RESEARCH ARTICLE:

Evaluating Sustainable Entrepreneurship Education in South Africa: Insights from a Systematic Review

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Abstract

In South Africa, sustainable entrepreneurship has become an indispensable element in tackling the current environmental and socioeconomic issues. This paper presents a systematic review of research articles focused on sustainable entrepreneurship education in South Africa. The review aims to provide an overview of the current state of research in this field, identify key trends and gaps in the literature and suggest future research directions. A total of 15 articles were selected for analysis based on specified criteria. Findings reveal that sustainable entrepreneurship education in South Africa is gaining traction as a key component of socio-economic development. However, there is still a lack of empirical evidence on the effectiveness of such education programs and their impact on entrepreneurial behaviour and practices. The review also highlights a need for more interdisciplinary research approaches and collaboration between academia, government and industry to foster a culture of sustainable entrepreneurship education practices, exploring different pedagogical approaches and investigating barriers and facilitators to the implementation of sustainable entrepreneurship practices in the South African context.

Keywords: sustainable education; South Africa; systematic review; socio-economic development; interdisciplinary research

Introduction

The promotion of sustainable entrepreneurship education has garnered significant attention in both academic discourse and policy agendas globally (Hägg and Kurczewska, 2022: 16). As economies strive to achieve sustainable development goals, the role of entrepreneurship in driving economic growth, social progress, and environmental sustainability has become increasingly recognised (Lee, 2023: 1). In the context of South Africa, a country marked by a history of economic disparities and environmental challenges, the integration of sustainable entrepreneurship education is paramount for fostering a sustainable and inclusive society (Enaifoghe and Vezi-Magigaba, 2023: 97). Despite burgeoning interest and research attention in sustainable entrepreneurship over the past decade, a universally accepted definition remains elusive, reflecting a diversity of approaches and terminologies such as ecological and social entrepreneurship (Gajdzik et al., 2023: 2). According to Bataineh et al. (2023: 3), sustainable entrepreneurship is distinguished by its primary focus on creating sustainable value alongside economic profit, contrasting with traditional entrepreneurial paradigms centered solely on financial gains. The stud by Johnson et al. (2023: 150) revealed that South Africa has shown resilience in entrepreneurship activity, with entrepreneurial activity increasing at a high rate. The study further highlights the importance of fostering a culture of innovation and entrepreneurship to address socio-economic challenges and drive economic growth in the country. Furthermore, Hlatshwayo (2023: 18) notes that South Africa's unemployment rate hit an alarming 32.4% in 2023, highlighting the critical need for programs that support entrepreneurship as means of empowering people and

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create work possibilities. In South Africa, promoting sustainable entrepreneurship assumes particular significance as a means to combat high unemployment rates, especially amongst the youth demographic. The country faces unique challenges in its educational institutions, where fostering an entrepreneurial spirit and embedding sustainable business practices into curricula are critical imperatives (Swargiary, 2024: 25).

Charrón Vías and Rivera-Cruz (2020: 162) observed that key challenges include the need for supportive policies, infrastructure, access to financial resources, and robust educational frameworks that impart both business acumen and sustainability literacy. Indigenous entrepreneurship in South Africa underscores a significant dimension of sustainable development, often characterised by practices such as organic agriculture and eco-tourism. These indigenous practices not only preserve cultural heritage but also offer viable models for sustainable economic growth and community resilience. Higher education institutions play a pivotal role in shaping the landscape of sustainable entrepreneurship education by developing curricula and programs that equip students with the necessary competencies to navigate complex sustainability challenges (Charrón Vías and Rivera-Cruz, 2020: 165). Sustainable entrepreneurship education aims to cultivate a mindset that integrates environmental and social dimensions into entrepreneurial ventures, preparing future leaders who can drive inclusive economic growth whilst addressing pressing global challenges (Joensuu-Salo *et al.*, 2022: 3).

Moreover, South Africa's commitment to sustainable development is evident in its policy framework, including the National Development Plan (NDP) and the Sustainable Development Goals (SDGs). Initiatives that emphasise the importance of promoting economic growth, social inclusion, and environmental sustainability. Integrating sustainable entrepreneurship education into the academic curriculum is a critical step towards realising these goals and nurturing a new generation of socially conscious entrepreneurs. Against this backdrop, a systematic review of sustainable entrepreneurship education in South Africa holds significant promise for shedding light on current practices, identifying gaps and opportunities, and offering actionable insights for educators, policymakers, and practitioners. By synthesising existing research and best practices, this review can inform evidence-based decision-making, foster collaboration amongst stakeholders, and catalyse the advancement of sustainable entrepreneurship education in South Africa.

