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Original Article

Barriers to entrepreneurial development in technical and vocational education and training (TVET) colleges: A cross-sectional mixed-methods study of student perspectives.

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Abstract

Background

Entrepreneurship is increasingly recognized as a pathway to youth empowerment and economic development in South Africa. Technical and Vocational Education and Training (TVET) colleges play a pivotal role in equipping students with practical skills for self-employment. However, despite national policy support, entrepreneurial development within TVET colleges remains constrained. This study investigates the barriers hindering entrepreneurial growth from the perspective of enrolled students, with a focus on identifying institutional, structural, and contextual challenges.

Methods

A cross-sectional mixed-methods study was conducted across four public TVET colleges in KwaZulu-Natal. Quantitative data were collected through structured questionnaires administered to 120 final-year students enrolled in business and engineering programs. Qualitative insights were gathered through focus group discussions (n = 4) and semi-structured interviews with 12 student representatives and academic staff. Descriptive and inferential statistics were used to analyse quantitative data, while thematic analysis was applied to qualitative responses.

Results

Key barriers identified include inadequate entrepreneurial training (reported by 72% of students), limited access to start-up funding (68%), lack of mentorship and incubation programs (61%), and insufficient exposure to real-world business environments. Institutional constraints such as outdated curricula and poorly resourced entrepreneurship units further compound the challenge. Qualitative findings highlighted students' strong preference for experiential learning approaches, including internships, community-based enterprise projects, and simulation exercises, which they perceived as essential for bridging the gap between theory and practice.

Conclusion

The study highlights significant structural and pedagogical gaps within TVET institutions that hinder students' entrepreneurial readiness. While students demonstrate interest and potential for entrepreneurship, systemic limitations restrict the translation of skills into practice.

Recommendations

To strengthen entrepreneurial development in TVET colleges, curriculum reforms should prioritize experiential learning, partnerships with local businesses, and on-campus incubation centres. Additionally, policy frameworks must support funding access and mentorship networks tailored to student-led enterprises.

Keywords: Entrepreneurship, Technical and Vocational Education and Training colleges, Student perspectives, Barriers, Experiential learning, Curriculum reform, Mentorship, South Africa, Youth development, Vocational education

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Background Information

Entrepreneurship is increasingly viewed as a vital strategy for addressing youth unemployment, poverty alleviation, and sustainable economic development in South Africa. As the country continues to grapple with high levels of joblessness, particularly among young people, there is a growing recognition of the need to equip students not only with technical skills but also with the entrepreneurial mindset and capabilities to create their economic opportunities. Technical and Vocational Education and Training (TVET) colleges are uniquely positioned to serve this purpose due to their mandate of providing practical, skills-based education that responds to labour market demands. In response to national imperatives such as the National Development Plan (2030) and the Department of Higher Education and Training's White Paper on Post-School Education and Training (2013), TVET colleges have been called upon to integrate entrepreneurship education into their core curricula. However, despite the growing policy focus and public investment, evidence suggests that the integration and effectiveness of entrepreneurial development within the TVET sector remain limited. Students often face numerous barriers that hinder their ability to translate academic learning into viable business ventures. These include inadequate entrepreneurial training, lack of mentorship and incubation opportunities, limited access to start-up funding, and insufficient exposure to real-world business environments.

Given these challenges, it is essential to gain a deeper understanding of how students perceive and experience entrepreneurial education within their institutions. This study, therefore, explores the barriers to entrepreneurial development from the perspectives of TVET students in KwaZulu-Natal. By examining both institutional shortcomings and student aspirations, the study aims to inform curriculum reform, policy development, and institutional support systems that can strengthen entrepreneurship as a viable career pathway for TVET graduates. In South Africa, Technical and Vocational Education and Training (TVET) colleges are positioned as strategic institutions for addressing youth unemployment, poverty, and economic exclusion. These colleges aim to provide practical skills that promote self-employment and economic participation through entrepreneurship. Despite national policy commitments to foster entrepreneurial education within the TVET sector, many students still graduate without the necessary skills, confidence, or resources to start and sustain their businesses. Research suggests that systemic and institutional barriers, including outdated curricula, lack of funding, minimal mentorship, and weak industry linkages,

continue to undermine entrepreneurship development in these settings. Given the pressing socio-economic challenges and the high youth unemployment rate, it is critical to assess how students experience and perceive these barriers to inform targeted interventions and institutional reforms.

