables the authors contribute to theoretical debates in entrepreneurship, education, and development studies. It positions polytechnics not merely as providers of vocational skills but as potential agents within broader innovation and development ecosystems. The discussion also seeks to caution against deterministic policy narratives that equate entrepreneurship education with automatic developmental returns, instead encouraging a more nuanced and theoretically grounded understanding of the links between education, skills, and development.

* Corresponding author: aishatu.musa.yusuf@gmail.com

Conceptual Clarifications

Entrepreneurship Skills Acquisition

In the Nigerian context, entrepreneurship skills acquisition refers to structured learning experiences designed to foster self-reliance, job creation, and innovative problem-solving among graduates. Following policy reforms in the early 2000s, entrepreneurship education became compulsory in all tertiary institutions, including polytechnics, with the National Board for Technical Education (NBTE) issuing curriculum guidelines for its delivery (Osalor, 2016; Okoro & Okoro, 2013). Nigerian scholars note, however, that the integration of entrepreneurship skills in polytechnic curricula is uneven, with programmes often overly theoretical, insufficiently resourced, and disconnected from the realities of local markets (Ezeani, 2012; Ediagbonya, 2013). Conceptually, entrepreneurship skills acquisition in this setting goes beyond craft training; it encompasses entrepreneurial mindset, opportunity recognition, creativity, and resource mobilisation—all crucial in a labour market where wage employment is scarce.

Polytechnic (Technical) Curriculum

Polytechnics in Nigeria are part of the Technical and Vocational Education and Training (TVET) framework overseen by the NBTE. Their mandate is to provide middle- and high-level manpower for industry, commerce, and technology (NBTE, 2014). Unlike universities, polytechnic curricula are designed to be practice-oriented and competency-based, often involving a mandatory Student Industrial Work Experience Scheme (SIWES) to strengthen links between classroom knowledge and workplace application (Ayonmike *et al.*, 2015). Despite this, gaps persist: weak industry linkages, underfunding, and outdated teaching practices limit the capacity of polytechnics to deliver genuinely entrepreneurial outcomes (Olorunmolu, 2010). Thus, while the curriculum formally integrates entrepreneurship studies, the translation into entrepreneurial competences depends heavily on teaching methods, industry collaboration, and institutional support.

National Development

In Nigeria, national development is typically articulated in policy frameworks such as the *National Economic Empowerment and Development Strategy (NEEDS)* and *Vision 20:2020*, where human capital and entrepreneurship are prioritised as engines of growth and poverty reduction. Development is framed in terms of economic diversification (reducing dependence on oil), employment creation (particularly for youth), and fostering innovation-driven industrialisation (Adebayo & Kolawole, 2013). A capability approach perspective extends this by arguing that development should also expand people's freedoms to pursue valued livelihoods, not merely generate GDP growth (Sen, 1999). Within this framing, polytechnic-based entrepreneurship education is seen as both an economic and social imperative: it equips individuals with tools for self-reliance while potentially generating collective developmental benefits through enterprise creation and local innovation.

Theoretical anchors and boundaries

The first theoretical anchor, human capital theory, situates entrepreneurship skills acquisition as an investment that enhances individual productivity and national competitiveness (Becker, 1993). In the Nigerian context, this framing is particularly relevant given the persistent challenge of graduate unemployment and underemployment. Policymakers view entrepreneurship education in polytechnics as a mechanism to increase the economic value of graduates by equipping them with competences that improve employability and entrepreneurial readiness (Adebayo & Kolawole, 2013). However, while human capital theory justifies state-led curriculum reform, it also faces limitations: it risks reducing education to a narrow economic utility and overlooks the social, cultural, and structural barriers that constrain the translation of skills into meaningful livelihoods (Psacharopoulos & Patrinos, 2018). Thus, while valuable, this lens must be complemented by perspectives that account for broader developmental dimensions.

