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ENTREPRENEURSHIP EDUCATION IN THE TECHNICAL VOCATIONAL EDUCATION AND TRAINING COLLEGE SECTOR**Ntokozo Gwala ¹, Steven Kayambazinthu Msosa ^{2*}, Bright Mhlongo ³**^{1,2*,3} Mangosuthu University of Technology, South AfricaE-mails: ¹ Gwala.ntokoza@mut.ac.za; ^{2*} Kayambazinthu@outlook.com (Corresponding author); ³ Bright@mut.ac.za

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Abstract. Technical Vocational Education and Training (TVET) colleges are essential for helping young people receive vocational training in a variety of trades, thereby boosting economic expansion and reducing unemployment. Thus, TVET colleges play a crucial role in preparing South African youths for entrepreneurship. This study sought to analyse the supply side of entrepreneurship education in the TVET college sector. The study adopted a quantitative, descriptive research design to collect data from a random sample of 106 lecturers. Given that entrepreneurship is a component of most business courses offered by colleges, the results demonstrate that TVET institutions were well-positioned to invest in entrepreneurship courses. Additionally, the faculty who taught business studies and entrepreneurship were well-equipped, with capable administrators and the necessary instructional materials at their disposal. The results also revealed that TVET institutions, despite their having capabilities, faced certain challenges. These include, among other things, available funds, management support, and a lack of passion among certain students, which hinders the effective delivery of entrepreneurship courses and limits student engagement and success. The study suggested that rather than considering entrepreneurship as a quick course or a single module, it would be necessary to introduce the subject at the elementary level of post-secondary education. Therefore, TVET colleges must consider integrating entrepreneurship into their core curriculum rather than merely adding it to existing business courses. This could be accomplished by undertaking a consultative process with external experts in entrepreneurship and by establishing terms of reference that include researching the course material for entrepreneurship courses offered by accredited institutions.

Keywords: entrepreneurship; TVET college; higher education; curriculum

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JEL Classifications: L26, L3, I23**Additional disciplines:** educology**1. Introduction**

The government and the Department of Higher Education have taken note of the role that Technical Vocational Education and Training (TVET) colleges, also known as Ex FETs, play in providing the intermediate-level skills the nation needs to advance the National Development Plan (Sebola, 2022). Given the tremendous unemployment that the nation suffers, particularly among young people, young South Africans must be given the tools they need to support themselves. Thus, entrepreneurship entails starting businesses that provide people with the goods and services they need and generate employment; hence, it is crucial to recognise that entrepreneurship is a topic of immense significance and relevance to any economy. The goal of the entrepreneurship course or module is to stimulate students' enthusiasm for entrepreneurship so they can return to their communities and start new firms, grow existing ones, and create much-needed jobs in their countries (Msosa & Radebe, 2022). An admirable step towards empowering the youth is the South African government's plan to require TVET colleges to formalise

entrepreneurship courses. TVET institutions' entrepreneurship curricula place strong emphasis on the value of starting with little and using it to create something valuable, such as a firm or enterprise. Resources are obviously crucial, but a lack of them can still hamper entrepreneurship (Gamede & Uleanya, 2019). TVET colleges' curricula need to address the resource availability gap adequately. The primary goal of entrepreneurship in higher education is to provide goods and services that benefit people, communities, organisations, and society. Therefore, it is critical to remember that entrepreneurship is all about creating sustainable cash flow streams and long-term value, and what makes it so exciting is that it can be built from scratch. Thus, with the right instruction and preparation, people can be inspired to become bold, imaginative, and dynamic (Smith, 2020).

Public TVET institutions have a major role to play in imparting the entrepreneurial skills needed to achieve the National Development Plan (NDP). Entrepreneurship is still a vital component of South Africa's economy (Gamede & Uleanya, 2019). Nonetheless, there appears to be a lack of understanding among instructors about how to teach entrepreneurship as a subject that may effectively foster an entrepreneurial mindset in students (Ncube & Lekhanya, 2021). Thus, the purpose of this study is to close this gap by examining the current state of entrepreneurship education within the TVET college sector. In particular, this study examined the supply side of entrepreneurship education in the TVET college sector.

