

THE ROLE OF ENTREPRENEURSHIP EDUCATION IN SHAPING FINAL-YEAR STUDENTS' CAREER PATHS: A CASE STUDY OF DURBAN UNIVERSITY OF TECHNOLOGY'S FACULTY OF MANAGEMENT SCIENCE

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ABSTRACT

This study investigates the Durban University of Technology's (DUT) endeavors in fostering entrepreneurship education. Employing a quantitative research methodology and a survey research design, the study targeted 162 final-year students at DUT, receiving completed questionnaires from 136 respondents, representing an 84% response rate. The purposively selected sample sheds light on students' perceptions of entrepreneurship. The findings underscore a positive inclination towards entrepreneurship among students, highlighting the necessity of reinforcing entrepreneurship education within higher education institutions to cultivate favorable attitudes towards entrepreneurship as a viable career path. Recommendations advocate for the availability of comprehensive entrepreneurship programs across academic institutions, equipping students with requisite knowledge and skills. Practically, this research underscores entrepreneurship's pivotal role in driving economic growth in South Africa, particularly in addressing socio-economic challenges through employment creation. It emphasizes the imperative for robust support for entrepreneurship, positioning entrepreneurship education as a cornerstone for fostering a vibrant entrepreneurial ecosystem. DUT emerges as a significant player in this landscape, fostering an entrepreneurial ethos among graduates and implementing impactful entrepreneurship study programs. This study contributes to the existing literature by shedding light on DUT's role in entrepreneurship education, addressing a gap in current research.

Keywords: Entrepreneurship, Entrepreneurship Education, Durban University Of Technology.

1. INTRODUCTION

Today, against the background of rapid globalization and the inadequacy of government resources available for job creation, the development of entrepreneurship has become a major concern of policies followed by countries wishing to secure a competitive advantage that allows for sustained growth and increased employment, enhancing the economy and alleviating poverty (Matlay & Mitra 2002, Chantes 2022). Entrepreneurship is increasingly considered as a developmental force in society at large. It plays a significant part in growing the economy of a country (Efi, 2012:15). Hisrich, Peters & Shepherd (2009:12) defines entrepreneurship as the practice of recognizing business opportunities, identifying, directing and channelling the necessary resources, and accommodating associated risks, so that a profit can be made out of the venture. Kitson, Martin & Tyler (2004:993) note that entrepreneurship has long been recognized as a critical means whereby the competitiveness of countries may be stimulated. Hence, it is a significant condition for economic growth and stability. Its effects are notable in increased innovative initiatives, industrial development, greater productivity, competitiveness, and wealth creation (Kuratko, Morris & Schindehutte, 2015). Entrepreneurship education leads to start-up business ventures gradually growing into sizable enterprises and creating a considerable number of employment opportunities.

According to Nabi, Liñán et al. (2017), there is global consensus that, in view of the rapidly changing business environment, institutions of higher education need to focus more on providing entrepreneurship education. Increasing globalization has brought with it the uncertainty of challenges affecting many spheres of

life and impacting on stakeholders (Heinonen 2007). The result is that in today's world entrepreneurship education is seriously in demand. As Bratianu and Stanciu (2010:121; Gibb & Hannon 2006) state entrepreneurship education implies "developing specific attributes, behaviour and abilities on an individual level which can have different expressions in an individual's career, thereby creating long-term benefits for the society and economy."

In broad terms, entrepreneurship education entails the capacitating of students with a knowledge base and aptitudes for the specific purpose of developing successful entrepreneurs. This education should be presented at institutions of higher education in the form of recognized educational programmes. Entrepreneurship education should be aimed at cultivating an entrepreneurial mind-set and an open eye for innovative approaches. Boldureanu, Ionescu et al. (2020) and Adejimola & Olufunmilayo (2009) confirm that entrepreneurship education ought to be embedded in institutions of higher learning for the production of competent and competitive graduates.

Barba-Sanchez & Atienza-Sahuquillo (2018) are of the opinion that entrepreneurship education can deal with some deficiencies in existing education system. For instance, the promotion of an entrepreneurial mind-set by educational systems increases the availability of nature entrepreneurs in countries. Onuma (2016) states that an entrepreneurship education is established to stimulate and facilitate entrepreneurial activities and could therefore result in lowering unemployment rates, and increasing the development of new businesses. Vakili, Tahmasebi, Tahmasebi and Tahmasebi (2016) notes that students of entrepreneurship use their education to aid them in the writing of business plans, in launching and managing commercial enterprises and to offer consulting services to prospective business owners.

Entrepreneurship education prepares future leaders for solving complex problems in rapidly changing situations by using the particular skills that generate an entrepreneurial mind-set (Walsangkar, 2017:3). Boldureanu, Ionescu et al. (2020) therefore argue that relevant entrepreneurship education needs to be a top priority of governmental processes and in private sectors and has to be seen as a critical mechanism for attaining sustainable economic development and societal progress. Due to a current lack of employment opportunities, an escalating number of graduates, and fierce competition for the available jobs, graduates are expected to develop entrepreneurial qualities enabling them to compete nationally as well as internationally in the labour market (Barba-Sanchez & Atienza-Sahuquillo 2018).