The capability approach provides such a complementary perspective by shifting the analytical focus from skills as economic inputs to the freedoms and opportunities individuals possess to lead lives they value (Sen, 1999; Walker & Unterhalter, 2007). Entrepreneurship education, from this viewpoint, is not merely about enhancing employability but about expanding human agency, creativity, and resilience. In Nigeria, where structural inequalities limit the prospects of women, rural populations, and marginalised youth, the capability approach highlights the potential of entrepreneurship education to foster alternative livelihoods, strengthen autonomy, and broaden social participation (Nussbaum, 2011). This theoretical framing underscores that the developmental relevance of entrepreneurship education lies not only in generating income but also in empowering individuals to exercise agency in diverse social and economic contexts.

The systems of innovation perspective extends the analysis to the institutional and structural environment in which entrepreneurship occurs (Lundvall, 1992; Oyelaran-Oyeyinka, 2006). Polytechnics are conceptualised as nodes within Nigeria's wider innovation ecosystem, linking skill formation to industrial activity and national development strategies (Akinyemi, 2014). However, weak industry linkages, policy incoherence, and infrastructural deficits constrain their capacity to function effectively in this role. Entrepreneurship education, therefore, contributes to development only when it is embedded in enabling ecosystems that provide access to finance, supportive industrial policies, mentorship structures, and innovation networks (Osalor, 2016). This perspective underscores the conditionality of outcomes: entrepreneurship education is neither inherently transformative nor redundant, but its developmental impact depends on institutional integration and systemic support.

Distinguishing Entrepreneurship from Technical Skills

Finally, Nigerian evidence suggests a common conflation of technical/vocational skills (e.g., carpentry, welding, ICT) with entrepreneurial skills (creativity, risk-taking, opportunity recognition). Studies highlight that while polytechnic graduates may excel in technical competence, they often lack entrepreneurial competences to convert skills into sustainable ventures (Okoro & Okoro, 2013; Ediagbonya, 2013). Therefore, a nuanced conceptual clarification is critical: technical skills provide the *means* of production, but entrepreneurship skills provide the *logics of innovation and value creation*. Without integration, the curriculum risks producing skilled job seekers rather than job creators.

Synthesis and Conceptual Argument

The foregoing conceptual clarifications allow us to articulate the theoretical pathways through which entrepreneurship skills acquisition in polytechnic curricula can contribute to national development in Nigeria. Three interrelated levels of analysis are particularly salient: individual-level competences, institutional-

level translation mechanisms, and system-level development outcomes.

From Individual Competences to Employability and Entrepreneurial Potential

At the individual level, entrepreneurship education in polytechnics is expected to endow graduates with competences such as opportunity recognition, resource mobilisation, innovation, and resilience (Nabi *et al.*, 2017). In Nigeria, where graduate unemployment and underemployment remain pressing, these competences are conceptualised as enhancing both employability (capacity to secure and retain work) and entrepreneurial potential (capacity to initiate and sustain ventures). Empirical evidence from Nigerian polytechnic contexts suggests, however, that without adequate experiential pedagogy and mentoring, graduates often acquire theoretical knowledge of entrepreneurship without practical mastery (Ediagbonya, 2013; Okoro & Okoro, 2013). This underscores the conceptual distinction between skills as *inputs* (human capital) and the actual *capabilities* (freedoms) to deploy them productively, a distinction central to Sen's (1999) capability approach.

Institutional Mechanisms of Translation

Entrepreneurship skills only contribute to development when supported by appropriate institutional mechanisms. Nigerian polytechnics, through structures such as the SIWES and the NBTE's mandated entrepreneurship courses, are intended to act as intermediaries between classroom learning and real-world economic participation (NBTE, 2014; Ayonmike *et al.*, 2015). Yet, institutional shortcomings—weak industry linkages, inadequate funding, and outdated pedagogical practices—often limit the effective translation of acquired skills into entrepreneurial activity (Olorunmolu, 2010). Conceptually, this resonates with the systems of innovation perspective, which posits that learning outcomes depend not only on individual investment in skills but also on the strength of linkages among educational institutions, firms, financial systems, and policy regimes (Lundvall, 1992; Oyelaran-Oyeyinka, 2006).