2. Literature Review

Theoretical Background of Entrepreneurship

Diandra and Azmy (2020) define entrepreneurship as the process of creating value from almost nothing. Consider starting a firm or company with just an idea, without necessarily needing to raise enormous amounts of capital. Urban and Maswabi (2021) point out that while ideas and knowledge about entrepreneurship remain crucial, the number of resources available to engage in entrepreneurial activities has little bearing on the success of entrepreneurship. According to Di Vaio, Hassan, Chhabra, Arrigo, and Palladino (2022), entrepreneurship is advantageous for people at the individual, group, organisational, and societal levels. Instead of becoming wealthy quickly, the goal of entrepreneurship is to create long-term value and reliable income flow sources (Diandra & Azmy, 2020). Thus, entrepreneurship is seen as crucial to society's advancement, as it creates long-term value and a steady income stream for individuals, teams, organisations, and the broader community.

According to Urban and Maswabi (2021), being an entrepreneur means combining concepts, skills, tools, and markets to create a profitable business. This definition emphasises starting a business that will boost employment and the economy. Camacho-Miñano et al. (2017) assert that post-secondary education can help build the specific knowledge, abilities, and aptitude needed for entrepreneurial success. The development of these abilities is required of TVET colleges in South African higher education; however, it is unclear whether these institutions are adequately equipped and prepared to fulfil this duty. Tondi (2023) warns that TVET colleges may not foster certain character qualities beneficial to entrepreneurship. These attributes include perseverance, dedication to businesses, participation in organisations, a propensity to take risks, solid interpersonal relationships, inventiveness, and an optimistic outlook on life. Typically, entrepreneurship education (Ghafar, 2020) may not impart these innate traits. The role of creativity in entrepreneurship cannot be overstated. According to recent studies, creativity involves not only coming up with original ideas but also putting them to use in ways that capitalise on market opportunities and unmet needs (Camacho-Miñano et al., 2017). TVET colleges have a significant role in developing this creativity, depending on the readiness and effectiveness of their entrepreneurship education programs (Uleanya et al., 2018).

Entrepreneurship has long been recognised as a catalyst for innovation and societal progress. Recent research supports the idea that entrepreneurship drives the creation of new products, services, technologies, and knowledge, all of which significantly impact communities by effectively and efficiently addressing their needs (Urban & Maswabi, 2021). The ability to learn quickly and adapt to changing environments is closely linked to

entrepreneurial success, as it fosters the development of new ideas and innovative solutions to problems and opportunities (Bauman & Lucy, 2021; Blesia et al., 2021). This dynamic process of learning and creativity is essential for generating business ideas that can be transformed into successful ventures. Entrepreneurship also requires constant engagement with the market to identify opportunities for improvement and innovation. This involves listening to consumers, observing market trends, and continually seeking ways to enhance existing products or create new ones (Ncube & Lekhanya, 2021). Therefore, targeted training and education can cultivate the creativity and entrepreneurial skills needed to generate business ideas. For instance, TVET colleges have a critical role in developing this creative mindset, depending on their readiness and the effectiveness of their entrepreneurship programmes (Keelson et al., 2025). By nurturing creativity, these institutions can better prepare students to identify and capitalise on business opportunities, thereby contributing to economic growth.

The importance of Entrepreneurship Education

Doran, McCarthy, and O'Connor (2018) contend that entrepreneurship is essential to the economics of both nations and the global community. According to Bersouli et al. (2024), entrepreneurship and the development and assistance of small business ventures are essential for a nation's economic and social welfare, and entrepreneurship education can foster an entrepreneurial spirit that propels an organisation to new heights. Ayonmike and Okeke (2020) suggest that the scope of entrepreneurial education is broad, encompassing the abilities that can be imparted and the traits that can be developed in people to bring fresh, creative ideas to life. Mbete (2021) found that entrepreneurship education equips students with practical skills and a comprehensive understanding of business outcomes, organisations, and their interplay with socio-economic factors (Msosa, 2023).