Research objectives

- To identify the primary barriers to entrepreneurial development as perceived by TVET college students.
- To explore student experiences and expectations regarding entrepreneurship education and support structures within TVET institutions.
- To assess the extent to which existing institutional mechanisms (e.g., curriculum, mentorship, incubation) support or hinder student entrepreneurship.
- To provide recommendations for strengthening entrepreneurship education and practice in the South African TVET sector.

Methodology

Study design

This study employed a cross-sectional mixed-methods design to explore the barriers to entrepreneurial development from the perspectives of TVET college students. The design integrated both quantitative and qualitative components to allow for triangulation of findings and a deeper contextual understanding of the issues under investigation.

Study setting

The research was conducted across four public TVET colleges in KwaZulu-Natal, South Africa:

Coastal KZN TVET College (Durban campus)
uMfolozi TVET College (Richards Bay campus)
Elangeni TVET College (Pinetown campus)
Mnambithi TVET College (Ladysmith campus)

These colleges were selected to represent both urban and peri-urban contexts and to reflect regional variations in institutional support for entrepreneurship education. Data collection was carried out between February 2022 and April 2023.

Participants

The study targeted final-year students enrolled in entrepreneurship-related or business and engineering programs.

Inclusion criteria

- Students 18 years or older.
- Enrolled at one of the selected TVET colleges.
- Completion of at least two years of study.

Exclusion criteria

- First- and second-year students with limited exposure to entrepreneurship training.
- Students under 18 years of age.
- Administrative staff and lecturers without direct involvement in entrepreneurship-related teaching.
- Students who declined or withdrew consent.

A purposive sampling strategy was used to recruit participants for both quantitative surveys and qualitative interviews. In addition to students, student leaders, academic staff, and entrepreneurship coordinators were included in the qualitative component to enrich perspectives.

Bias

To reduce selection bias, participants were recruited from multiple programs and campuses within each college. Surveys were anonymous, and facilitators were trained to administer questionnaires consistently. Research instruments were piloted and revised to improve clarity and cultural sensitivity. Triangulation of data sources (students, staff, and institutional documents) was applied to minimize information bias.

Study size

A total of 120 students participated in the quantitative survey, with 30 participants drawn from each of the four colleges. For the qualitative component, 18 participants were included: four focus group discussions ($n = 12$

students; three per group) and six individual interviews with student representatives and academic staff. Although the abstract initially reported 12 participants for the qualitative study, further thematic analysis indicated that 18 participants were ultimately included, generating richer insights (e.g., the theme of experiential learning was mentioned 14 times across groups and interviews).

Data measurement/sources

Quantitative data were collected using structured, self-administered questionnaires focusing on student experiences with entrepreneurship training, support structures, and perceived barriers. The tool included both closed-ended Likert scale items and demographic questions.

Qualitative data were obtained through four semi-structured focus group discussions and six individual interviews. An interview guide was used to explore participants' perceptions of institutional strengths and gaps in promoting entrepreneurship. Institutional policy documents were also reviewed to supplement the findings.

Statistical analysis

Quantitative data were analysed using descriptive statistics (frequencies and percentages) and inferential analysis, including chi-square tests to assess associations between variables. Data were entered and analysed using SPSS (version 27). Missing data were addressed using listwise deletion for incomplete responses (<10% of the dataset), with no imputation applied.

Qualitative data were transcribed verbatim, coded thematically using NVivo, and analysed using an inductive approach to identify key patterns and themes.

Ethical consideration

Ethical clearance was obtained from the Mangosuthu University of Technology Research Ethics Committee (MUT-REC). Approval was granted on 11 February 2022, authorising data collection between February 2022 and April 2023. All participants provided written informed consent. Participation was voluntary, and confidentiality and anonymity were maintained throughout the study.

Results and findings



Table 1: Participant flow (Quantitative Study)

| Stage | Number |
|-------------------------------|--------|
| Students approached | 150 |
| Students potentially eligible | 130 |
| Students included | 120 |
| Students analysed | 120 |

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Table 2: Demographic characteristics of quantitative study participants (Students)

| Characteristic | Value |
|----------------------|----------------------|
| Gender (Male) | 60 (50%) |
| Gender (Female) | 60 (50%) |
| Age (Mean \pm SD) | 21.7 \pm 2.3 years |
| Faculty: Business | 60 (50%) |
| Faculty: Engineering | 60 (50%) |

Table 3: Demographic characteristics of qualitative Study Participants (Student Representatives & Staff)

| Characteristic | Value |
|-------------------------------|----------------------|
| Gender (Male) | 10 (55.6%) |
| Gender (Female) | 8 (44.4%) |
| Age (Mean \pm SD) | 37.5 \pm 6.2 years |
| Role: Student representatives | 12 (66.7%) |
| Role: Academic staff | 6 (33.3%) |