Entrepreneurship education has gained popularity in South Africa institutions and introduced entrepreneurship programmes. The introduction of such programmes, according to Davies (2001) stimulated by the dismal downturn in South Africa's capacity to engage new people into the formal sector. Hence, the entrepreneurship education system has the objective of capacitating job inventors, who are taking calculated risks by opening up new ground and being innovative, rather than attracting job seekers who may after their graduation find themselves swelling the legions of the unemployed ((Boldureanu, Ionescu et al. 2020) and Nieuwenhuizen & Groenewald, 2008). Considering the mounting number of graduates in the labour force and the saturated state of employment in the government sector, unemployment of graduates is bound to grow over time. Therefore, Boldureanu, Ionescu et al. (2020) believe that attitudes and behavioural patterns of students in respect of self-employment and the establishment of bases for entrepreneurship have to be changed. In this context the present study seeks to explore the role of the Durban University of Technology in promoting entrepreneurship education.

Problem statement

On account of today's rapidly increasing rate of unemployment and its impact on the economy, entrepreneurship education has come to be seen as a major source for equipping graduates with a competitive advantage (Mian, Hussin et al. 2022). Entrepreneurship education has consequently gained prominence in

South African universities as well as globally (Ncube and Lekhanya 2023). Institutions of higher learning look not only to add value to their academic offerings, but also to encourage economic participation of the youth. The Global Entrepreneurship Monitor (GEM, 2018) reported that the entrepreneurial ecosystem in South Africa is weighed down by low transfer research and development, insufficient innovation, a lack of capacity, red tape, a lack of entrepreneurship education in schools and in addition poor cultural and social perceptions of entrepreneurship. This in itself has a negative impact on youth unemployment and poverty. Maritz & Brown (2013) maintain however that entrepreneurship education could lead to the realization of a range of socio-economic goals. The purposes of such education are often described as broadly economic, societal, and pedagogical in nature. Economic goals may include the creation of new business ventures and jobs while societal goals may refer to the establishment of an entrepreneurial culture and the pedagogical goals indicate capacitating potential entrepreneurs with relevant knowledge about entrepreneurship (Maritz & Brown, 2013).

The current unemployment rate in South Africa necessitates pedagogy that enhances entrepreneurship aptitudes, leading to the mastering of skills required for self-employment and job creation (Ncube and Lekhanya 2023). Onuma (2016:25) also remarks that, with increased numbers of graduates from universities, their unemployment rate will go up. In agreement, Awogbenle & Iwuamadi (2010) asserts that entrepreneurship is recognized as a major source of strategies for jobs creation and for improving or enhancing livelihoods and economic independence of young persons. As a response to the state of the national landscape, including the need for job creation and for a greater economic viability, entrepreneurship is recommended as a major source of positive development for all nations (Kourilsky, 1996:2). Although South African institutions of higher education currently tend to support student entrepreneurs, various challenges remain, some of which are of a social and institutional nature. At a social level, South African students are accustomed to being ‘job seekers’ rather than ‘job creators’ and the allure of a predictable monthly salary discourages them from considering entrepreneurship as a viable potential career field (DASTI, 2016). At an institutional level, providing students with support and effective guidance in crafting start-up ventures is a fairly new challenge for higher educational institutions.

Agbenyegah (2013) and Nafukho & Muiyia (2010:100) noted that the South African government has been and remains unable to offer solutions for the problems of high unemployment and poverty because of the hindrances impeding entrepreneurship programmes. According to Pooe, Mafini & Makhubele (2015), the South African government has since the dawn of democracy in 1994 been pressurized to correct socio-economic inequalities resulting from many decades of apartheid. Sibanda, Mishi & Tsegaye (2015) add that the South African economy has since 1994 not managed to create viable adequate employment opportunities. Evidence suggests that South Africa has a low rate of entrepreneurial activity as compared with efficiency-driven economies on average. In 2015 just 9.2% of adults were involved in setting up business ventures, compared to an average of 15% in efficiency-driven economies. At the same time 34% of adults were involved in the running of existing businesses against an average of 8% for efficiency-driven economies (GEM Report, 2017/2018). Against this backdrop, the present study looks at the role of the Durban University of Technology in the promotion of entrepreneurship education, basing itself on an exploratory single case study.

Objectives

The main objective of the study is to explore the role of Durban University of Technology in promoting entrepreneurship education in South Africa.

Specific objectives

1. Assess how Durban University of Technology students perceive the benefits of entrepreneurship education, and
2. An evaluation of the graduate attributes and skills needed in entrepreneurship education.