In their paper on vocational and technical education, Ayonmike and Okeke (2020) discovered that business studies taught in elementary school have a positive impact on many students who may be highly interested in considering entrepreneurship after completing the corresponding business management courses. According to Chan, Chui and Yip (2019), entrepreneurship education programs in secondary schools in Hong Kong were successful in enhancing students' awareness of the business world and in helping them improve their personal attributes. Fayolle (2018) found that entrepreneurship education programs in the US and Europe are highly beneficial. According to Forcher-Mayr and Mahlknecht (2020), South African TVET institutions did not receive sufficient funding to equip young people for entrepreneurship adequately. Understanding individual biographical factors such as age, gender, and educational background may further enhance the effectiveness of entrepreneurship education, according to Khuboni, Msosa, and Ntshangase (2023). They discovered that more effective entrepreneurial outcomes could result from programme customisation to match the unique requirements and features of diverse student populations.

A study by Ramani, Solomon, and Alabduljader (2018) recognises the value of entrepreneurial studies. It proposes that up to 1,200 post-secondary institutions in the USA alone should offer courses in small business and entrepreneurship, thereby generating employment opportunities. The United States has a low unemployment rate of less than 5%, which can be attributed to the high quality of entrepreneurial education provided by universities, high schools, and vocational colleges in the country's economy (Saboori et al., 2022). Ramani et al. (2018) contend that if other nations could benefit from entrepreneurship education, there would be no reason why South Africa couldn't implement comparable initiatives (Cechvala & Ganson, 2024). According to Doran et al. (2018), promoting entrepreneurship education in society may increase people's desire to launch their businesses. Similarly, Kim, Kim, Lee, and Joung (2020) note that before the colleges become a waste of time, there is an urgent need to re-evaluate the level and substance of the entrepreneurial education provided by the enormous TVET. This is necessary for a truly inclusive economic revolution to occur in South Africa. South Africa may find a solution to the growing need to update or re-evaluate the entrepreneurial programs offered by TVET universities (Gamede & Uleanya, 2019).

Job opportunities will result from the business transformation that TVET colleges may help bring about (Kana & Letaba, 2024). Many young people in most African countries are unemployed, and stimulating their business mindset through entrepreneurial education and behaviour would, realistically, produce more jobs (Di Vaio et al., 2022). In the majority of South Africa, entrepreneurship is a major force behind economic expansion and welfare (Camacho-Miñano et al., 2017). Bauman and Lucy (2021) argue that entrepreneurship education enhances economic development across various economies by increasing commercial activity.

Entrepreneurship education included in higher education packages rekindles students' interest in launching independent small enterprises that may eventually become part of the mainstream economy. These small businesses may make a substantial contribution to a nation's economic development, and South Africa is making great efforts to encourage young people to start their own small businesses (Ncube & Lekhanya, 2021). As part of the Enterprise Development Department's efforts to promote entrepreneurship, particularly among women, young people, and residents of rural areas, the South African government has recognised the value of entrepreneurial education and established entrepreneurship schools across the nation, with the first ones located in the provinces of Gauteng and the Western Cape, respectively. Additionally, the department has designated several TVET colleges to launch Centres for Entrepreneurship (CfE) initiatives. The goal of this program is to increase the proportion of alumni who are keen on launching enterprises. The majority of Africans, young and old, continue to hold the view that working for the government or big businesses is the safest and most secure career path. When it comes to launching their businesses, the majority of South Africans have very low levels of self-reliance and self-confidence, according to Thakhathi (2019). They believe that some TVET colleges disregard the entrepreneurship instruction they provide. However, Sebola (2022) contends that the family career culture prevalent at the time and the educational backgrounds of the majority of previously marginalised individuals are to blame for citizens' aversion to entrepreneurship. One could argue that the Apartheid regime's Bantu education system is to blame for South Africa's dearth of entrepreneurship (Thakhathi, 2019).

As previously discussed, entrepreneurship education is crucial because it can play a major role in a nation's economic development, help address a range of social evils, including unemployment and poverty, and lower crime rates (Kana & Letaba, 2024). The best way for public TVET colleges to develop and produce entrepreneurs is through entrepreneurship programs that instil the right mindset, values, and a culture of entrepreneurship. This involves engaging primary, secondary, and university educators and students to guide them towards self-reliance and a career path (Kim et al., 2020). Entrepreneurship education is recognised as a strategic intervention by educators to equip learners with essential entrepreneurial qualities and skills necessary for success in the business world. Recent studies support that entrepreneurship education aims to inspire learners to become innovative entrepreneurs and expose them to real business environments, enabling them to gain practical experience (Liguori & Winkler, 2020; Nabi et al., 2017). TVET colleges have integrated entrepreneurship into their curricula, requiring students to engage in practical tasks, such as visiting businesses and conducting assessments, in South Africa. However, concerns arise that students may focus more on obtaining marks than on genuinely learning from the experience, casting doubt on the effectiveness and authenticity of this educational approach (Zulu, 2019).