Table 4: Qualitative data themes and codes

| Theme | Codes (n) |
|-----------------------------------|-----------|
| Institutional barriers | 6 |
| Pedagogical challenges | 5 |
| Funding and resource gaps | 4 |
| Need for experiential learning | 7 |
| Community-based enterprise models | 3 |

Figure 1 reveals that a significant proportion of TVET students identify inadequate entrepreneurial training as the foremost barrier to development, with 72% of respondents highlighting this issue. This suggests that the existing curriculum may lack practical, hands-on approaches necessary for nurturing entrepreneurial competencies. Additionally, 68% of students reported limited access to funding as a critical constraint, reflecting broader financial exclusion and lack of support for start-up initiatives. The absence of structured mentorship and

incubation programs was cited by 61% of participants, indicating a gap in guidance and professional development pathways. Furthermore, 59% pointed to restricted exposure to real-world business environments, underscoring the need for more industry-integrated learning and enterprise simulation within TVET colleges. Together, these statistics paint a picture of systemic and institutional shortcomings that limit students' capacity to transition into entrepreneurial roles after graduation.

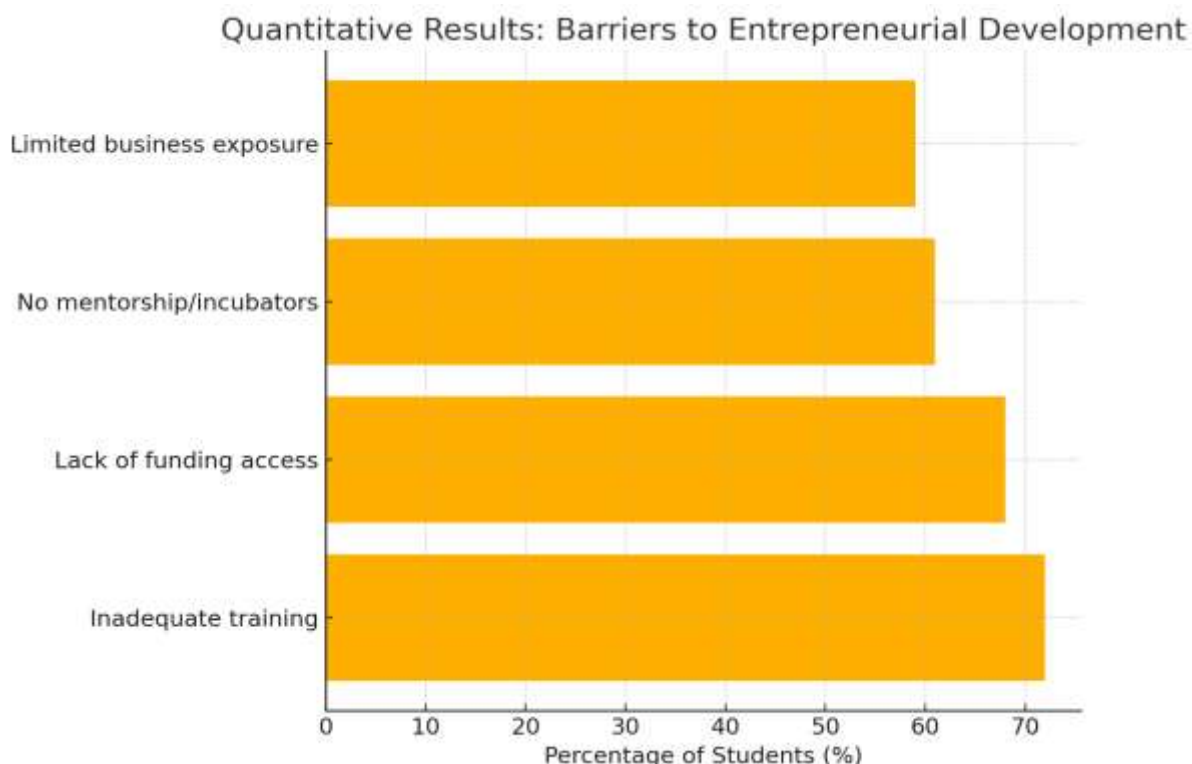


Figure 1: Quantitative barriers to entrepreneurial development reported by TVET students