2. LITERATURE REVIEW

Fink (2009, p.3) indicates that a literature review is a “systematic, explicit, and reproductive method of identifying, evaluating and synthesizing the existing body of completed and recorded work produced by researchers, scholars and practitioners.” It is evident that a literature review provides evidence on what has been published previously by scholars on a particular subject of interest with details that are related to such subjects (Matlala, 2015, p.15). Therefore, a literature review presents the historical overview of a subject and content of the current situation, these include problems, issues raised, and arguments discussed, strengths and weaknesses (Matlala, 2015:15; Maphoto, 2016:22). The review thus helped the present researchers to identify the main methodologies and research techniques suitable for framing the present study. It identified themes used to conceptualize the variables that were investigated by the current study.

The role of public institutions in promoting entrepreneurship education

In reaction to the rapid rise of unemployment numbers, institutions of higher learning across the globe have established and developed aspects of entrepreneurship as study subjects with the purpose of fostering entrepreneurial mind-sets (Mian, Hussin et al. 2022). The higher education institutions play a fundamental role in economic systems, as they create, apply, and transfer new thinking and knowledge, develop qualified human capital, and foster the establishment of an entrepreneurial society (Audretsch, 2014; Guerrero, Cunningham & Urbano, 2015). Institutions of higher education are the producers of potential entrepreneurs, and their pivotal function is the provision of education and training while stimulating innovation (Farashah, 2013). Lanero, Vázquez, Gutiérrez and García (2011) refer to Gibb’s (2013) adequate explanation of how higher education institutions contribute to entrepreneurship education:

“Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity, and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society — local, national and international.”

Consequently, institutions have taken account of education and the development of entrepreneurial thinking in their pedagogy and sharpened entrepreneurial skills and innovative thinking as an important aspect of academic training (Vakili, Tahmasebi, Tahmasebi & Tahmasebi, 2016:78). Hence, institutions of higher learning are perceived as an environment that is conducive to the stimulation and enhancement of entrepreneurial education and that supports students in the development of an entrepreneurial knowledge base (Hase & Lautenschlager, 2011). Wong, Ho & Singh (2007) and Mian, Hussin et al. (2022) argue that higher educational institutions can develop a stronger entrepreneurial mind-set in students, capacitating them to reposition their anticipation of the job-market. Notably, Bukula (2009) emphasized that the higher education institutions are a vibrant and growing developmental sector universally recognized for offering entrepreneurship education, for taking outreach initiatives to provide training, mentoring, and other forms of support to small businesses while conducting small business-related research. In support, Onuma (2016:25) notes that academic entrepreneurial education has proven beyond reasonable doubt that the higher institutions are prime developers of human capital and in a good position to groom self-reliant graduates for possible job creation rather than having them end up as job seekers.

The higher learning institutions are recognized as major sources for the production of knowledge needed for development (Cloete et al., 2011; (Ncube and Lekhanya 2023). In addition, such institutions serve as agents of knowledge exchange in society. Thus, higher institutions of learning are seen as custodians of the knowledge base in contemporary society as well as playing a critical role in the economic development of entrepreneurship and small businesses and ultimately in the economic development of nations (Nicolaidis 2011; (Boldureanu, Ionescu et al. 2020). It is noted that students, when exposed to entrepreneurial activities, may be able to analyse

and synthesize various challenges and their contexts. They may also look for and identify opportunities and resources as well as incepting business ventures of their own (Isaacs et al. 2007; (Ncube and Lekhanya, 2023). The International Labour Organization (ILO, 2009) notes that entrepreneurship education leads young people to reconsider the significance of entrepreneurship in the social and economic development of their societies. Luhanga (2009) argues that the advancement of any country depends upon the availability of sufficient and applicably utilized skilled human capital and of professionals who have passed through a quality system of education. Turton, Kew & Christensen (2012) emphasize the integration of entrepreneurship education in the higher education curriculum as critical for dealing with unemployment and as essential for young adults venturing into the labour market whose chances of employment, efficient productivity, and prospective contribution to economic development will be considerably increased. Nurton & Herrington (2012) remark on the positive correlation between entrepreneurial intention and level of education.

According to Volery et al. (2015), South African institutions of higher education seek to play an important part in the development of the entrepreneurial ecosystem, the purpose of which is to boost the number of sustainable start-up ventures in the country. The ecosystem approach involves networking with relevant experts and professionals in the industry for knowledge sharing while students will require information on, for example the usage of physical resources such as educational research facilities. Higher educational institutions also collaborate with industrial bodies to create internship programmes, work integrated learning opportunities and research-related placement for students. Such working relationships play significant roles as the arrangements may be extended and used to guide upcoming young entrepreneurs to further their business aspirations. Raval (2016:24) posits that ecosystems also support higher education institutions in the crafting, generating and disseminating of necessary knowledge of new technologies and their commercial applications.