Entrepreneurship education has been described as a structured process designed to impart essential entrepreneurial competencies—skills, concepts, and awareness—that individuals use when starting and developing their ventures (Lackéus, 2020). This field of education is increasingly recognised worldwide as an important academic field and a respected career option among youth, who are drawn to the opportunities it offers (Acs et al., 2020). TVET colleges are well-positioned to deliver this education, particularly to students who show enthusiasm for entrepreneurship. Research emphasises that teaching learners to aspire to become job creators rather than job seekers is crucial in fostering a strong entrepreneurial culture in society (Fayolle, 2018). Historically, large corporations and the public sector have dominated the South African economy. However, post-apartheid economic reforms have led to significant growth in the informal sector, particularly small and medium enterprises

(SMEs) (Fotoyi, 2026). This shift led to growth in the informal sector, epitomised by an increase in small and medium-sized enterprises (SMEs) (Fatoki, 2019).

3. Methodology

A quantitative descriptive research design was used for this investigation. A descriptive research design was used to describe the phenomenon under investigation (Creswell & Creswell, 2017). Thus, creating a more holistic picture of a phenomenon is one of the major benefits of a descriptive research design. In addition, this study adopted a positivist research paradigm. The positivist paradigm tries to establish a generalisation of objective truth to either prove or disprove any theory or belief (Saunders, Lewis, & Thornhill, 2019). The sampling frame for this study comprised 1112 lecturers from three colleges. Data collection was done through a self-administered questionnaire in 2016. Cluster sampling was used to identify the respondents. In this sampling technique, the sampling unit comprises a group of natural members of a population rather than a single member, as is normally the case with other sampling techniques (Saunders et al., 2019). The cluster sampling technique was used: three colleges were randomly selected as representatives of the clusters, followed by random sampling. Random selection and identification of respondents constitute the 'random sampling method'. To select 106 lecture respondents, a simple random sampling method was used within each of the three strata. A self-administered questionnaire was provided for respondents to complete at their convenience. Descriptive statistics were performed using SPSS.

4. Results and Discussion

Demographic Profile of Respondents

As shown in Table 1, female respondents made up a small majority of respondents. Out of the 106 participants who disclosed their gender, 49% were men and 51% were women. Given the minimal disparity between the genders, both were equally represented in the study. The majority of the participants worked as regular lecturers. Of the 106 participants, 5.7% were in senior lecturing roles, while 94.3% were lecturers. As shown in Table 1, 4% of the academic staff worked part-time, while the remaining 96% were full-time employees.

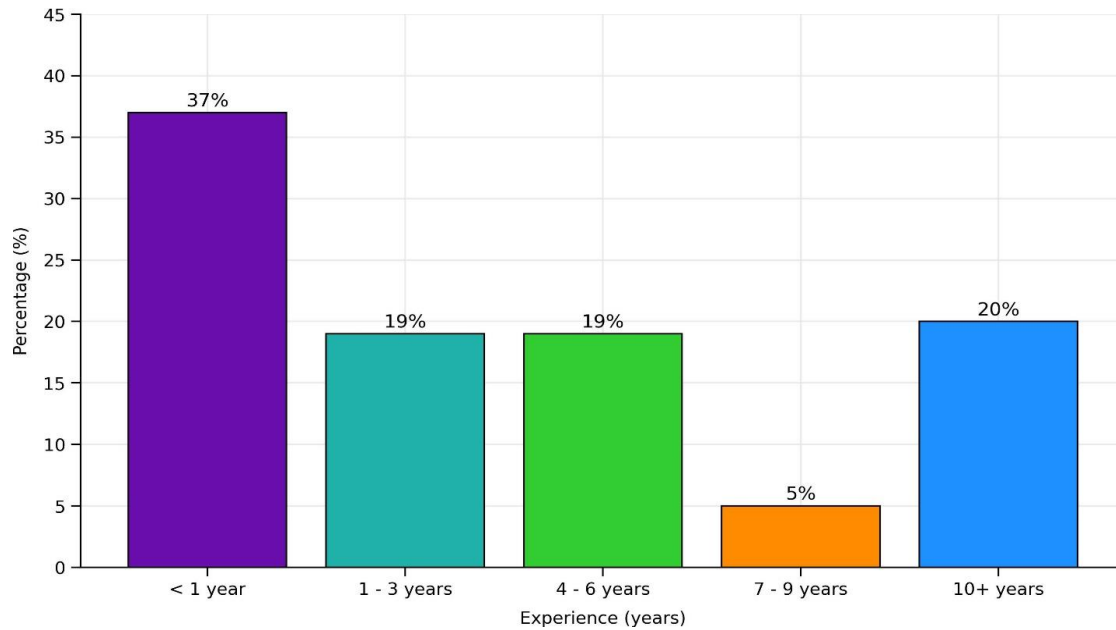
Table 1. Demographic profile of respondents

