THE IMPACT OF ENTREPRENEURSHIP PROGRAMMES ON STUDENTS' FUTURE CAREER DECISIONS: THE CASE STUDY OF THE DURBAN UNIVERSITY OF TECHNOLOGY

Submitted in fulfilment of the requirements for the degree of Masters of Management Sciences: Business Administration in the Faculty of Management Sciences at the Durban University of Technology

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APPROVED FOR FINAL SUBMISSION

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Date: 28 November 2022

DECLARATION

I, Mthokozisi Nkululeko Mzimela, hereby declare that this research project is the result of my own investigation and findings, except where otherwise stated. It has not been submitted in part or in full for any other qualification or any other tertiary institution. I also further declare that this work does not, in any way, violate or infringe upon the rights of others as all sources quoted or cited by me are indicated and acknowledged by means of a comprehensive list of references.

Student Name…… Date……

Supervisor…… Date……

ACKNOWLEDGEMENTS

First and foremost, I would like to thank the almighty God for giving me the strength and determination to make this work a reality. Furthermore, I would also like to acknowledge and express my gratitude to the following individuals who enabled this huge work to be successfully and timeously completed.

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A very big thanks to my brothers, Mr Scelo, Skhumbuzo, and Mastermind. Your words of motivation and encouragement have contributed to my academic journey. Thank you very much for the enormous support and love you have shown me since the inception of this research project.

My special thanks go to my late grandmother, Mrs B Lushaba, who has been my pillar of strength in all aspects of life.

DEDICATION

It is with great sincerity that I dedicate this dissertation to my beloved late grandmother, for believing in me from day one till her last days on planet Earth and spending all the little she had to ensure that I have this education. She was a very firm believer in continuous improvement. I promise her that her efforts did not go in vain; I shall forever hold up her selfless and courageous doctrines that she instilled in me from a very tender age.

Ngiyabonga Kakhulu Gogo wami!!!

ABSTRACT

Unemployment is a severe scourge that many countries, from both developed and underdeveloped economies, face. Thus, it has a very negative impact on the economy since it increases unemployment rates, poverty, and other social ills. In the South African context, it has been noticed that there seems to be an increasing trend in graduate unemployment and a lack of interest in entrepreneurship careers after graduating.

In a quest for the best solution to this dilemma of graduate unemployment, the government has realised that the only way to revitalise the economy is through the development of entrepreneurship. Therefore, it has made entrepreneurship education a top priority in the institutions of higher learning. This resolution by the government was aimed at facilitating entrepreneurial activities and the cultivation of entrepreneurial talents through tertiary education. It was for this reason that most tertiary institutions introduced entrepreneurship education modules and qualifications in their course offerings.

The primary aim of the study is to investigate the impact of entrepreneurship education on students' future career decisions and also to identify challenges that prevent students from pursuing entrepreneurial activities. In addition, this study aims to find the most effective methods that can mitigate against identified challenges. This study was conducted at the Durban University of Technology (Durban campuses only).

A mixed methods approach was used to conduct this research study. A sample size of 274 respondents was sampled from a population of 932 registered students of the entrepreneurship education module for the academic year of 2017 at the Durban University of Technology – the respondents were selected to participate in the data collection. A further three academic staff members within the department of entrepreneurial studies were also included in this study. The study findings highlighted that entrepreneurship education is instrumental in fostering students' entrepreneurial skills and proclivity towards self-employment. However, certain challenges were identified as the root cause for entrepreneurship education not yielding the much-anticipated results. The study highlighted access to start-up capital as a major challenge, since the majority of students do not have a good credit record or collateral, as required by financial institutions. Therefore, the recommendations made in this particular study can be considered a point of reference for improved outcomes.

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ACRONYMS

DUT..... Durban University of Technology

DBE..... Department of Basic Education

DTI ..... Department of Trade and Industry

EE ..... Entrepreneurship Education

IRIC..... Institutional Research and Innovation Committee

SBM ..... Small Business Management

SMME ..... Small, Micro and Medium Enterprises

TEA ..... Total early-stage Entrepreneurial Activity index

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

South Africa's high unemployment rate poses a serious socio-economic and political challenge in the country. It reduces economic prosperity, decreases output, and erodes human capital. These factors and their associated costs call for unemployment reduction, a definite priority for the South African government. South Africa's economy has been experiencing rising unemployment over many years, and especially since the occurrence of the global economic decline from 2008 to 2009 (Maskaeva and Msafiri 2021: 2). There are high employment rates in South Africa, and the country's youth unemployment rate has been measured as being approximately four times that of the sub-Saharan African average (Meyer 2017: 56). Furthermore, according to International Labour Organisation (ILO) statistics, Africa's average youth unemployment rate was expected to be 13.3% between 2015 and 2017, which is slightly higher than the global figure of 12.5%. South Africa, on the other hand, as a country, has a youthful population. The youth unemployment rate in the country was believed to be over 50% (Statistics South Africa [Stats SA] 2020). From a young age, South African youth are trapped in a vicious cycle of poverty, with 43.5% of the population under the age of 17 living in households earning less than the ZAR797 (797 South African rands, or USD$60) monthly median household income (Maskaeva and Msafiri 2021: 2).