The graduate attributes and skills needed in entrepreneurship education

Ncube and Matlala (2024) cite DuBrin (2012) who describes entrepreneurship skills as a set of learned behaviours that lead to job performance. Edmond et al. (2014) characterizes skills as abilities to comprehend knowledge and apply it in practice, thereby demonstrating a special quality that drives development and innovation. From the provision of knowledge to the improvement of skills, entrepreneurial education entails the stimulation of general and professional abilities. Komarkova et al. (2015) remarks that skills are significant abilities when it comes to enhancing innovative thinking. Odia and Odia (2013) posit that the prior experience and skills of entrepreneurs affect their aptitude for recognizing business opportunities coming their way.

Wei, Liu & Sha (2019:3) point out that entrepreneurs are made by obtaining knowledge and skills, required for entrepreneurs who establish business ventures for which they are not equipped with hereditary skills. According to Volery et al. (2015), entrepreneurial skills need to be shaped and entrepreneurship education serves as an incubator of innovative thinking. Galloway & Brown (2002) refer to the process of influencing the capabilities of student entrepreneurs as a social interactive process in which information resources are made available for students to observe and to acquire, making them direct participants in entrepreneurship education. This process involves also the production of new knowledge by transforming knowledge and experience into practice. Hence, entrepreneurship education plays a pivotal role in influencing students' attitudes towards entrepreneurship.

Gundry et al. (2014) observe that entrepreneurship education is mainly concerned with encouraging the innovative thinking of students, and with nurturing, based on their knowledge, creative skills for dealing with practical challenges. Entrepreneurship aptitudes help student entrepreneurs in complex and dynamic environments to identify and acquire relevant resources, using their knowledge and obtaining support of organizations. Arguably, Brown (2000) and (Mian, Hussin et al. 2022) mentioned that entrepreneurship education should be “viewed in terms of the skills that can be taught and characteristics that can be engendered

in students”, enabling them to be innovative. Well nurtured and developed skills capacitate the student entrepreneur to transform resources and accumulated experience into the ability to identify and create new products. Many developing nations are plagued by a high unemployment rate, due inter alia to a misalignment of skills required by the economy and those possessed by the populace (Omidyar Network, 2013). Ncube (2015:89) cites Martin & Staines (2008) who opine that a deficiency of entrepreneurial and management skills is the sole reason why new business ventures don't succeed. This makes a lack of entrepreneurial skills into a major contributing factor to the problem of youth unemployment (Adebisi & Oni, 2012). The incidence of graduate/youth unemployment is attributed to the educational system, operated in the pre-independence and the democratic era, which emphasized liberal education rather than the acquisition of vocational skills that prepare school leavers and graduates for better employment opportunities (Onuma, 2016:18).

Masemola (2013) suggests for instance that fostering collaboration with the industry sector would enable students to increase their experiential and practical knowledge via internship or placement programmes. Thereby students would become more employable in the job-market and alumni more successful as entrepreneurs in their own businesses. Thus, South African economic growth will be positively affected and the unemployment rate minimised. Policymakers in government, the corporate sector and institutions of learning could update educational approaches to the development of successful graduates by ensuring an optimal use of resources. According to Wong et al. (2007), institutions of higher learning are not always able to bridge educational gaps alone and without the intervention of other stakeholders. Such gaps ought to be resolved by means of collective relationships between the academic fraternity, government and the industry sector, usually referred to as a triple helix nexus. It is, notably, the industry sector that defines the employability of student graduates delivered by educational institutions at the exit level. However, government as the custodian of education, could assist in the development of primary and secondary curricula that would be focused on influencing the mind-set of students from an early age. The government could also make the data collected from various stakeholders to inform role-players in the triple helix, which can in turn influence policy direction and curriculum development (Nicolaides, 2011; (Nabi, Liñán et al. 2017). Masemola (2013) has conducted a study on exploring UNISA small business development hub. The results indicate that UNISA alumni are unable to apply the theoretical knowledge acquired in their studies to business practice in contemporary society.

Theoretical framework: triple helix model

The Triple Helix model is an innovative framework that describes the dynamic relationship between government, academia, and industry in fostering innovation and economic development (Cai and Etzkowitz, 2020). Applying the Triple Helix Model to entrepreneurship education at Durban University of Technology (DUT) involves understanding the interactions between academia, industry, and government in fostering an entrepreneurial ecosystem within the university and beyond. DUT serves as the academic component of the Triple Helix Model, playing a central role in providing entrepreneurship education to students. Through its curriculum, faculty expertise, and support services, DUT equips students with the knowledge, skills, and mindset necessary for entrepreneurship. This includes offering courses, workshops, and experiential learning opportunities focused on entrepreneurship, as well as fostering a culture of innovation and risk-taking among students.

Industry partners collaborate with DUT to provide students with real-world exposure to entrepreneurial practices and opportunities. This collaboration can take various forms, such as guest lectures, internships, mentorship programs, and joint research projects. Industry partners also offer insights into market trends, industry needs, and emerging opportunities, helping to bridge the gap between academic theory and practical application in entrepreneurship education.