Description	Frequency	Percent
Male	51	49
Female	55	51
Full-time	102	96
Part-time	4	4
Lecturer	100	94.3
Senior Lecturer	6	5.7
Total	106	100

Source: Authors' construction

Years of Experience

The purpose of this section was to ascertain how long the participants had been lecturers. Figure 1 displays the distribution of their lecture expertise and years of service.

**Figure 1.** Years of experience

Source: Authors' construct

The majority of participants, as seen in Figure 1, were novice lecturers with less than a year of experience (37%). Lecturers with at least 10 years of experience, representing 20% of the participants, followed this group. One-to-three-year-experienced lecturers made up 19% of the participants. Lecturers who had worked for 4-6 years also contributed 19% to the sample. Lecturers with seven to nine years of experience were the least represented category; only five (5%) of the participants belonged to this group. This may indicate that the majority of the lecturers were inexperienced with TVET college programmes, particularly in entrepreneurship. The reality is that any work requires experience, and the fact that more lecturers are known to be less experienced suggests that the final product would be only partially developed.

Entrepreneurship Offerings at TVET Colleges

A descriptive analysis was conducted to ascertain lecturers' perceptions across various campuses regarding entrepreneurship issues in TVET colleges. The following discussion examines each objective in detail, relating it to the items or various statements posed to the respondents. The first objective sought to determine entrepreneurship offerings at TVET colleges. "Entrepreneurship offering" refers to entrepreneurship courses taught at a specific college or university. This integration becomes crucial when considering how entrepreneurship education fits within the overall curriculum of these universities. The majority of entrepreneurship education courses offered at TVET colleges use fairly traditional approaches. As noted by Mustapha, Evangelista, and Marir (2023), educational institutions are increasingly involved in knowledge dissemination, and guest lectures and classroom discussions are common practices. Ghafar (2020) argues that the stories entrepreneurs themselves build require more attention. Each participant was asked to list as many subjects as possible that their department offered, of which they were aware, to obtain a general idea of what their department had to offer. Table 2 below tabulates these themes. Entrepreneurship was the most frequently listed subject, as seen in Table 2. 57 of 106 respondents (54%) reported that their departments offer entrepreneurial subjects. 19 out of 106 respondents (18%) stated that their departments offered New Venture Creation as a subject. The third- and fourth-most common subjects were accounting and business management, accounting for 16% and 15% of respondents, respectively. Four subjects accounted for 70% of the 158 hits on the frequency distribution of subjects (as indicated by the cumulative % in Table 2).

Table 2. Subjects offered at the Durban area TVET colleges

Subject	Frequency	Percent (n=106)	Percent (n=158)	Cumulative % (n=158)
Entrepreneurship	57	54	36	36
New Venture	19	18	12	48
Accounting	17	16	11	59
Business Management	16	15	10	69
Financial Management	12	11	8	77
Economics	10	9	6	83
Management	5	5	3	86
Computer	4	4	3	89
Marketing	3	3	2	91
Mathematics	3	3	2	92
Office Practices	3	3	2	94
English	3	3	2	96
Food and Hospitality	3	3	2	98
Travel and Tourism	2	2	1	99
Sales Management	1	1	1	100
Total	158		100	