Another challenge is that the South African labour demand trends point to a movement towards a high-skilled workforce. This shift has led to the conclusion that South Africa's unemployment problem is structural, in the sense that poorly-educated workers, who comprise the majority of the labour force, are unable to find work since there is no demand for a low-skilled labour force (Oluwajodu *et al.* 2015: 9). In comparing the unemployment levels between the youth and the older members of the labour force on a global scale, the youth have had the highest unemployment rates since the onset of the global financial crisis (Mlatsheni and Ranchhod 2017).

Young South Africans, defined as individuals between the ages of 18 and 35 (Stats SA 2018), have, on the other hand, improved their educational attainment over the past decade. The rising enrolment rate at tertiary educational institutions reflects this trend. While South Africa has a large youth population that can actively contribute to the economy, young individuals are more likely to be unemployed in the current economic climate due to a lack of necessary skills, work-related capacities, and experience (Barnard 2012; Bhorat *et al.* 2016).

According to De Lannoy, Graham and Leibbrandt (2018: 21), this is known as the skills mismatch thesis, and it is the main contributing factor to unemployment and graduate unemployment in South Africa. The rise in the number of people who are economically inactive can be attributed to a decline in the number of jobs created by South Africa's economy. Looking at the economically-productive population of South Africa during the past 7 years (2012–2019), it has only increased by 18% year on year (Stats SA 2017; Stats SA 2020). South Africa is one of the countries with the highest rates of unemployment. In 2018, it recorded a staggering 52.9% youth unemployment rate, up from 41.8% recorded in 2014.

However, in the first quarter of 2019, statistics revealed that youth aged between 15 and 24 were the most vulnerable, with a 55.2% unemployment rate. Nevertheless, as compared to people with low education levels, the unemployment rate among graduate students is lower. This suggests that education is a source of concern for South Africa's rising youth unemployment rates (Bhorat *et al.* 2016).

Youth contribute only 10% to South Africa's total early-stage entrepreneurial activity (TEA) index, which now stands at 8.9%. The TEA index for women is significantly lower than that for men. As a consequence, there is almost no doubt that promoting entrepreneurship among young people will have a positive impact, not only on the social plane, by creating equality, but also on the economic plane (Department of Trade and Industry 2013–2023). Entrepreneurship has played a vital role in economic success and social stability in most industrialised countries, as observed by Adusei (2016: 202). Moreover, South Africa did not escape the effects of the global economic downturn that started in 2008. Mlatsheni and Ranchhod (2017) highlighted that the country lost close to one million jobs during the recession.

Entrepreneurship has proven to be instrumental in economic growth; as a result, the South African government has made the choice to prioritise the development and support of small- and medium-sized businesses (Morris and Liguori 2016: 201). Despite the fact that the South African government has taken initiatives to foster entrepreneurship, it remains one of the least entrepreneurial emerging economies on the Global Entrepreneurship Monitor (GEM). While most South African universities offer entrepreneurship as part of the curriculum, there appears to be little improvement with respect to seeing practical entrepreneurial growth amongst such students who have pursued these courses (Fayolle and Gailly 2015: 80).

Entrepreneurship has proven to be instrumental in economic growth, and demand has fuelled the rapid expansion of entrepreneurship education. However, this demand has been a disadvantage, because it has outpaced people's understanding of the most effective entrepreneurship pedagogies in terms of knowing what to teach, how to teach

it, and how best to measure entrepreneurial learning outcomes (Morris and Liguori 2016: 201).

The South African youth educational level has improved over the years, and there has been an upswing in the number that have entered the tertiary education system and graduated. The frightening reflection is that as the graduate labour force increases, a large number of these graduates are finding it challenging to find employment simply because the formal South African labour market cannot absorb them (Karanga 2011; De Lannoy *et al.* 2018). New microeconomic research studies from the early 2000s have warned that the labour market rewards for Higher Education (HE) in South Africa might be declining. Between 1995 and 2005, there was a significant increase in the graduate unemployment rate as well as mismatches in the level of emerging skills. When one looks at the skills that these graduates have and what the employers in the labour market demand, there is a mismatch in terms of skill demand and skill supply (Bhorat *et al.* 2016).