Government agencies play a supportive role in entrepreneurship education at DUT by providing funding, policy support, and regulatory frameworks conducive to entrepreneurial activity. This includes initiatives to promote entrepreneurship education, support entrepreneurship research, and facilitate technology transfer and commercialization. Government agencies also collaborate with DUT on initiatives aimed at promoting entrepreneurship as a driver of economic growth and social development. By applying the Triple Helix Model, DUT leverages the synergies between academia, industry, and government to create a supportive ecosystem for entrepreneurship education. This collaborative approach enhances the relevance, impact, and sustainability of entrepreneurship programs at DUT, ultimately contributing to the development of entrepreneurial talent and the growth of the entrepreneurial ecosystem in South Africa.

The Triple Helix Model provides a framework for understanding the interconnectedness of academia, industry, and government in fostering entrepreneurship education at DUT. By leveraging these interactions, DUT strengthens its role as a catalyst for entrepreneurial development and economic growth in South Africa.

3. METHODOLOGY

Chikomba, Rodrigues & Ngoepe (2020:4) note that research methodologies range from quantitative (assigning numbers to observations) to qualitative (reporting observations in natural language making less use of numbers). To achieve its objective and find answers to the research problem that is the focus of this study, a quantitative research methodology and survey research design were adopted. Bryman & Bell (2011:153) posit that a quantitative approach uses a systematic practice where numerical data and measurement capacity are used to gather required information on the phenomenon under investigation. Hence, a questionnaire was used as a data collection instrument. In agreement with Bryman (2012:233), the researchers considered the questionnaire tool appropriate and fit for the study because of its ability to protect anonymity and confidentiality, while ensuring the likelihood of obtaining precise and accurate information from a large sample. In addition, it is cheap and can be speedily administered without influence from the researchers. Moreover, the use of a questionnaire as tool provides standardization of data collection. The population of the study consists of 162, which in Mugenda’s words (2008:181), refers to the “entire group of individuals, a set of objects, cases, which are the focus of the research, whose characteristics the researchers seek to study.” Cooper & Schindler (2008:374) and Matlala (2020:164) on the other hand, define population as a collection of elements or units about which researchers wish to make inferences enabling them to explain a phenomenon.

Questionnaires were distributed to all 162 final-year students in the Faculty of Management Sciences at Durban University of Technology. These students constituted the target population, and no sampling was carried out. The completed questionnaires of 136 participants were returned, which yielded a 84% response rate. The Statistical Package for the Social Sciences was used for data analysis. The SPSS software package was chosen because it offers the most comprehensive model for reporting, modelling and analysing data (Powell & Connaway, 2004). For that reason, the study used descriptive statistics such as frequencies, percentages and bar graphs to explore entrepreneurship education at DUT. The quantitative data were analysed using SPSS and the results are presented according to the research questions listed below. Matlala (2020:164) mentions the significance of ensuring that the interpretation of data is done efficiently as errors might lead to incorrect conclusions compromise the study.

4. RESULTS

Table 1. To assess the role of Durban University of Technology in promoting entrepreneurship education

Options	Percentage (%)
The institution offers support to students in order to start up their own businesses, by assisting them with writing a business plan, specialist advice from business mentors and	55.9%

financial assistance	
The institution collaborates with entrepreneurship experts to promote entrepreneurship education	44.1%
The institution provides training and development programmes to promote business start-up	42.7%
The institution invites entrepreneurs and practitioners from different organisations to share their experience with students	48.1%
The institution organises career talks during convocation day	47.8%
The institution facilitates student visits to industries to gain more knowledge about their subject	46.4%
The institution practically orients students to outreach programmes	50%
The institution allows us the space to “try and fail” to encounter “intelligent failures” as part of effective learning	47.8%

Table 2. The perceptions of students about the benefits of entrepreneurship education

Options	Percentage (%)
Entrepreneurship education enhances knowledge about the benefits of entrepreneurship in society as a whole	75.7%
Entrepreneurship education in my institution educates the learners about the benefits of entrepreneurship in the development of the South African economy	78.7%
Entrepreneurship education helps students to consider new venture creation and self-employment as a valid graduate career option	83.1%
Entrepreneurship education seeks to prepare people to be responsible, enterprising individuals, who become entrepreneurial thinkers that contribute to sustainable economic development	84.6%
Entrepreneurship education contributes to decreasing the number of unemployed in the country	76.4%
Entrepreneurship education determines individual entrepreneurial interests	72.8%
Entrepreneurship education fosters the creation of new entrepreneurs who could start new ventures	66.1%
Entrepreneurship education increases the number of graduate start-up businesses	66.2%