Source: Authors' construct

Further inquiry was made to assess whether entrepreneurship was offered as an individual subject or incorporated into other subjects to provide further clarity on the subject matter. As shown in the above table, 77% of the 106 participants indicated that at least one course or subject offered an entrepreneurship focus but had a business focus that differed from entrepreneurship. Of the six suggested in Table 3, this is the most commonly used entrepreneurship education method. The main initiative towards entrepreneurship education was offering multiple courses focusing on entrepreneurship. This conclusion is supported by the 73% of participants who indicated it. It was also observed that 38% of the 106 participants' departments offer the NGV certificate in entrepreneurship. The least commonly offered entrepreneurship education packages were the NATED diploma, short courses, and infrequent seminars, which accounted for 32%, 31%, and 26% of the 106 participants, respectively. The results presented in Table 3 are consistent with current research on TVET offerings, as suggested by Sebola (2022). Liao, Nguyen, and Caputo (2022) suggest that TVET curricula should emphasise entrepreneurship in all fields, aligning with the DHET recommendations. It is the role of the TVET committee within the DHET to ensure the successful implementation of the entrepreneurship modules in TVET curricula (Ncube & Lekhanya, 2021).

Table 3. Entrepreneurship offerings at the Durban area TVET colleges

Entrepreneurship offerings	Frequency	Percent (n=106)	Percent (n=294)	Cumulative % (n=294)
At least one course that focuses on other business activities also covers entrepreneurship.	82	77	28	28
Entrepreneurship is taught in at least one dedicated course, module or elective.	77	73	26	54
NCV certificate in entrepreneurship	40	38	14	68
NATED diploma in entrepreneurship	34	32	12	79
Short courses in entrepreneurship	33	31	11	90
Occasional seminars in entrepreneurship	28	26	10	100
Total	294		100	

Source: Authors' construct

Among other things, such support should include curriculum harmonisation, approval of learning materials for the entrepreneurship module, monitoring and evaluation, report compilation, and lecturers' upskilling through workshops, training sessions, etc. Two major programs are offered at TVET colleges: the National Certificate Vocational (NCV Levels 2-4) and the NATED (N2-N6). For entry into NATED, one needs a grade 12 pass, while for the NCV, one only requires a grade 9 pass (Department of Higher Education and Training, 2020). There are seven subjects in NCV: three are foundational, and the remaining four are vocational/practical. The content and approach of these two are different. The NATED curriculum, unlike NCV, places greater emphasis on theoretical aspects (McGrath & Yamada, 2023).

Content Delivery

Table 4 presents the methods respondents used to provide entrepreneurial skills training to students. From the table below, respondents were asked to select as many methods as possible for frequency counts. All the respondents made 453 picks, or hits. Table 4 shows that formal lectures were the most popular method for delivering content. 21% of the 453 hits for this parameter (content delivery method) were lectures. Close to 91% of respondents who made this choice reported using this technique, among others. Thus, it is safe to conclude that this approach is the primary method of delivery. Personal projects were the second-most popular strategy for producing materials. This particular technique combined a teaching approach with a lecture. Orals and group projects were mentioned among other popular teaching approaches. These methods account for 9.5% and 9.3% of the 453 hits for this parameter, respectively.

Table 4. Content delivery methods

Content delivery method	Frequency	Percent (n=106)	Percent (n=453)
Lecturers	96	90.6	21.2
Individual Projects	48	45.3	10.6
Group Projects	43	40.6	9.5
Student oral presentation	42	39.6	9.3
Role playing	36	34.0	7.9
Local case studies	35	33.0	7.7
Prescribed text	33	31.1	7.3
Readings	31	29.2	6.8
Business simulations	28	26.4	6.2
Essays	21	19.8	4.6
Guest speakers	14	13.2	3.1
Entrepreneurs interviewed by students	12	11.3	2.6
Multimedia exercises	7	6.6	1.5
International case studies	4	3.8	0.9
Videos	3	2.8	0.7
Total	453		100.0

Source: Authors' construct

Video and international case studies accounted for less than 1% of all hits for this characteristic. Four lecturers used international case studies as their primary teaching method, whereas only three respondents relied on video materials (see Table 4 above). The findings indicate that the most effective methods used include teaching, personal projects, and oral presentations. International case studies and films are at the bottom of the list. As noted by Ncube and Matlala (2024), the results coincide with the findings indicating that conventional teaching approaches, primarily lectures, were employed in TVET colleges in Africa for entrepreneurial education. However, according to Camacho-Miñano et al. (2017), current TVET colleges are gradually moving away from a lecture-based approach towards a knowledge-sharing model that involves guest speakers and class discussions. Sebola (2022) argues that we should prioritise entrepreneur narratives grounded in practical experience.