From Entrepreneurship Activity to National Development Outcomes

At the systemic level, the expectation is that entrepreneurship-driven graduates will create ventures, stimulate job creation, and contribute to broader development goals such as economic diversification and poverty reduction (Adebayo & Kolawole, 2013). However, Nigerian evidence points to a paradox: while there has been an expansion of small-scale enterprises, many remain survivalist in nature, with limited innovation or scalability (Olawale & Garwe, 2010). This raises a conceptual caution against equating entrepreneurship education with automatic developmental gains. Developmental impact is contingent on ecosystemic enablers—access to finance, supportive infrastructure, industrial policies, and market opportunities (Akinyemi, 2014; Osalor, 2016). Thus, the relationship between entrepreneurship education and national development is best conceived as *conditional* rather than linear.

Integrative Conceptual Argument

The first argument highlights that while entrepreneurship education in polytechnics enhances human capital, this alone is insufficient for producing entrepreneurial capability. Human capital theory underscores the value of knowledge and skills as productivity-enhancing investments (Becker, 1993). However, in practice, graduates often emerge with theoretical understanding but lack the practical competences needed to launch and sustain ventures. Experiential pedagogy—such as project-based learning, incubator schemes, mentorship, and industry engagement—is therefore critical for bridging the gap between formal instruction and real-world entrepreneurial practice (Nabi *et al.*, 2017). Moreover, ecosystemic supports such as access to finance, networks, and enabling regulatory environments determine whether enhanced human capital translates into entrepreneurial action (Osalor, 2016). Without these supports, polytechnics risk producing skilled but underutilised graduates whose entrepreneurial potential remains dormant.

The second argument emphasises the role of institutional arrangements as mediating mechanisms. Entrepreneurship education does not occur in a vacuum; its effectiveness depends on how curricula are designed, how industry partnerships are cultivated, and how experiential platforms like the Student Industrial Work Experience Scheme (SIWES) are implemented (Ayonmike *et al.*, 2015; NBTE, 2014). Well-designed curricula that integrate entrepreneurial competences into technical disciplines can foster problem-solving and innovation, while weak or outdated programmes may reduce entrepreneurship education to abstract rhetoric (Ediagbonya, 2013). Similarly, strong industry linkages provide students with opportunities to apply their knowledge in practice, learn market realities, and build professional networks. These institutional arrangements therefore serve as critical mediators, shaping the degree to which individual competences coalesce into collective developmental outcomes such as job creation, innovation, and community resilience.

The third argument situates entrepreneurship education within the broader system of innovation and development policy environment. Even when individual skills are strengthened and institutional supports are present, the translation of entrepreneurship education into national development outcomes remains conditional upon systemic factors (Lundvall, 1992; Oyelaran-Oyeyinka, 2006). These include the coherence of industrial policies, access to infrastructure, the vibrancy of financial systems, and the presence of innovation networks that connect polytechnics, firms, and government agencies. In Nigeria, systemic weaknesses—such as fragmented policies, underdeveloped credit markets, and infrastructural deficits—undermine the scaling and sustainability of entrepreneurial ventures (Adeoye *et al.*, 2023; Akinyemi, 2014). The implication is that entrepreneurship education must be strategically embedded within national innovation and development frameworks. Only then can it contribute meaningfully to structural transformation, economic diversification, and inclusive growth.

This synthesis reframes the relevance of integrating entrepreneurship skills acquisition in polytechnic curricula as neither inherently transformative nor redundant, but as contextually mediated. It extends human capital theory by incorporating capability and systems perspectives, thereby offering a more nuanced conceptual account of how education contributes—or fails to contribute—to development outcomes in Nigeria.

Implications

Theoretical Implications

This paper contributes to the theoretical discourse on entrepreneurship education and development by advancing a conditionality perspective. Whereas much of the literature has assumed a direct link between entrepreneurship education and

national development (e.g., Adebayo & Kolawole, 2013), the synthesis presented here highlights the mediating role of institutional and systemic factors. This reframing aligns with and extends human capital theory (Becker, 1993), which traditionally emphasises education as an investment yielding productivity gains, by incorporating Amartya Sen's (1999) capability approach and the systems of innovation framework (Lundvall, 1992; Oyelaran-Oyeyinka, 2006). Theoretically, this suggests that entrepreneurship education in polytechnics should not be conceptualised merely as a linear input–output process, but as a capability-enhancing intervention whose developmental returns are contingent on ecosystemic conditions.