Table 3. Graduate attributes and skills needed in entrepreneurship education

Options	Percentage (%)
The institution provides students with internship opportunities in businesses in the local economy, which teach them business skills	60.3%
Entrepreneurship education imparts the skills to take calculated risks	68.4%
Entrepreneurship education can play a crucial role in gaining the necessary skills to manage a business and change the views of South Africans towards self-employment	76.4%
Entrepreneurship education provides the ability to pursue opportunities by coming up with new ideas and marshalling needed resources	76.4%
Entrepreneurship education affords ability to create and manage a new venture and the ability to think in a creative and critical manner	82.3%
Entrepreneurship education teaches that social interaction is an important skill for a successful entrepreneur	81.6%

5. DISCUSSION OF FINDINGS

Durban University of Technology in promoting entrepreneurship education

The first objective of this study is to assess the role of public institutions, specifically in KZN, in promoting entrepreneurship education. The findings tell us that 55.9% of respondents agreed that the Durban University of Technology offers support to students, assisting them to start up their businesses, writing a business plan, providing specialist advice from business mentors and financial assistance. 50% found that “The institution practically directs students to outreach programs”. The idea that the institution invites entrepreneurs and practitioners from different organizations to share their experience with students was agreed upon by 48.1% of participants. In the experience of 47, 8 % the institution allows for the space to “try and fail” to encounter “intelligent failures” as part of effective learning. The same percentage (47, 8) confirmed that the institution organizes career talks during convocation day. That the institution facilitates student visits to industries where they gain additional knowledge about their subject was accepted by 46.4%. That the institution provides training and development programs to promote business start-ups ended up with the lowest percentage of 42.7%, while 44,1% of participants opined that the institution collaborates with entrepreneurship experts to promote entrepreneurship education.

Vakili et al. (2016:85) in a study entitled “The role of education in entrepreneurship development”, define the developing and improving of human resources as having a major impact and opine that entrepreneurship education and development programs can provide a wide range of opportunities or structures for harnessing behavioral and technical skills which in turn will assist the recipients of such education to achieve certain levels of growth. Ndedi (2009:467) reiterates that while entrepreneurship education is provided in various South African institutions of learning, this by itself not enough and institutions need additional educational attributes to enable them to effectively influence the issue of unemployment. They need, for example, to establish what might be called business incubators. Ndedi (2009:467) argues that such incubators can play a critical role in getting students actively involved in linking their theoretical education to the necessary practical exposure. In addition, these incubators might give technical assistance and management guidance to young graduates and to youths more in general, who aspire to open their own business and who have the mind-sets of potential entrepreneurs.

The benefits of entrepreneurship education: students’ perceptions

The second objective of this study is concerned with the perceptions of students of the benefits offered by entrepreneurship education. The highest percentage of positive reactions (84,6%) was accorded to the statement that “Entrepreneurship education seeks to prepare people to be responsible, enterprising individuals, who become entrepreneurial thinkers that contribute to sustainable economic development” That entrepreneurship education helps students to consider new venture creation and self-employment as a valid graduate career option was agreed upon by 83.1% of respondents, followed by 78,7% confirming that “Entrepreneurship education in my institution educates the learners about the benefits of entrepreneurship in the development of the South African economy”. 76,4% believed “Entrepreneurship education contributes to decreasing the number of unemployed in the country”, whereas 75,7 % supported the statement that “Entrepreneurship education enhances knowledge about the benefits of entrepreneurship in society as a whole”. 72,8% of participants agreed that “Entrepreneurship education determines individual entrepreneurial interests”, while 66,2% opined that “Entrepreneurship education increases the number of graduate start-up businesses”. The lowest number of positive reactions was according to the viewpoint that “Entrepreneurship education fosters the creation of new entrepreneurs who could start new ventures”, namely 66.1%.

Moreover, in a similar study by Fiore, Sansone & Paolucci (2019), students were asked whether they perceived the benefits of entrepreneurship education as being more practical (5) or theoretical (1) in kind, and to evaluate the nature of benefits on a scale of 1 to 5. The average score of 4 emerged, indicating that the benefits were perceived as slightly more practical than theoretical (Fiore, Sansone & Paolucci, 2019:13). Wei,

Liu & Sha (2019) conducted a study on how entrepreneurship education influences students' capacities for innovation. The outcome was that entrepreneurship education provides student entrepreneurs with relevant information, knowledge and necessary resources, while creating an atmosphere that strongly encourages innovative and entrepreneurial thinking, while reducing uncertainty. Thus, entrepreneurship education was seen as offering an all-inclusive learning management for student entrepreneurs, helping them to develop correct values and a cognitive mind-set, enhancing their perceptions of potential innovation and of the need to continuously accumulate and integrate new knowledge to shape their capabilities (Wei, Liu & Sha, 2019).

A study by Beghetto & Kaufman (2010), entitled "Nurturing creativity in the classroom", was aimed at assessing students' perceptions of the benefits of entrepreneurship education. The results show that perceptions and attitudes of students in regard of entrepreneurship education can determine whether students will show creativity and may point to a self-judgement of one's perceived competence in generating novelty ideas, thereby forming an internal, lasting, and stable innovative personality. Students view entrepreneurship education as pointing to innovation, and as fostering a thoughtful approach to entrepreneurship which is a primary responsibility of institutions of higher learning. Frank & Luthje (2004) accentuate that the higher learning institutions must provide an academic environment that may serve as a catalyst for high techno start-ups.