From a historical perspective, the dilemma of graduate unemployment has been growing rapidly since 1995, along with the national unemployment rate. In 1995, there were very few individuals with tertiary qualifications, and those who graduated with tertiary qualifications accounted for only 3% of the projected 7.5 million unemployed people in South Africa, using the broad definition of unemployment, which includes those people who have given up looking for a job (Lebusa 2011: 53) and those who are looking for employment without any success in securing one (Meyer 2017: 56). In earlier years, graduates with diplomas from universities of technology were able to gain employment fairly easily, often within a reasonable timeframe after graduation. Regardless of the fact that graduates with a university degree scored significantly better in terms of employment, South Africans are seeing an increasing number of these graduates join the unemployment queue (Lebusa 2011; Grivokostopoulou, Kovas and Perikos 2019).

Hence, a case must be made for entrepreneurship as an alternative to formal employment. A well-rounded education combined with early exposure to entrepreneurship might inspire children and young adults to think and conduct themselves more entrepreneurially and eventually explore business ownership as a career option (Barnard 2012; Meyer 2017). According to Radipere (2012), Kamanovich and Foss (2017), and Bell (2020), in South Africa, entrepreneurship is a new and developing academic area, and there is a growing demand for in-depth expertise in this field. Although many studies have been conducted to develop learning programmes at a tertiary and high-school level, much more research is needed to create the most effective courses and syllabuses at the institutions of higher learning (Fayolle and Gailly 2015: 80).

One may observe that tertiary institutions have not been able to effectively inculcate the attitude and culture of ingenuity amongst its entrepreneurship students. Universities are, however, currently spending considerable amounts of money to develop the most

practical and fruitful entrepreneurship education programmes for their students (Turke and Selecuk 2009: 142; Neck and Corbett 2018: 10). Tertiary entrepreneurship education has the ability to enable a variety of potential entrepreneurial outcomes, such as better venture creation abilities and attitudes, graduate business start-ups, and overall employment creation (Nabi *et al.* 2017: 278).

According to Keat, Selvarajah and Meyer (2011: 206) and Nchu (2016), to attain this goal, entrepreneurship education curricula should be constructed in unique, original, and imaginative ways that, above all, connect academic learning to real-world scenarios; and institutions should use these curricula to teach entrepreneurship education (Dhliwayo 2008; Grivokostopoulou, Kovas and Perikos 2019). According to Taatila (2010) and Kamovich and Foss (2017), if the overall goal is to increase the number of academically educated entrepreneurs, then the teaching approaches should reflect this. According to Barnard (2012), entrepreneurship can be assessed in two ways: actual entrepreneurship (i.e., people who have launched a business) and entrepreneurial intention or latent entrepreneurship (i.e., people who plan to start a business).

Entrepreneurship education has a range of learning outcome objectives, including “narrow” and “broad” perspectives on the subject. The limited meaning is based on the idea that students should be encouraged to start their own business, but the broad definition focuses on developing creative, self-reliant, proactive, inventive, and opportunity-oriented individuals (Kamovich and Foss 2017: 2). This is consistent with the argument by Jones (2019: 8), who stated that enterprise education must not be equated solely with business as it has a broader, deeper, and richer concept.

Ajzen’s theory of planned behaviour advocates for a relationship between the intention to be an entrepreneur and the act of becoming one (Fatoki and Chindonga 2011: 161). Latent entrepreneurs wish to be self-employed in the future and have the possibility of realising self-employment with an adequate course of action. Pihie (2009: 341) noted that intention is the state of mind or attitude that influences entrepreneurial behaviour. In addition, researchers have evaluated the relationship between entrepreneurial intentions and attitude towards entrepreneurship education. Research has revealed that entrepreneurship education courses, along with government support, contribute significantly to the development of entrepreneurial intentions (Jena 2020: 3).

A strong relationship exists between the entrepreneurial intention and the actual behaviour (Fatoki and Chindonga 2011; Jena 2020). Henley (2007: 253) stated that entrepreneurship is an intentional activity in that, for many, those intentions are formed at least 1 year in advance of new venture creation. This suggests that there is a link between entrepreneurship and intention. This study will therefore focus on latent entrepreneurship.

1.2 Research Problems and Aims

1.2.1 Problem Statement

Since the occurrence of the global economic decline from 2008 to 2009, South Africa, like the rest of the world, has faced a constrained economy (Eaton *et al.* 2011; Mlatsheni and Ranchhod 2017). One of South Africa's largest constraints to economic development and growth has been its shortage of entrepreneurs (Gwija, Eke and Lwu 2014: 61). This is consistent with the work of Mbhele (2016: 23) who stated that the South African population does not have a significant number of people who have the aspirations and skills to start entrepreneurial activities. As a consequence, this has led to a decline in the South African economy, since only a limited number of people grow as successful entrepreneurs.