Challenges that TVET Colleges are Facing in Offering Entrepreneurship as a Programme

This study also sought to determine the challenges participants faced in their colleges when implementing entrepreneurship programmes. The respondents were provided with a list of 5 possible problems to choose from, each representing a problem facing their institutions. Table 5 displays the results. Curriculum development has been the primary problem in implementing entrepreneurship programmes in TVET colleges, as shown in Table 6 below. Curriculum development, as a significant challenge, accounted for 32 of 155 occurrences (the largest number). Entrepreneurial efficacy of students was the second-highest-ranked major problem associated with the implementation of entrepreneurship programs in these institutions. The involvement of college management in providing an entrepreneurship programme does not pose a significant challenge.

Table 5. Challenges faced by TVET colleges in offering entrepreneurship education

Challenges	Frequency	Percent (n=106)	Percent (n=155)
Curriculum development	50	47	32
Students' entrepreneurial efficacy	47	44	30
College management buy-in	27	25	17
Lecturers' entrepreneurial efficacy	19	18	12
Operational and pedagogic impediments	12	11	8
Total	155		100

Source: Authors' construct

Lecturers' entrepreneurial efficacy and operational and pedagogical problems ranked lowest among the challenges faced. Educators/lecturers' attitudes toward a subject not only influence their decision to teach it and their teaching performance, but also affect students' attitudes toward the subject and their achievement in the class (Idris et al., 2019). These results are corroborated by Williams (2021), who identifies curriculum development as the major challenge facing TVET colleges in South Africa and across the African continent. The focus of TVET colleges is supposed to be on developing curricula for entrepreneurship education (Buthelezi, 2018; Mahlangu & Mtshali, 2024). Research should drive the rationale for developing and revising syllabi (Peschl et al., 2023). However, the syllabi presently prepare students for the "take-a-job" rather than the "create-a-job" approach.

5. Conclusions

Based on the findings, it is evident that most TVET colleges use lecturing as their primary teaching method for delivering entrepreneurship education. The study further showed that challenges such as "lecturer's entrepreneurial efficacy" and "operational and pedagogic impediments" are among the least encountered in the institutions. Therefore, it is recommended that TVET colleges develop entrepreneurship curricula that involve scholars and practitioners to integrate entrepreneurship concepts from both industrial and academic perspectives. In this way, the curriculum will equip learners with the skills to facilitate self-employment in the future. The curriculum in this case needs to instil interests, skills, attitudes, and appreciation through innovation and intellectual engagement. The results showed that TVET colleges are able to conduct entrepreneurship training due to the availability of skilled personnel and competent management within the institutions. However, it is also

important to note that there are some minor challenges in such TVET colleges. These include poor funding for teaching materials, low financial incentives, limited management involvement in conducting entrepreneurship training, and reluctance by some students towards the courses. Despite the positive findings regarding entrepreneurship education in TVET colleges, this study faces several limitations. First, the research took a supply-side perspective, analysing institutional preparedness, teaching methods, and instructors' competencies, without considering students' or graduates' experiences in entrepreneurship education, as per the demand-side perspective. This makes the findings one-sided and limited, as they focus solely on the supply side. Second, the use of a self-reporting approach in data collection may be biased, as respondents are inclined to provide more positive feedback about the institution, thereby distorting the actual situation on the ground. Furthermore, the study did not compare various teaching approaches in terms of effectiveness and efficiency in entrepreneurship education.

Future research should focus on mixed-methods research, in which qualitative methods complement quantitative methods by incorporating perspectives from students and graduates. This approach can help in comprehensively analysing the impact of entrepreneurship education. In addition, longitudinal research could be considered, as it can track the evolution of the entrepreneurship skills learners acquire throughout their careers. Lastly, a comparative study would be helpful, as it can evaluate the effectiveness of innovative methods relative to conventional ones.

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