Entrepreneurship education has gained prominence globally due to its potential to empower individuals with the knowledge and skills necessary to thrive in today's dynamic economic landscape. Understanding how students perceive the benefits of entrepreneurship education is crucial for assessing the effectiveness of such programs. Research by Kuratko, Morris, & Schindehutte (2015) highlights the multifaceted benefits of entrepreneurship education, including increased innovative thinking, improved problem-solving abilities, and enhanced job creation prospects. These findings suggest that entrepreneurship education not only equips students with entrepreneurial skills but also fosters a mindset conducive to seizing opportunities and overcoming challenges. In the context of South Africa, Nieuwenhuizen & Groenewald (2008) emphasize the importance of entrepreneurship education in addressing the challenges of unemployment and economic inequality. Their study suggests that entrepreneurship education can empower students to become job creators rather than job seekers, thereby contributing to socio-economic development. Moreover, Barba-Sanchez & Atienza-Sahuquillo (2018) argue that entrepreneurship education promotes an entrepreneurial mindset, which is essential for navigating uncertainty and driving innovation in today's business environment.

Assessing graduate attributes and skills as offered in entrepreneurship education

The third objective of the present study is to assess the attributes and skills needed to be part of graduate entrepreneurship education. Our findings indicate that 82,3% of participants was of the opinion that "entrepreneurship education affords ability to create and manage a new venture and the ability to think in a creative and critical manner". That "Entrepreneurship education teaches that social interaction is an important skill for a successful entrepreneur" was accepted by 81.6% of respondents while 76,4% agreed that "Entrepreneurship education provides the ability to pursue opportunities by coming up with new ideas and marshalling needed resources". That "Entrepreneurship education can play a crucial role in gaining the necessary skills to manage a business and change the views of South Africans towards self-employment" was the view of 76.4% and 68,4% of respondents confirmed that "Entrepreneurship education imparts the skills to take calculated risks" whereas the lowest percentage of respondents (60,3%) agreed that "The institution provides students with internship opportunities in businesses in the local economy, which teach them business skills". Ncube (2015, p.87) argues that the future capacity of South African entrepreneurship depends upon how well people are being capacitated with entrepreneurial skills needed to establish, grow, and run their own business ventures.

Ncube (2015:87) has conducted a study on “the intrinsic motivational factors of small and medium business growth”. The findings are that according to 86.7% of the respondents the application of entrepreneurial skills is what leads to new small and medium business growth. Furthermore, Ncube (2015:87) argues that entrepreneurial skills enable entrepreneurs to be well prepared for assessing the needs and the prospects for potential projects that will enable a small business venture to succeed. Ncube (2015:87) cites DuBrin’s (2012) “entrepreneurs should be made aware of essential basic management skills that are not only desirable but required for the successful interventional guidance of a business venture”. Also, the results of a study entitled “The role of education in entrepreneurship development” by Vakili et al (2016:85), confirm the importance of entrepreneurship education which enhances individuals’ functional knowledge and skills at all levels, leading to the expansion of their personalities and mental horizons. Fiore, Sansone & Paolucci (2019:18) studied entrepreneurship education in a multidisciplinary environment in Turin. Their findings indicate that the students involved had acquired their skills from opportunities to listen to professionals from different areas and to actors in the wider local entrepreneurial ecosystem, allowing them to be in contact with different players in the entrepreneurship domain.

A study by Onuma (2016:25) on “Entrepreneurship education in Nigerian tertiary institutions” assesses the graduate attributes and skills needed to be part of entrepreneurship education. Onuma, reporting on the requirements for the successful management of small-scale businesses, concludes that full knowledge of entrepreneurial skills and competencies is relevant for the running of any meaningful business. With such competencies and with acquired skills entrepreneurs will be in a position to create employment opportunities leading to a reduction of high levels of unemployment. Sandrock (2011) suggests that graduates from universities should be equipped with entrepreneurial skills in order to create jobs, rather than seeking paid employment. Sandrock (2011) stresses that a generation of employers would have much more effect on economies than a generation of employees. Entrepreneurship education aims to cultivate a diverse range of attributes and skills essential for success in entrepreneurial endeavors. Research by Hisrich, Peters, & Shepherd (2009) identifies key attributes such as creativity, resilience, and risk-taking propensity as critical components of entrepreneurial competence. Similarly, Efi (2012) emphasizes the importance of resourcefulness, adaptability, and opportunity recognition in entrepreneurial skill development. In the South African context, Davies (2001) and Baimuratov, Zhanbayev et al. (2020) highlighted the significance of practical skills such as business planning, financial management, and market analysis in entrepreneurship education. These skills enable graduates to effectively launch and manage entrepreneurial ventures in a competitive business environment. Furthermore, Vakili et al. (2016) argue that entrepreneurship education should not only focus on theoretical knowledge but also provide practical experiences such as business plan development and consulting projects. By evaluating the graduate attributes and skills needed in entrepreneurship education, this study can provide insights into the alignment between educational curricula and industry demands, thereby enhancing the relevance and effectiveness of entrepreneurship programs at Durban University of Technology.