Methodology

In this article, the authors employ a systematic literature review (SLR) methodological framework, originally proposed by Tranfield et al. (2003: 208) and later refined by Gil-Vilda et al. (2021: 2); and Phesa (2024: 496) to address the research questions: namely: what are the gaps in sustainable entrepreneurship education in South Africa, and what recommendations can be made to improve it? This method comprises six essential steps including research selection, inclusion and exclusion criteria, study identification, study quality evaluation, data extraction, and data synthesis. A systematic literature review offers a structured and comprehensive examination of existing literature (Mohamed Shaffril et al., 2021: 1320). Hiebl (2023: 232) adds that it reduces bias in research selection and interpretation by adhering to predetermined criteria for selecting and extracting data. This improves the dependability and accuracy of the review's conclusions. To enrich the quality of this review, the researchers integrated best practices for conducting systematic literature reviews in management and business research. drawing on recommendations from Fisch and Block (2018: 105) as cited by Sauer and Seuring (2023: 1906). Furthermore, the article incorporates additional insights from Sauer and Seuring (2023: 1907), advocating fostering collaboration within the research team; rigorously minimizing biases at every stage of the review process; and emphasising the importance of process-driven analysis whilst deferring final conclusions until all data has been comprehensively reviewed. These integrated recommendations collectively contribute to a robust and methodologically sound literature review in this study in management and business research.

The research team adopted a collaborative approach, guided by the principle that involving multiple reviewers enhances the reliability of the study, as highlighted by (Sauer and Seuring, 2023: 1914). The lead researcher played a pivotal role in orchestrating this process, organizing regular meetings and diligently documenting proceedings to maintain smooth progress. Throughout the project, the team convened weekly sessions via Microsoft Teams, each spanning approximately sixty minutes. These meetings served as forums to deliberate crucial aspects such as defining the inclusion and exclusion criteria, refining the methodology, and synthesizing key insights gleaned from the literature under review. This concerted effort fostered a shared understanding amongst the team members, ensuring coherence and rigour in the approach to the study. To ensure comprehensive coverage of the research area, the researchers employed a systematic approach to keyword identification and search strategy. Initially, the authors identified key terms such as "sustainable entrepreneurship", "entrepreneurship education", "sustainability

in education", "entrepreneurial training", and "South Africa" based on the research question. These terms were refined through a pilot test involving a review of ten initial studies sourced via Google. This pilot phase prompted the inclusion of additional keywords like "sustainable business practices" and "green entrepreneurship education." Subsequent iterations further honed the search terms, culminating in a finalised set used for a comprehensive search, including phrases such as "sustainable entrepreneurship education in South Africa" and "green entrepreneurial training in South Africa." The researchers accessed relevant studies from a variety of databases, including Google Scholar, ScienceDirect, and Scopus, whilst also consulting reference lists and manually searching specific journals. This multi-source approach was adopted to address triangulation concerns and ensure a thorough coverage of the literature (Carugi, 2016: 57). Emphasizing quality and reliability, the authors focused exclusively on peer-reviewed articles. This criterion was maintained to uphold academic rigour, as affirmed by studies such as those by (Denniss *et al.*, 2023: 1347). The search was conducted rigorously over a 30-day period, spanning from May 1, 2024, to May 30, 2024, in order to capture the most current and pertinent studies available.

To ensure the rigorous selection of pertinent studies, the researchers established clear inclusion and exclusion criteria tailored to our research focus. Specifically, the authors confined their selection to English-language studies published between 2010 and 2024. This timeframe was selected because sustainable entrepreneurship education in South Africa began in the late 1990s and early 2000s. Choosing the 2010s and 2024 allowed the capture of the initial stages and early developments of sustainable entrepreneurship initiatives in the country, providing a comprehensive view of its emergence and evolution during a critical period of institutionalisation and growth. Key criteria for inclusion encompassed studies that specifically investigated sustainable entrepreneurship education within the South African context. This targeted approach aimed to align the review with the geographic and thematic scope essential to the research objectives. Additionally, studies needed to meet stringent quality standards, including being peer-reviewed, in order to uphold reliability and academic rigour. By adhering to these criteria, the researchers ensured that the review encapsulated the most relevant and current literature pertinent to sustainable entrepreneurship education in South Africa, facilitating a focused and insightful analysis. The study selection process involved an initial screening of titles and abstracts by all authors to eliminate irrelevant studies. The study used a data extraction sheet for this vetting process, and in cases of uncertainty, the study reviewed the introduction, conclusion, or the entire study if necessary. The goal was to include peer-reviewed journal articles to maintain high validity. However, due to a limited number of available articles to ensure a comprehensive analysis and capture emerging insights. By integrating both peer-reviewed articles and academic dissertations into the selection process, the study aimed to enrich the review with a diverse range of scholarly contributions whilst maintaining robust methodological standards.