This has mostly affected the youth of the country, given that they form the majority of the unemployed population; included amongst this group are graduates of higher education institutions. In most first-world countries, the backbone of successful economies has been the inception of, and thriving conditions for, entrepreneurship (Mbhele 2016; O'Brien, Cooney and Blenker 2019).

Although the South African government has put a number of strategies in place to create an environment that boosts entrepreneurs and small businesses, the situation remains bleak. The ratio of entrepreneurs to other workers in South Africa is approximately 1:52; this can be compared to the situation in many first-world countries, where the ratio is approximately 1:10. Given that the unemployed population contains many university graduates, it would seem that the South African education system is still largely producing "job seekers" and not "job creators". It is clear that there are insufficient people in South Africa with the necessary training and ability to start new firms (Kgagara 2011; Meyer 2017). Appropriately-structured entrepreneurial educational programmes and courses at higher education and post-schooling institutions may be a route to contributing to the development and self-inclination of graduates towards entrepreneurship (Morris and Liguori 2016). There are still certain issues to be addressed, such as improving the linkages between educational literature theory and learning pedagogies (Neergaard *et al.* 2020: 817).

This exploratory study seeks to examine the entrepreneurship education programme at the Durban University of Technology and its impact on students registered in the Department of Management and Entrepreneurial Studies for a degree or diploma as well as other students taking a course in entrepreneurship education and training. This study, in particular, examines whether the current entrepreneurship programme, as offered to students at the Durban University of Technology, helps to foster entrepreneurial intentions – that is, enhancing the students' future career direction towards self-employment and the chance to start one's own business.

1.2.2 Research Aim

The main objective of this research is to see how entrepreneurship education affects the entrepreneurial intentions of students at the Durban University of Technology. Entrepreneurial intentions, in the context of this study, refer to students' intentions to start their own enterprises after developing skills or being trained in the field of entrepreneurship, and the lack thereof implies that there has been no impact. According to Linan, Rodrigueze-Cohard and Rueda-Cantuche (2011) and Jones (2019), entrepreneurship education has been cited as one of the most important tools for increasing people's entrepreneurial views. As a result, educational initiatives have been viewed as highly promising in terms of improving the supply of potential entrepreneurs (i.e., increasing the number of people who are aware of and interested in this career option) and nascent entrepreneurs (i.e., increasing the number of people who try to start a business).

According to Setiawan (2014) and Kamovich and Foss (2017), many studies have been conducted with a view to developing the most effective methods to encourage tertiary students to be entrepreneurial individuals through entrepreneurship education. Some research has focused on entrepreneurial ambition, assuming that it will motivate students to start their own business, while other studies have focused on entrepreneurial self-efficacy, since it is deemed as a vital prime mover to entrepreneurial intentions. However, entrepreneurial ambition alone is not enough to motivate university students to start their own business. To motivate students to become entrepreneurs, they must have a high degree of risk-taking and self-efficacy. As a result, it may be suggested that where developing entrepreneurial self-efficacy among students is concerned, the ideology of entrepreneurship education should also be incorporated (Setiawan 2014: 2).

According to Kamovich and Foss (2017: 2), the efficacy of entrepreneurship education at higher education institutions has received a great deal of attention, but there is still more that is needed in order to critically analyse the current pool of knowledge when entrepreneurship education at university level is concerned. Furthermore, entrepreneurship academics have been unable to explain whether training methodologies and strategies are matched to the varied desired results, given the diversity and possible complexity of the entrepreneurial learning outcomes that teachers might impact. According to Bell (2020: 1694), a holistic, effective teaching and learning theory must be in line with what teaching intends to impart and accomplish as well as the responsibilities of students and educators in the learning process.

Entrepreneurship education does not ensure entrepreneurial success, but it can help a person recognise and manage the risk of failure that is associated with starting a business (Zhang *et al.* 2019: 150). As a result, it is necessary to shed light on the mechanisms that

have the greatest influence on the youth's personal decisions to start firms after receiving entrepreneurship training, particularly among tertiary students. This perception-based study, supported by secondary data, seeks to examine factors that impact students' entrepreneurial intentions and probe whether entrepreneurship education triggers their intentions to initiate business start-ups.

1.3 Research Objectives and Key Research Questions

1.3.1 Primary Objective

The primary objective of this study is to assess the impact of an entrepreneurship programme or courses on students at the Durban University of Technology to spur them, either immediately or at some future point upon graduation, towards opening their own businesses rather than seeking employment.