Policy Implications

At the policy level, the analysis underscores the need for a holistic approach to curriculum integration. Entrepreneurship skills acquisition in polytechnics cannot achieve developmental impact in isolation from supportive institutional arrangements. Nigerian policymakers should therefore strengthen linkages between polytechnics, industry, and financial systems (Ayonmike *et al.*, 2015). The SIWES and the NBTE entrepreneurship mandate should be better funded and designed to provide practical exposure, mentoring, and incubation opportunities. Furthermore, broader development policies—such as access to credit, infrastructure, and industrial policies—must complement educational reforms to avoid the emergence of "survivalist entrepreneurship" that neither scales nor innovates (Olawale & Garwe, 2010; Osalor, 2016). Such policy realignments would position entrepreneurship education as a catalyst for economic diversification and sustainable development in Nigeria.

Research Implications

The conceptual clarifications advanced here also open avenues for empirical investigation. Three research priorities emerge. First, future studies should examine the translation mechanisms—curriculum design, pedagogy, and institutional linkages—through which entrepreneurship skills are converted into entrepreneurial action and development outcomes. Second, there is a need for longitudinal research to assess whether entrepreneurship-trained graduates in polytechnics demonstrate different trajectories of employability, venture creation, or resilience compared to peers without such exposure (Nabi *et al.*, 2017). Third, comparative studies across different Nigerian polytechnics, and between polytechnics and universities, could illuminate contextual differences in outcomes, thereby enriching the conditionality argument. Addressing these research gaps will allow for a more grounded assessment of whether, and under what conditions, entrepreneurship education drives national development in fragile economies like Nigeria.

Conclusion

This paper has sought to clarify and synthesise the theoretical relevance of integrating entrepreneurship skills acquisition into the polytechnic curriculum for national development. Drawing upon human capital theory, the capability approach, and the systems of innovation perspective, the analysis demonstrates that entrepreneurship education should not be understood as a self-sufficient lever of transformation, but rather as a component of a wider developmental ecosystem. Its effectiveness is contingent on the presence of supportive institutional, economic, and policy environments.

In advancing this conditionality perspective, the paper contributes to ongoing debates on the role of technical and vocational education in shaping pathways of inclusive growth and structural transformation. The paper highlights the potential of entrepreneurship education to enhance graduates' adaptive capabilities, stimulate innovation, and support the diversification of fragile economies by foregrounding polytechnics as critical sites for practical, industry-linked skills development. However, such potential can only be realised when curricula are embedded within broader policies that strengthen industry linkages, expand access to finance and infrastructure, and promote a culture of innovation.

The conceptual clarifications offered here have implications for theory, policy, and research. Theoretically, they challenge linear assumptions that equate entrepreneurship education with automatic developmental returns, suggesting instead that outcomes are mediated by systemic conditions. For policymakers, the findings call for a holistic approach that aligns curriculum reform with industrial and innovation strategies. For researchers, the paper provides a platform from which to examine empirically the pathways through which entrepreneurship education influences employability, venture creation, and national development.

Ultimately, the integration of entrepreneurship skills acquisition in the polytechnic curriculum holds significant promise for advancing Nigeria's developmental aspirations. Yet this promise will remain unrealised unless the initiative is pursued in concert with systemic reforms that transform educational inputs into meaningful developmental outcomes. The paper therefore calls for continued scholarly engagement with the theoretical foundations of entrepreneurship education, while also urging policymakers and practitioners to view polytechnic entrepreneurship curricula not as an end in themselves, but as a strategically embedded component of a broader national development agenda.

References

Adebayo, A. A., & Kolawole, A. O. (2013). Entrepreneurship education: A panacea for unemployment, poverty reduction and national insecurity in Nigeria. *Journal of Business and Management, 11*(1), 1–7.