After the initial vetting, a full-text analysis of the remaining studies was performed. In addition, efforts were made to obtain studies that were not freely accessible by contacting authors or their institutions. The final sample comprised 15 studies, which were read and analysed thoroughly. The study selection process is presented in a flowchart (see Figure 1).

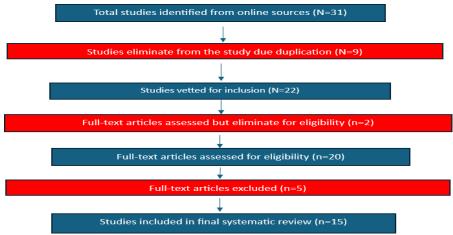


Figure 1: Data extraction study selection process **Source:** Researcher's Computation (2024)

An integrated data extraction sheet was created to confirm the appropriateness of the studies and capture their key features, including authors, year of publication, title, study aim, journal name or university, sample, research design,

methods applied, and study results. The template was pretested and revised by the research team as needed before application. Each study was independently reviewed by a two-person team to ensure unbiased decisions. A list of studies for analysis was compiled, and the lead researcher assigned these studies to alternate two-person teams to prevent bias from recurring in reviewer pairings. Reviewers worked independently to avoid influencing each other's assessments. To capture all relevant information, comprehensive notes were maintained on interesting findings and insights, which were instrumental in generating the final research paper. Differences in study inclusion were resolved through thorough discussions, enhancing the researchers' understanding of the systematic review process. These discussions, conducted as a team, were essential for progressing the review efficiently and fostering a platform for questions and clarifications. After reviewing the complete studies, final decisions on their inclusion were made, and studies that did not meet the eligibility criteria were excluded. Finally, data synthesis and analysis were conducted using a data extraction tables and charts. A descriptive-analytical method was employed to outline the weaknesses of sustainable entrepreneurship education in South Africa and to provide recommendations for improvement. Findings were occasionally illustrated using quotes from the reviewed studies. supported by a broader literature review. The authors deferred conclusions until all literature was thoroughly examined, allowing each researcher to work autonomously and avoid early assumptions based on incomplete information. Additionally, they ensured that no single study disproportionately influenced the analysis.

Table 1, part of the integrated data extraction sheet, summarises the key characteristics of the studies reviewed, including authors, year of publication, title, study aim, journal name or university, sample, and research design.

Summary of Reviewed Studies

Table 1: Features of the studies reviewed

Author(s)	Study Aim	Journal	Sample	Research Design	Findings
(2020)	Role of higher education in promoting sustainable entrepreneurship	Business and Management Studies	Random sampling (n=183)		Universities provide career guidance but lack practical education and financial support. Institutions nurture sustainable entrepreneurship and innovation; creativity is key.
,	Examine business education curricula and social entrepreneurship		Pre-service teachers' comments (n=92)	Qualitative	Social entrepreneurship is inadequately integrated in business education curricula.
, ,	Relationship between sustainability orientation and entrepreneurial intentions	Entrepreneurship and Sustainability	Convenience sampling	Quantitative	Sustainability orientation predicts entrepreneurial intentions; recommends diverse teaching methods.
Vuuren (2019)	Correlation between entrepreneurships education and self-efficacy	Acta Commercii	Purposive sampling (n=1,200)	Quantitative	Positive correlation between self-efficacy and education; longer durations have stronger impacts.
,	Factors influencing student entrepreneurial intention	The International Journal of Management Education		Quantitative	Entrepreneurship education aids economic development: lecturer competency is crucial.
al. (2023)	Effectiveness of entrepreneurship education programs	Journal of Small Business and Entrepreneurship	Stratified random sampling (n=750)	Cross-sectional	Contextual alignment is crucial for effectiveness; emphasises contextualised curriculum.
et al. (2020)	Characteristics of successful entrepreneurs and	Sustainability	Combined methods	Qualitative and Quantitative	Role models positively influence entrepreneurial intentions; the curriculum