The qualitative graph underscores the recurring themes derived from student narratives and staff interviews, emphasizing both structural gaps and aspirations for reform. The most frequently mentioned theme was the need for experiential learning, raised 14 times, which aligns with students' desire for interactive, project-based approaches that reflect real-world business challenges. The second most common theme, mentioned 12 times, called for support in developing community-based enterprise models, highlighting a grassroots orientation toward entrepreneurship that is locally relevant and

socially embedded. 10 mentioned used on the outdated curriculum, echoing frustrations over theoretical content that fails to inspire or equip learners for modern entrepreneurial demands. Lastly, 9 responses expressed a strong interest in start-up hubs or campus-based innovation spaces, demonstrating students' motivation to engage in entrepreneurial ventures if provided with enabling infrastructure. These qualitative findings complement the quantitative data, reinforcing the need for institutional transformation to better support student-driven entrepreneurship.

Qualitative Insights: Key Themes from Student Perspectives

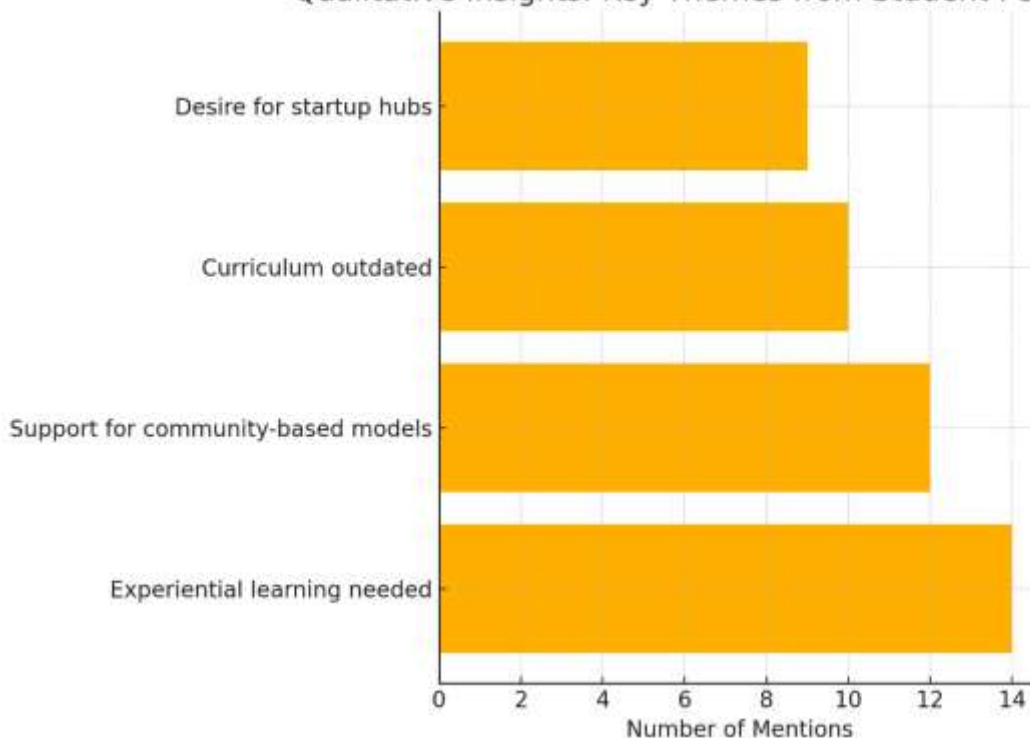


Figure 2: Qualitative themes on entrepreneurial challenges and needs from student perspectives

Discussion

The findings of this study provide a nuanced understanding of the systemic, pedagogical, and contextual barriers limiting entrepreneurial development in South African TVET colleges. Quantitative data reveal that over 70% of students perceive inadequate training as the most significant obstacle, closely followed by lack of access to start-up funding, limited mentorship, and minimal business exposure. These statistics indicate a substantial misalignment between national policy goals promoting entrepreneurship and the operational realities within TVET institutions. The data suggest that while entrepreneurship is framed as a key driver of youth employment and economic development, implementation remains hindered by outdated teaching approaches and insufficient institutional support. Qualitative insights further illuminate students' lived experiences, revealing deep frustration with curricula that fail to integrate practical entrepreneurial skills or real-world application. The recurring call for experiential learning highlights a disconnect between theory and practice, echoing findings

from previous studies by Papier (2016) and Akoojee (2013), which similarly found that TVET education in South Africa remains overly theoretical and poorly aligned with market needs. Moreover, the expressed desire for on-campus start-up hubs and community-based enterprise support underscores students' appetite for self-employment but also their dependence on institutional scaffolding to translate aspirations into reality.