Akinyemi, S. (2013). Technical and vocational education (TVE) in Nigeria: Issues, challenges and a way forward. *Journal of Education and Social Research, 3*(4), 19–25. https://doi.org/10.5901/jesr.2013.v3n4p19

Akinyemi, S. (2014). Technical and vocational education: A tool for national development in Nigeria. *Mediterranean Journal of Social Sciences, 5*(23), 313–318. https://doi.org/10.5901/mjss.2014.v5n23p313

Ayonmike, C. S., Okwelle, P. C., & Okeke, B. C. (2015). Towards quality technical vocational education and training (TVET) programmes in Nigeria: Challenges and improvement strategies. *Journal of Education and Learning, 4*(1), 25–34. https://doi.org/10.5539/jel.v4n1p25

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. New York, NY: Columbia University Press/NBER.

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). Chicago, IL: University of Chicago Press.

Ediagbonya, K. (2013). The roles of entrepreneurship education in ensuring sustainable development in Nigeria. *Journal of Business Administration and Education, 4*(1), 35–46.

Ezeani, N. S. (2012). The teacher and skills acquisition at business education: From the perspective of accounting skills. *Arabian Journal of Business and Management Review (OMAN Chapter), 2*(4), 25–36.

Haq, M. (2003). *The human development paradigm*. In S. Fukuda-Parr & A. K. Shiva Kumar (Eds.), *Readings in human development* (pp. 17–34). Oxford University Press.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part I. *Education + Training, 47*(2), 98–111. https://doi.org/10.1108/00400910510586524

Lundvall, B.-Å. (1992). *National systems of innovation: Towards a theory of innovation and interactive learning*. London, UK: Pinter.

Mitchelmore, S., & Rowley, J. (2010). Entrepreneurial competencies: A literature review and development agenda. *International Journal of Entrepreneurial Behavior & Research, 16*(2), 92–111. https://doi.org/10.1108/13552551011026995

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education, 16*(2), 277–299. https://doi.org/10.5465/amle.2015.0026

NBTE. (2014). *Directory of accredited programmes offered in polytechnics, monotechnics and colleges of technology in Nigeria*. Kaduna, Nigeria: National Board for Technical Education.

Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Cambridge, MA: Harvard University Press.

Okoro, C. O., & Okoro, O. (2013). Entrepreneurship education in Nigeria: A panacea for youth unemployment and national insecurity. *Journal of Educational and Social Research, 3*(10), 155–158. https://doi.org/10.5901/jesr.2013.v3n10p155

Okoye, K. R. E., & Okwelle, P. C. (2014). Technical and vocational education and training (TVET) in Nigeria and energy development, marketing and national transformation. *Journal of Education and Practice, 5*(14), 92–96. https://eric.ed.gov/?id=EJ1079872

Olawale, F., & Garwe, D. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management, 4*(5), 729–738.

Olorunmolu, D. O. (2010). The challenges of entrepreneurship education programme in Nigeria tertiary institutions. *The Nigerian Academic Forum, 19*(1), 1–6.

Adeoye, M. A., Mahmud, M. A., Ehindero, R. E., Ajape, R. O., Yahaya, A. K., & Jolaoye, J. D. (2023). From flawed to flourishing: Reshaping the Nigerian curriculum for sustainable national development. *Journal of Education Action Research*, *7*(4), 621-627. https://doi.org/10.23887/jear.v7i4.67812

Osalor, P. (2016). Entrepreneurship education in Nigeria: Solution to youth unemployment. *International Journal of Social Sciences and Humanities Reviews, 6*(2), 162–170.

Oyelaran-Oyeyinka, B. (2006). *Learning to compete in African industry: Institutions and technology in development*. Aldershot, UK: Ashgate.

Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. *Education Economics, 26*(5), 445–458. https://doi.org/10.1080/09645292.2018.1484426

Sen, A. (1999). *Development as freedom*. Oxford, UK: Oxford University Press.

Walker, M., & Unterhalter, E. (Eds.). (2007). *Amartya Sen's capability approach and social justice in education*. Basingstoke, UK: Palgrave Macmillan.