1.3.2 Secondary Objectives

In order to achieve the aforementioned primary objective, the following secondary objectives were pursued:

1. To examine the current state of entrepreneurship education at the Durban University of Technology (DUT).
2. To examine the benefits and challenges associated with entrepreneurship education at DUT.
3. To evaluate the perceptions of students at DUT towards entrepreneurship as a career of choice.

The following key research questions were established in order to achieve the above-mentioned objectives:

1. Does DUT's entrepreneurship education programme help develop students' entrepreneurial skills and abilities?
2. Is the current entrepreneurial programme curriculum offered at DUT in need of any change, including its learning methodology?
3. Do the current methods of teaching entrepreneurship education at DUT help trigger business start-ups amongst students?
4. What are the perceptions of students at DUT towards entrepreneurship as a career path, after obtaining the necessary skills and knowledge through the entrepreneurship programme?

1.4 Justification for the Study

South Africa has a high rate of unemployment, particularly amongst the youth and graduates. Some of these students have graduated in the field of entrepreneurship.

Students from DUT who have completed their Diploma in Small Business Management (Entrepreneurship Studies) have opted to be job seekers rather than what their academic programme has intended to encourage them to do, that is, venture out in respect of setting up their own businesses.

According to Ndedi (2014) and Neck and Corbett (2018), to effectively resolve unemployment of youth graduates, conducive strategies are required, especially when the training of potential entrepreneurs through tertiary institutions is concerned. One of the most significant skills of the twenty-first century is entrepreneurship. Furthermore, entrepreneurship may be learned, and students can be taught to construct an entrepreneurial mentality, skills, and competence to some degree, which can ultimately aid the formation of new firms, start-ups, and initiatives, according to a key tenet of entrepreneurship education, taking cognisance of the positive impact that entrepreneurship has at both the economic and social levels. Subsequently, the necessity to formulate effective and coherent frameworks for entrepreneurship education and training programmes arises (Grivokostopoulou, Kovas and Perikos 2019: 2).

Entrepreneurship education is a well-known subject of study in tertiary institutions, with universities having spent considerable amounts of money to develop the most practical and fruitful entrepreneurship educational programmes for their students (Turke and Selecuk 2009: 142). However, as one may observe, tertiary institutions have not been able to satisfactorily inculcate the attitude and culture of ingenuity amongst their students who have taken an entrepreneurial course. The culture of self-reliance amongst students and graduates means that they are able to put the skills acquired at university to use to create self-employment, rather than seeking organisational employment as a career of choice (Bukula 2009; Jones 2019).

Entrepreneurship is often regarded as a significant accelerator for innovation, economic growth, and job creation, according to academics. As a result, if the establishment of small and medium companies (SMMEs) contributes significantly to job creation and income generation, as well as providing job prospects for the growing number of unemployed graduates; it is logical, therefore, from an efficiency standpoint, to ensure the development of SMMEs (Ndedi 2009; Meyer 2017: 56).

Jones (2019: 243) added to this by stating that entrepreneurship education plays a critical role in nurturing entrepreneurial tendencies among young graduates. However, there is no common consensus on the factors that influence an individual’s decision to start a business. Intellectually robust entrepreneurship educational foundations remain a necessity, both at a theoretical and methodological level. There is a dearth of evidence connecting educational theory and philosophy to entrepreneurship education, as has been discovered. There is still no obvious distinction between educational literature and entrepreneurship educational concepts (Neck and Corbett 2018: 10).

According to Baijnath (2015), effectively nurturing entrepreneurship amongst tertiary students requires more than merely teaching them about aspects of how to become entrepreneurs, and the focus should be on instilling the idea that entrepreneurial culture starts much earlier than at the tertiary education level. Therefore, it is critical to note which factors have the greatest impact on a person's decision to establish a business. This study is necessitated by South Africa's current unemployment, poverty, and poor absorption rate of graduates into the South African labour market.

1.5 Conceptual Framework

The conceptual framework for this study is presented as a literature review and is in accordance with the objectives. Figure 1.1 depicts the conceptual framework (review framework) for the study.