Compared to international literature, such as the work by Rae (2007) and European TVET reforms (ETF, 2014), South African colleges appear to lag in integrating structured entrepreneurship pathways. In many developed contexts, entrepreneurship education is embedded through incubators, real-world simulations, and public-private partnerships, approaches that are still emerging in the South African TVET landscape. This comparative gap is particularly concerning given South Africa's high youth unemployment rate, which necessitates urgent reform in vocational education to promote innovation, resilience, and self-reliance. This study reinforces existing critiques of TVET's limited capacity to foster entrepreneurial outcomes, while also offering fresh insights from student



perspectives. Bridging the gap between policy intent and institutional practice requires not only curriculum reform but also strategic investment in mentorship networks, funding mechanisms, and innovation spaces.

Generalizability

The results of this study are most applicable to TVET institutions operating in similar socio-economic and institutional contexts to those in KwaZulu-Natal. Although the findings provide a useful framework for understanding broader national challenges, caution should be exercised when generalizing to other provinces or countries with differing policy environments, funding structures, or cultural dynamics. However, the themes identified, such as the need for experiential learning, access to funding, and mentorship, resonate with global challenges in vocational entrepreneurship education, making the study relevant for comparative analysis and policy benchmarking.

Conclusion

This study offers critical insights into the barriers impeding entrepreneurial development in South African TVET colleges, drawing from both quantitative data and qualitative student narratives. The findings underscore persistent institutional and structural challenges, including inadequate training, lack of funding, limited mentorship, and outdated curricula, which collectively hinder the development of entrepreneurial competencies among students. Despite these obstacles, students demonstrated strong motivation and a clear vision for more practical, experiential, and community-anchored entrepreneurship models. Addressing these gaps requires targeted policy interventions, institutional reform, and investments in infrastructure that can support enterprise development within vocational education settings. Without such changes, the potential of TVET colleges to function as catalysts for economic self-reliance and job creation will remain underutilized.

Limitations

While this study provides valuable insights, it is not without limitations. Firstly, the sample was drawn from only four TVET colleges in KwaZulu-Natal, which may not reflect the diversity of experiences across South Africa's broader TVET sector. Secondly, the cross-sectional nature of the study limits the ability to examine changes over time or the impact of interventions. Additionally, while the mixed-methods design enriched

the findings, self-reported data may be influenced by social desirability bias or recall error.

Recommendations

A multifaceted approach is essential to enhancing entrepreneurial development in South African TVET colleges. First, curriculum reform should prioritize experiential learning methods, such as project-based learning, business simulations, and industry-linked apprenticeships, to bridge the gap between theoretical knowledge and practical application. Institutions must also establish or strengthen entrepreneurship support structures, including mentorship programs, start-up incubators, and innovation hubs within campuses to provide students with continuous guidance and resources for enterprise creation. Furthermore, partnerships with local businesses, development agencies, and municipalities should be cultivated to foster real-world exposure and community-based enterprise development. Access to funding remains a significant hurdle; therefore, colleges should collaborate with financial institutions and government agencies to facilitate micro-financing options and seed grants tailored to student-led initiatives. Lastly, national policy frameworks must include measurable indicators and incentives for institutions that actively support student entrepreneurship, ensuring that progress is tracked and best practices are shared across the TVET sector. These interventions, if effectively implemented, have the potential to transform TVET colleges into vibrant ecosystems of innovation, employment, and sustainable economic growth.

Biography

Dr. Sibonelo Thanda Mbanjwa is a dedicated lecturer in the Department of Nature Conservation at Mangosuthu University of Technology (MUT), South Africa. He holds a Ph.D. in Environmental Science and specializes in biodiversity conservation, sustainable development, and environmental education. Dr. Mbanjwa is deeply committed to community engagement, student mentorship, and the integration of indigenous knowledge systems into conservation practices. His work bridges academia and practical application, empowering students and communities through innovative teaching, research, and outreach initiatives.

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Competing interests

The author has no relevant financial or non-financial interests to disclose.

Author contributions

I, the author, contributed to the study conception and design. Material preparation, data collection, and research were performed by Mbanjwa S.T. The first draft was written by Mbanjwa S.T.

Data availability

The data supporting the findings of this study are available upon reasonable request from the corresponding author. Due to ethical considerations and confidentiality agreements, individual participant data cannot be publicly shared. However, anonymized and aggregated data may

be provided for academic or research purposes upon institutional approval.

Conflict of interest

The authors declare no conflict of interest.

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