	influence of role models				should be tailored.
Botha and Bignotti (2016)		Southern African Journal of Entrepreneurship and Small Business Management	Combined methods	and Quantitative	Internships are essential; it suggests pilot-testing with small student groups.
Nwokolo et al. (2017)	Entrepreneurship education as a tool for economic development	Journal of Social Sciences	Simple random sampling (n=374)		Entrepreneurship education promotes entrepreneurial skills essential for economic growth.
Radipere (2012)	Current state of entrepreneurship education in South African universities	African Journal of Business Management	Not specified		Traditional teaching approaches are prevalent; focus on developing practical entrepreneurial skills.
Chimucheka (2014)	Overview of entrepreneurship education objectives in South Africa	Mediterranean Journal of Social Sciences	Not specified		Provides an overview of objectives and challenges in entrepreneurship education within South African HEIs.
Du Toit and Kempen (2020)	Investigate inadequacies in entrepreneurship education structure	Africa Education Review	Not specified		Entrepreneurship education is infrequent; suggests need for curricular improvements to enhance impact.
Jonck <i>et al.</i> (2016)	, ,	African Journal of Business Ethics	Not specified		Effective teaching methods increase participation; mentoring and hands-on projects are critical.
Kruse <i>et al.</i> (2023)	Assess the effectiveness of entrepreneurship education in developing countries	Journal of Social Entrepreneurship	Stratified sampling (n=250)		Entrepreneurship education positively impacts entrepreneurial intentions but lacks adequate resources.
Isaacs <i>et al.</i> (2007)	Examine the role of resources in sustaining entrepreneurship education		Purposive sampling (n=200)		Adequate resources and faculty training are key to the success of entrepreneurship education programs.

Source: Researcher's Computation (2024)

Findings and Discussion

The findings of this study highlight the critical role of curriculum development, pedagogical strategies, and industry engagement in fostering sustainable entrepreneurship education in South Africa. Research indicates that integrating sustainability within entrepreneurship education not only equips students with essential business competencies but also prepares them to address socio-economic and environmental challenges. The discussion below explores key themes, including curriculum and pedagogical strategies, industry engagement, and challenges faced in implementing effective entrepreneurship education.

Curriculum and pedagogical strategies in sustainable entrepreneurship education in South Africa

Kimanzi (2020: 480) underscores the significant role higher education institutions play in embedding sustainability within entrepreneurship curricula, emphasizing that targeted programs equip students with the necessary skills to address local socio-economic challenges. This aligns with the call for sustainable education practices that foster real-world problem-solving skills among South African entrepreneurs. Nwokolo *et al.* (2017: 50) highlight that

entrepreneurship education is a crucial tool for economic development, suggesting that a curriculum structured around sustainable business practices can drive entrepreneurial intentions and outcomes. Their research suggests that pedagogical strategies aimed at sustainable development reinforce students' engagement and preparedness for real-world challenges, which is essential in South Africa's unique socio-economic landscape. Radipere (2012: 3708) identifies a traditional approach in South African university entrepreneurship programs, noting that a shift toward more experiential, sustainability-oriented pedagogies would significantly benefit student entrepreneurship development. His work implies that innovative curriculum structures and practical learning components are essential for fostering sustainable entrepreneurial mindsets. Chimucheka (2014: 406) provides an overview of entrepreneurship education in South Africa and advocates for a curriculum that not only covers entrepreneurial theory but also integrates sustainable business practices. This reflects a broader need for pedagogical strategies that address both local and global sustainability challenges, reinforcing the practical value of sustainable entrepreneurship education. Du Toit and Kempen (2020: 160) argue that effectual structuring of entrepreneurship curricula is essential for nurturing sustainable entrepreneurship. Their findings indicate that curricular inadequacies in higher education may hinder the development of sustainable entrepreneurial skills, suggesting a critical need for pedagogical reforms that address these gaps through practical, sustainability-focused content.

Farashahi and Tajeddin (2018: 133) emphasize that curriculum content should not only inspire students but also equip them with hands-on skills to build entrepreneurial intentions. This requires specific pedagogical strategies focused on practical applications, enhancing students' understanding and confidence in entrepreneurial settings. Bux and Van Vuuren (2019: 4) reinforce this, noting a positive relationship between entrepreneurial education and student self-efficacy, which becomes stronger with extended program durations. Their findings suggest that sustained, comprehensive programs are instrumental in building students' entrepreneurial confidence and competence. Moreover, Fatoki (2019: 991) finds that sustainability orientation is a crucial predictor of sustainable entrepreneurial intentions. He advocates for using both passive and active learning approaches to foster a sustainability mindset among students, thereby enhancing the practical application of theoretical concepts and creating a more engaging educational experience. The study by Waghid (2019: 943) points out a significant gap in South African business education curricula, where there is often insufficient integration of social entrepreneurship. This oversight misses a vital opportunity to instil a sense of social responsibility and innovation in students through curricular activities focused on societal impact. Boldureanu et al. (2020: 4) support this by identifying the positive influence of exposure to entrepreneurial role models on students' entrepreneurial attitudes and intentions. They advocate for a curriculum tailored to the diverse needs and backgrounds of students, making entrepreneurial education both impactful and relevant.