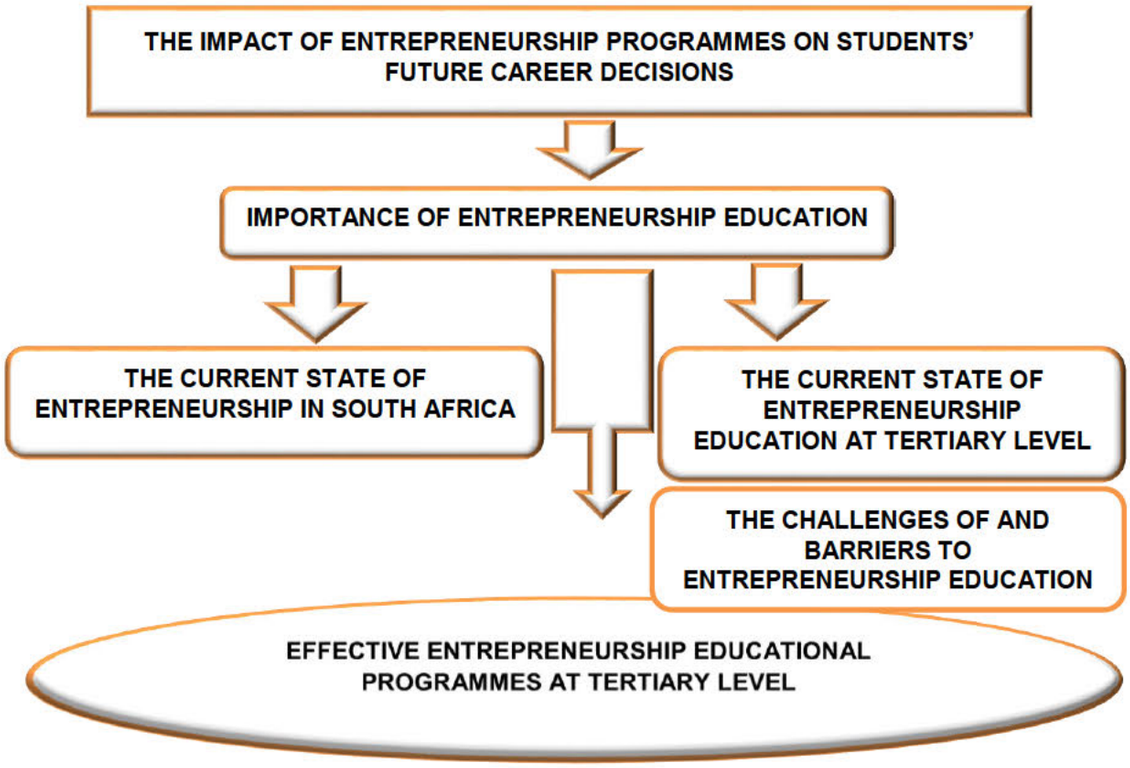

Figure 1.1: Conceptual Framework (Review Framework)

This study explores the role and impact of entrepreneurship education at DUT (Durban campus) and its effect on students' inclination towards entrepreneurship as a career. As a point of departure, this study considers the importance of entrepreneurship education for the South African economy and the current state of entrepreneurship education in South Africa, including at the tertiary level. Attention is further drawn to the challenges of and barriers to entrepreneurship education and, lastly, to effective entrepreneurship educational programmes at the tertiary level. Furthermore, the study also explores the entrepreneurial inclinations of current students and alumni of DUT entrepreneurship programmes and how these programmes have shaped their career choices.

1.6 Research Design

The goal of the study was to evaluate how entrepreneurship education affects students' future decisions at DUT. For this investigation, a mixed methods approach was chosen. It allowed for a more thorough investigation of the influence of entrepreneurship education on the development of an entrepreneurial spirit and drive among DUT students. The collection and use of both qualitative and quantitative data in one study, as well as the integration of these data at various phases of the research process, are all part of a mixed research methodology (Soorkrajh 2014).

1.6.1 Target Population

The target population for this study involved academic professionals from the Department of Management and Entrepreneurial Studies as well as registered DUT students. The targeted student population was drawn from across the five DUT campuses, namely ML Sultan, Ritson Campus, Steve Biko Campus, City Campus and Brickfield Campus, whereas the academic professionals population was drawn from the Department of Entrepreneurial Studies at ML Sultan Campus.

1.6.2 Sample

The sample of this study consisted of three entrepreneurship lecturers, with one of them being a subject coordinator in the Department of Management and Entrepreneurial Studies. In respect of the students, the sample included the third-year students as well as BTech students who had completed their entrepreneurship education. Depending on the faculty, students do entrepreneurship at either the first- or second-year level.

1.6.3 Data Analysis

In this study, qualitative data was analysed using the content analysis method, where the emerging themes from the raw data were grouped and later developed in the discussion section. Quantitative data was analysed using the Statistical Package for the Social Sciences (SPSS), which is in agreement with the literature review. Descriptive statistics, charts, frequencies, and inferential statistics were employed to report the results.

1.7 Delimitations and Limitations of the Study

1.7.1 Delimitations

This research study was limited to only one academic institution of higher learning, namely, DUT (Durban campus), although it addresses a problem faced by a rather large number of higher learning institutions in South Africa. This delimitation was applied due to time and budgetary constraints.

1.7.2 Limitations

This research study was conducted only at DUT (Durban campus).