6. CONCLUSION AND RECOMMENDATIONS

In the current study, it is evident that the Durban University of Technology (DUT) plays a pivotal role in nurturing an entrepreneurial mindset among its student graduates through the effective implementation of entrepreneurship programs. Entrepreneurship is recognized as a catalyst for fostering economic growth and as a significant avenue for job creation, thereby addressing socio-economic challenges through the establishment and development of business ventures (Ajayi-Nifise, Tula et al. 2024). Entrepreneurship emerges as a critical focus area within higher education institutions, directly contributing to the quantity and quality of new startup ventures, thereby indirectly bolstering economic stability (Bradley, Kim et al. 2021). The entrepreneurship education offered at DUT is perceived as instrumental in raising awareness of entrepreneurship as a viable

career path and motivating student entrepreneurs to overcome obstacles in initiating or expanding businesses. As entrepreneurship continues to assume a central role in the South African economy, driving job creation and the formation of new enterprises—key drivers of economic growth—there is also an enhancement of the nation's competitive advantage in the global business landscape (Ncube & Lekhanya 2023). However, despite efforts to promote entrepreneurial activities in South Africa, obstacles persist, such as the escalating unemployment rate among graduates and the government's challenges in generating employment opportunities for this demographic.

Given the current challenging environment, there is a clear demand for graduates who possess strong entrepreneurial potential. To address this need, entrepreneurial education is essential, as it cultivates entrepreneurial thinking and contributes to economic development (Ncube and Matlala 2024). By nurturing students' entrepreneurial mindsets and recognizing their unique talents, an entrepreneurial culture can be fostered within the university community.

Based on the findings, the following recommendations are proposed:

- There is a need to cultivate the promotion of entrepreneurship as one of the policy directions to aid in sustaining growth and increase graduate employment through students' exposure to job training.
- Transforming South African higher institutions to be entrepreneurial institutions, by including entrepreneurship studies in the curriculum across faculties. Considerable changes are required in both the content and process of learning offered by institutions of higher education to enable their students to develop entrepreneurial skills.
- Proper intervention programs and activities need to be implemented to enhance entrepreneurial self-efficacy and entrepreneurial interests through the establishment and development of progressive forums between tertiary institutions, the corporate sector and the government. The teaming up of such stakeholders would produce and advance a positive image of entrepreneurship as a possible career for graduates. .
- Establishing a business center at the institutions for higher education could assist students with the commercialization of business ideas, products and services by creating an environment conducive to doing business and reducing business risks.
- Creating centers of entrepreneurship and innovation as well as incubators in the Durban University of Technology. Centers could even extend services by providing short courses to communities and unemployed people in general, targeting rural and township communities.
- Allowing the Durban University of Technology to offer online flexible entrepreneurship programs for which students can enroll whenever they need to be empowered with entrepreneurship skills.
- Again, entrepreneurship education thrives on research development. As such, the establishment of research centers will contribute to achieving the goals of entrepreneurship education.

Implications of the study

The implications of the study are significant for various stakeholders, including educational institutions, policymakers, businesses, and the broader society. Here are some key implications.

Educational institutions: The study highlights the importance of entrepreneurship education in universities and higher education institutions. It emphasizes the need for effective implementation of entrepreneurship programs to cultivate an entrepreneurial mindset among students. Institutions should prioritize the development of entrepreneurial skills and knowledge to better prepare graduates for the dynamic demands of the workforce.

Policymakers: Policymakers can use the findings to inform strategies and initiatives aimed at promoting entrepreneurship and economic development. They may consider allocating resources to support entrepreneurship education, fostering collaborations between academia and industry, and implementing policies that facilitate the creation of a conducive environment for startups and small businesses.

Businesses: Businesses stand to benefit from a pool of graduates who possess entrepreneurial skills and mindset. They can collaborate with educational institutions to offer internships, mentorship programs, and other

opportunities to nurture entrepreneurial talent. Moreover, businesses can support initiatives that promote entrepreneurship and innovation within their communities, contributing to economic growth and job creation.

Society: The study underscores the role of entrepreneurship in addressing socio-economic challenges and driving prosperity. By fostering an entrepreneurial culture and supporting the establishment of new businesses, society can harness the potential of entrepreneurship to create jobs, stimulate innovation, and improve living standards.

Overall, the study suggests that investing in entrepreneurship education and fostering an entrepreneurial ecosystem can have far-reaching benefits for individuals, organizations, and society as a whole. It underscores the importance of collaboration and concerted efforts to cultivate a vibrant entrepreneurial landscape conducive to sustainable economic development.

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