Botha and Bignotti (2016: 2) argue for the inclusion of internships within entrepreneurship curricula, providing students with real-world experience essential for skill development. They recommend piloting such programs with smaller groups to optimize implementation. Similarly, Wang *et al.* (2019: 2048) critique traditional business management courses, which often include minimal entrepreneurial components, as insufficient for cultivating an entrepreneurial spirit. They call for more hands-on, experiential approaches to enhance student engagement and course impact. Omoyajowo (2022: 140) observe that traditional classroom methods dominate entrepreneurship education, limiting practical learning opportunities. He proposes developing curricula that incorporate partnerships for internships, allowing students to gain industry exposure and real-world insights. Rodrigues (2023: 940) similarly argues that entrepreneurship education should prioritize practical engagement over theoretical instruction, empowering students with the skills and confidence to pursue entrepreneurial careers.

Curriculum review

Kimanzi (2020: 481) emphasizes the pivotal role of higher education institutions in providing an ecosystem that supports sustainable entrepreneurship, which implies the need for a curriculum that integrates environmental, social, and economic aspects of entrepreneurship. A holistic curriculum would address these multiple facets, preparing students to navigate complex societal challenges. Nwokolo *et al.* (2017: 50) highlight that entrepreneurship education can serve as a tool for economic development, suggesting that the curriculum must cover broad competencies such as business skills, economic understanding, and social responsibility. This aligns with a holistic approach, ensuring students are not only equipped with technical knowledge but also understand their broader impact on society. Radipere (2012: 3705) discusses the traditional approach to entrepreneurship education at South African universities and suggests the need for a curriculum that fosters real-world application. A holistic curriculum development approach would integrate experiential learning opportunities, making education

more practical and impactful for students. Chimucheka (2014: 405) provides an overview of entrepreneurship education in South Africa, which points out gaps in the curriculum regarding audience-specific needs. Holistic development here would mean creating flexible, inclusive content that serves diverse student backgrounds and learning preferences, thus widening access and relevance. Du Toit and Kempen (2020: 163) offer guidelines for improving entrepreneurship education structures within higher education. Their findings suggest that the curriculum must adapt to contemporary entrepreneurial demands, which includes effectual reasoning, strategic thinking, and adaptability. A holistic curriculum would integrate these adaptive competencies, preparing students for evolving business landscapes.

According to Mishra (2021: 214) the integration of Education for Sustainable Development into national curricula is crucial, as highlighted by the Sustainable Development Goal 4. Developing the entrepreneurship curriculum in this way should highlight the connections between entrepreneurship education and the Sustainable Development Goals (SDGs) for 2030 established by the United Nations (Iwu *et al.*, 2021: 3). These SDGs represent a universal call to eradicate poverty, protect the planet, and ensure global peace and prosperity. Since the SDGs are interlinked, they address critical dimensions of economic, social, and environmental development, which are central to entrepreneurship (Carlsen and Bruggemann, 2022: 219). The goals provide a comprehensive framework for achieving a more sustainable and equitable future. Moreover, the alignment of entrepreneurship education should actively incorporate topics that address sustainability in the African context, including eco-innovation, inclusive business models, and a deep understanding of the unique challenges and opportunities in African entrepreneurship (Olutuase *et al.*, 2023: 264). This approach fosters a curriculum that not only equips students with practical entrepreneurial skills but also prepares them to tackle pressing sustainability issues through innovative, contextually relevant solution.