1.8 Reliability and Validity

The reliability and validity of data collected from a study are an essential requirement. According to Wagner, Kawulich and Garner (2012), reliability and validity are distinct concepts, yet they are intertwined, resulting in some researchers using the terms erroneously. Reliability, according to Punch (2005: 95), is the essential idea in measuring. The extent to which an instrument measures what it claims to measure is referred to as validity. Content validity was considered in this study since the study was interested in evaluating the impact of entrepreneurship education on fostering entrepreneurial intentions amongst students at DUT. The review of responses from the pilot study helped in finalising the instrument of this study in order for it to be valid. In safeguarding the reliability of the findings, questionnaires were circulated to 30 students from the Faculty of Applied Sciences who were interested in the research topic, to ensure that all question items were understood by the pilot sample in the same way. The questionnaire was revised after the pilot testing. The reliability was also affirmed by ensuring the sample size was set to a minimum of 274, large enough for reliable data.

1.9 Ethical Considerations

May (2011: 61) claimed that ethics is an endeavour to develop standards and principles for researchers' moral behaviour. The Faculty Research Committee (FRC) and the Institutional Research Ethics Committee (IREC) at DUT (Faculty of Management Sciences) approved the study after a rigorous process to ensure that it had met the committees' requirements. According to Oliver (2003: 87), various academics have alluded to the significance of treating research participants with respect, care, and sensitivity. Respondents were informed of all terms and conditions relating to the completion of questionnaires, in line with this viewpoint. Except when otherwise noted, the researcher confirmed that these research results/findings were for his own independent work. Additional sources are credited with specific citations. The information and content letter made it clear to respondents that the information obtained was confidential.

1.10 Structure of Dissertation/Thesis

Chapter 1 presents an overview of South Africa's constraints to economic development and growth: high unemployment rates, particularly amongst youth graduates; entrepreneurship education; and the shortage of entrepreneurs. The nature of the research problem, rationale of the study, research objectives, and specific research questions are also covered.

Chapter 2 covers the literature reviewed. The review examines the current state of entrepreneurship education at tertiary level and of entrepreneurship in South Africa. The challenges of and barriers to entrepreneurship education are also presented. Effective entrepreneurship educational programmes at tertiary level are also discussed in the review.

Chapter 3 covers the research methodology. Details include the target population and sampling method employed in this study. In addition, data collection procedures, data analysis, and lastly, reliability and validity, are outlined.

Chapter 4 presents the results from the data collected. It includes the qualitative study undertaken with the academics in the Department. These results are presented in the form of frequency tables and bar graphs.

Chapter 5, the final chapter, presents the discussion, conclusions, and recommendations. Future areas of study arising from this study are also proposed.

1.11 Conclusion

This chapter presents a general overview of the study and covers the aim and justification for the study, its delimitations, and how the data has been treated. The following chapter examines the literature review.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The contemporary economy of most nations is being driven by entrepreneurship and small businesses. The rise of entrepreneurship has significantly shaped the global economy and the business world (Bux 2016; Adusei 2016). Entrepreneurship enhances economic development, and it is regarded as the key factor behind attracting investments to local communities. According to Nchu (2016: 11), there has been an increasing tendency to create educational programmes that encourage and increase entrepreneurial activity amongst young people who are taking up post-schooling studies. Furthermore, higher education must include both the development of a favourable attitude towards business and the development of core skills. This would aid future labour market entrants in their ability to grow and strengthen business formation.

To successfully address unemployment among youth graduates, a new approach must be devised expressly for the tertiary-institution-based training of potential entrepreneurs (Ndedi 2009; Nchu 2016). Therefore, this necessitates a solid intellectual framework for entrepreneurial education. This foundation should be strong at both the theoretical and methodological levels (Bell 2020: 987).

Barnard (2012:89) observed that in order to unleash the economic potential of all South Africans, particularly young people and graduates, the culture of entrepreneurship and innovation must be encouraged. In order to fit into South Africa's current economic system, the youth will need to be schooled and educated in the field of entrepreneurship. This is in line with the study by Tengeh, Iwu and Nchu (2015: 115) who stated that graduates need to be equipped with entrepreneurial skills that will enable them to engage in self-employment activities successfully, regardless of their academic background or areas of specialisation. As a consequence, a major outlook shift from the "take-a-job mentality" to the "create-a-job mentality" can be achieved. Rather than seeking wage work, young people must be allowed to see self-employment as a path to self-empowerment. However, a broader understanding of entrepreneurship attitudes and perceptions in South Africa will enable stakeholders to evaluate, reinforce, and reconfigure strategies in order to improve entrepreneurial behaviour in the country and contribute to economic development (Nchu 2016; Zondo 2016).