For instance, Sharma *et al.* (2021: 375) propose a framework integrating sustainable entrepreneurship, highlighting that curriculum design can foster sustainable mindsets by addressing environmental and social dimensions. This aligns with the SDGs by preparing students for challenges beyond conventional business goals (Sharma *et al.*, 2021: 376). Additionally, studies by Hermann and Bossle (2020: 5) underscore that frameworks combining entrepreneurship and sustainability education enable students to connect theoretical knowledge with real-world applications, fostering eco-innovation and responsible business practices relevant to South Africa's unique socioeconomic landscape. Furthermore, Voldsund *et al.* (2020) introduce a problem-based learning approach, which actively engages students in sustainability challenges. This approach promotes collaborative, interdisciplinary learning where students from various fields work together to develop solutions to environmental and social issues. This interdisciplinary model aligns well with the call to embed sustainable entrepreneurship within broader curricula to create a holistic understanding of African sustainability challenges (Voldsund *et al.*, 2020: 1411). The research by Olutuase *et al.* (2023: 279) also supports the interdisciplinary focus, noting that integrating context-specific business models relevant to the African environment helps students understand and address regional sustainability issues. Their findings emphasize that entrepreneurship education must not only impart skills but also nurture an awareness of sustainable and inclusive business practices.

Voldsund *et al.* (2020: 1413) introduce a problem-based learning approach, fostering skills that are crucial for tackling sustainable entrepreneurship challenges. Similarly, Olutuase *et al.* (2023: 280) advocate for an interdisciplinary and context-specific approach, which equips students with the capability to navigate complex sustainability issues within South Africa's unique socio-economic environment. This is supported by project-based approaches that enable students to gain first-hand experience in sustainability-focused projects, developing skills necessary to respond to environmental and economic challenges in their communities.

Pedagogical review

Klapper and Fayolle (2023: 2) apply Freire's critical pedagogical approach to promote transformative learning in entrepreneurship. This approach encourages critical thinking and self-reflection, essential for students to internalize sustainable practices within entrepreneurship. Similarly, Fauske *et al.* (2024:114) review a range of educational tools designed to teach entrepreneurship for sustainability, suggesting that diverse pedagogical tools are essential for cultivating an entrepreneurial mindset that aligns with sustainability goals. These pedagogical methods emphasize experiential, social, and critical learning frameworks that are increasingly valued in sustainable entrepreneurship education. Baltador and Grecu (2023: 40) highlight the role of social entrepreneurship education in fostering a sense of social responsibility among students, while Rosário and Raimundo (2024: 780) conduct a comprehensive review identifying key studies on sustainability and entrepreneurship, supporting the need for

innovative teaching methods to build sustainability-conscious entrepreneurs. Dzomonda and Fatoki (2019: 4) posit the entrepreneurship pedagogical approaches to be student-centered where students are actively engaged in learning activities that foster critical thinking, problem-solving, and creativity. This can be achieved through group discussions, role-plays, and project-based learning. Moreover, the authors support Grivokostopoulou *et al.* (2019: 3) framework which emphasises that entrepreneurship awareness, skills and knowledge should be practical and business level at a higher education institution. Figure 2 below highlights the framework. The findings are in line with those of Iwu *et al.* (2021: 5) who found that while students recognised the importance of entrepreneurship education, they felt that the curriculum needed the practical components necessary for real-world application. The study emphasised a need for curriculum improvement to enhance practical experiences and industry interaction (Iwu *et al.*, 2021: 9). In a study by Fatoki and Oni (2014: 587), the authors observed that entrepreneurship education was effective in teaching students how to prepare business plans but less effective in facilitating practical networking opportunities and financial access.



Figure 2: Higher education institutions and youth entrepreneurship development model (Dzomonda and Fatoki 2019: 4)

Dzomonda and Fatoki (2019: 9) explain that in the study findings, South African higher education institutions can assist the youth by developing an entrepreneurship education atmosphere in the programmes, providing career guidance as to whether students would want to be job-seekers or job-creators, transforming communities with corporate social responsibility and lastly, to act as business incubators to encourage entrepreneurship careers in South Africa.

Community and industry engagement

James and Schmitz (2011: 5) argue that sustainability education should incorporate collaborative efforts with community partners, aligning ethical training with real-world application. This connection supports the notion that education extending beyond the classroom, through community involvement, cultivates essential skills and values for sustainable entrepreneurship. Suguna *et al.* (2024: 7550) highlight the value of partnerships and incubators in entrepreneurial education, noting that these initiatives not only provide practical support but also bridge the gap between academic institutions and industry needs. Furthermore, Rahmawati *et al.* (2023: 655) illustrate how community engagement in entrepreneurship education enhances student competencies by providing hands-on experience that empowers students to address social and environmental issues through business. Nhleko and van der Westhuizen (2022: 6) underscore the critical role of industry integration in academic curricula, which enables students to acquire relevant skills needed for a technologically advanced workforce. This integration is foundational for sustainable entrepreneurship education in South Africa, as it not only imparts technical skills but also aligns educational outcomes with industry expectations.

Community and industry engagement play a pivotal role in this process, creating a learning environment that reflects the realities of the entrepreneurial landscape. This perspective aligns with the findings of Tiberius *et al.* (2023: 11), who demonstrated that bringing local entrepreneurs from sustainable enterprises, social impact organizations, and the broader community into the classroom provides students with invaluable, practical insights. These guest speakers enrich students' understanding by linking theoretical knowledge with the dynamic, real-world challenges of sustainable enterprises. Kimanzi (2020: 474) similarly emphasizes the value of entrepreneurial education that involves community and industry; such engagement not only introduces students to diverse entrepreneurial viewpoints but also fosters creativity and builds essential networks with experienced practitioners. This approach to education reflects Jirapong *et al.* (2021: 3) findings, which advocate for collaborative internships

and mentorship programs with sustainable enterprises. These initiatives, by providing students with direct exposure to the entrepreneurial process, help develop practical skills while offering guidance from seasoned professionals. Botha and Bignotti (2016: 6) support this approach, highlighting that internships and mentorships within entrepreneurial environments allow students to build networks, hone practical skills, and understand sustainable business practices in depth.

The studies highlighted several challenges and barriers to effective entrepreneurship education as described below.

Inadequate support from the government: The South African government currently spends large sums to develop youth entrepreneurship (Botha and Bignotti, 2016: 5). Nevertheless, those government initiatives that have been put in place since 1994 have not accomplished the desired results, partly because of a widespread lack of awareness of these initiatives amongst the target population (Nambiar and Methil, 2017: 28). The success of entrepreneurial support systems has been demonstrated to be significantly influenced by collaboration within the system (Ndala and Pelser, 2019: 245). As entrepreneurship is a source of innovation, growth, and employment, the government should support and encourage it.

Practical component deficiency: Iwu *et al.* (2021: 6) identified a lack of practical components in the curriculum as a significant barrier. Students reported that whilst they learned theoretical aspects and business planning, there was a gap in practical skills and real-world application. The study by Nhleko and van der Westhuizen (2022: 9) highlighted the challenge of keeping curricula up to date with the rapid advancements in technology, stressing the need for continuous curriculum development.

Networking and finance access: Fatoki and Oni (2014: 587) note that entrepreneurship education was less effective in helping students meet potential business partners and access financial resources, indicating a need for improved support structures and networking opportunities within the educational framework. Financial institutions like banks in developing countries reflect entrepreneurs as being too risky specifically, because these enterprises have insufficient surety and credit history. Offering innovative and diverse financial products to entrepreneurs on a global scale can improve access to finance and reduce the enormous financial gap. Khan and Anuar (2018: 95) noted that inaccessibility to finance is recognised as one of the primary external restrictions faced by entrepreneurs. Accessibility to finance is a major factor hindering the growth and success of entrepreneurs. As a result, adequate access to financing is essential to permit entrepreneurs to contribute to the economic development of the nation. Radebe (2019: 62) alluded that there is a positive association between the growth of youth entrepreneurship and access to credit.

Implications for Policy and Practice: Sustainable Entrepreneurship Education in South Africa: Recommendations for Educators, Policymakers, Practitioners and Researchers

Educators must develop curricula that align entrepreneurship education with the United Nations' SDGs, incorporating themes such as eco-innovation, sustainable business models, and a comprehensive understanding of Africa's sustainability challenges and opportunities. There is also a need to ensure that sustainability principles permeate the educational experience rather than being confined to isolated modules, fostering a deeper understanding of sustainability as integral to entrepreneurial endeavours. A shift from teacher-centered to student-centered approaches is advises by integrating practical components like internships, field trips, service-learning projects, and simulations. Educators must also engage students in real-world sustainability projects to apply theoretical knowledge practically, cultivating both skills and an entrepreneurial mindset. It is also necessary to provide opportunities for students to interact with successful entrepreneurs practising sustainable strategies, serving as inspirational role-models to shape students' attitudes and aspirations towards sustainable entrepreneurship.

Policymakers should encourage educational institutions to adopt holistic approaches in curriculum development by providing guidelines and frameworks that integrate sustainability into entrepreneurship education programs. They should also facilitate partnerships between educational institutions and industry stakeholders to ensure curricula relevance and alignment with real-world sustainability challenges. There is a need to allocate resources to support experiential learning programs such as internships, service- learning projects, and industry collaborations, all of which are crucial for providing students with practical skills in sustainable entrepreneurship. Establishing grants and funding opportunities to incentivize institutions will encourage them in developing innovative experiential learning projects focused on sustainability. Policymakers should also foster collaboration amongst educational

institutions, businesses, and government agencies to share best practices and successful models of sustainable entrepreneurship education. Organizing workshops, conferences, and seminars to facilitate knowledge exchange and promote continuous improvement in sustainable entrepreneurship education will also be advantageous.

Practitioners need to collaborate with universities and colleges to provide students with practical learning opportunities by offering internships, and mentorship programs, and engaging them in real-life projects that tackle sustainability challenges. They should participate actively in curriculum development committees to ensure that educational content meets industry needs and sustainability goals. Invitations should be extended to successful sustainable entrepreneurs to interact with students through guest lectures, workshops, and mentorship programs, sharing their experiences and insights on sustainable business practices. Practitioners also need to emphasize the benefits of sustainable entrepreneurship, such as long-term profitability, social impact, and environmental stewardship as well as support employees in advancing their education and training in sustainable entrepreneurship by facilitating access to professional development programs, workshops, and courses focused on sustainability and innovation. Also, beneficial would be to foster a culture of continuous improvement and innovation within organizations, stressing the importance of staying current with evolving trends and best practices in sustainable entrepreneurship.

Areas needing further investigation include the long-term impact of integrating sustainability into entrepreneurship education on graduates' entrepreneurial ventures. There is also a need to explore how exposure to sustainability principles during education influences business practices and success rates over time. Future researchers could conduct comparative studies to assess the effectiveness of various experiential learning methods, such as internships, field trips, and simulations, in developing sustainable entrepreneurial skills and mindsets amongst students. Students can also explore the role of government policies and initiatives in supporting sustainable entrepreneurship education and evaluate how policy frameworks can be strengthened to better integrate sustainability into educational curricula and promote sustainable development through entrepreneurship. Researchers could also conduct comparative studies across different South African educational institutions to understand variations in curriculum design, teaching methods, and outcomes related to sustainable entrepreneurship education.

Conclusion

In this article, a systematic literature review was used to evaluating Sustainable Entrepreneurship Education (SEE) in South Africa. The study discovered that Entrepreneurship education aids economic development and while lecturer competency is crucial. Furthermore, the systematic review divulges that Sustainable Entrepreneurship Education is essential for sustainable development, providing the skills necessary to drive economic growth, self-reliance, and improved living standards without compromising future generations' ability to meet their needs. Consequently, the researchers find that entrepreneurship education should incorporate Industry courses to prepare students for modern work environments. Furthermore, the systematic literature review reveals that sustainability orientation predicts entrepreneurial intentions which can lead to sustainable development and job creation. As a recommendation, the research suggests a need to invest in capacity building for educators in order to ensure that they are well-equipped to teach Entrepreneurship Education effectively. The study also highlights the imperative to ensure in-depth program design with clearly defined objectives, aligning educational activities with sustainable development goals to maximize impact. Moreover, constant evaluation methods to assess the effectiveness of Entrepreneurship Education programmes need to be implemented. There must be an alignment of Entrepreneurship Education programmes with the SDGs, thereby emphasizing the role of entrepreneurship in driving economic, social, and environmental sustainability.

This study highlights the significant role of community and industry engagement in enhancing sustainable entrepreneurship education. Integrating real-world experiences into academic curricula not only equips students with practical skills and knowledge but also fosters a holistic understanding of sustainable entrepreneurship. By partnering with industry professionals and community organizations, universities can create a dynamic educational ecosystem that bridges the gap between theory and practice, providing students with essential insights into the complexities and demands of the entrepreneurial landscape. The findings affirm that entrepreneurship education enriched by community involvement and industry collaboration prepares students for a technologically advanced, socially responsible, and environmentally conscious work environment. By exposing students to diverse perspectives, fostering creativity, and building networks with experienced entrepreneurs, this approach cultivates skills that are vital for sustainable business success. Additionally, mentorship programs, internships, and guest

lectures serve as critical mechanisms for instilling a strong foundation in sustainable practices, ultimately preparing students to contribute meaningfully to South Africa's entrepreneurial growth and economic development. The study emphasizes that South African universities have a unique opportunity to drive sustainable entrepreneurship through an education model that actively involves community and industry stakeholders.

Declarations

Interdisciplinary Scope: This study integrates perspectives from multiple disciplines, including entrepreneurship, education, sustainability, economics, and public policy. The study acknowledges the role of government policies and industry collaboration in shaping effective educational frameworks. This interdisciplinary approach is essential for understanding the complex interplay between education, entrepreneurial behaviour, and socio-economic development, ultimately contributing to a more holistic perspective on sustainable entrepreneurship in South Africa.

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