This chapter reviews the literature on entrepreneurship, with emphasis on understanding entrepreneurship and entrepreneurship education and the current state of entrepreneurship in South Africa, and it further explores the state of entrepreneurship

education at the tertiary level. This is followed by a discussion on the challenges of entrepreneurship education, and models of entrepreneurship education are highlighted.

2.2 Conceptual Framework

The conceptual framework for this particular study is presented as a summary of the literature and is in line with the set objectives, as depicted in Figure 2.1.

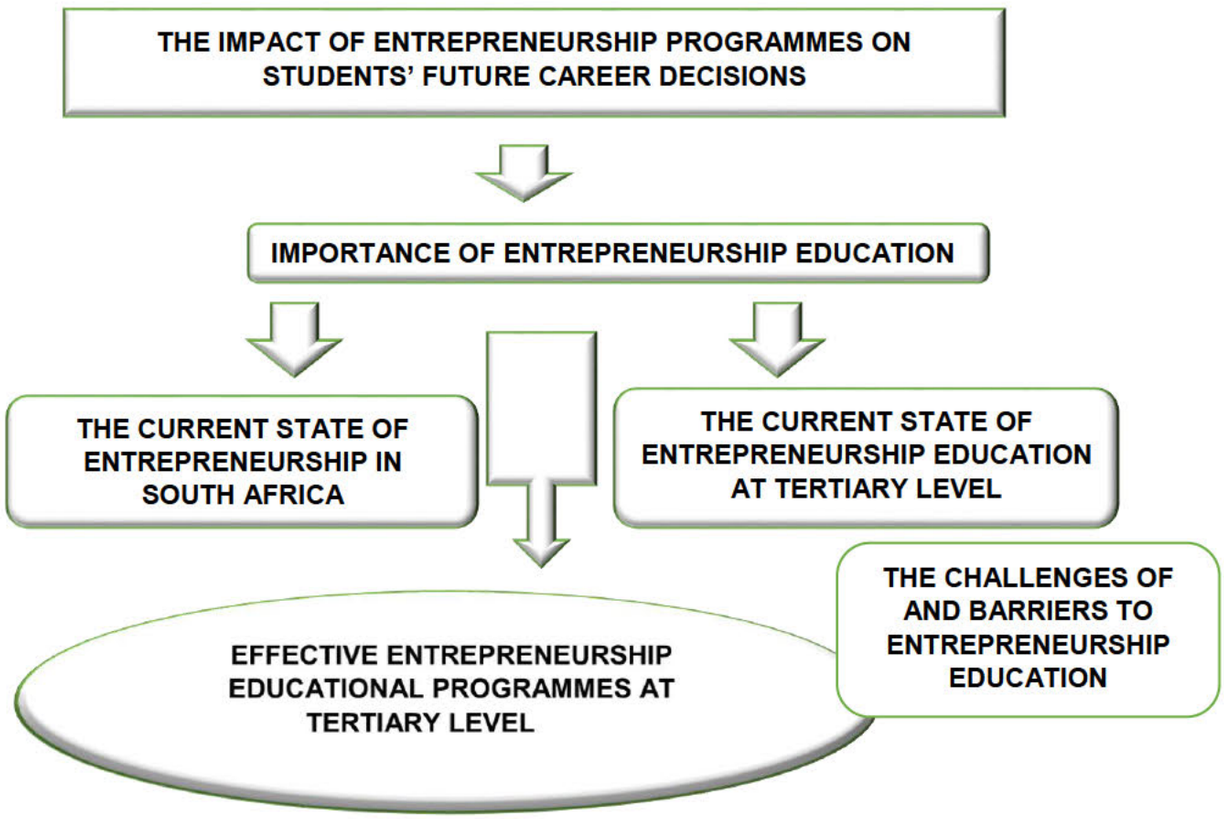

Figure 2.1: Conceptual Framework

2.3 Entrepreneurship and the Importance of Entrepreneurship Education

Entrepreneurship is a process of envisioning, organising, introduction through invention and innovation, and developing a business opportunity into a prospective high-growth business enterprise in a difficult, unsteady environment (Kariv 2011). This leads to the discernment of at least four fundamental components:

- Firstly, it entails a process that is, therefore, manageable;
- secondly, it creates value in businesses and markets where it did not previously exist;
- thirdly, it necessitates assets that are uniquely combined to create value; and
- finally, it is the outcome of recognising an opportunity (Visser, Friedrich and Brijlal 2007: 613).

The conveyance of entrepreneurship is dependent on three factors, that is, creativity, risk-taking, and proactiveness (Morris and Kuratko 2015: 101). In existing research, numerous definitions of entrepreneurship have been proposed, but there is no commonly accepted definition. Entrepreneurship is defined by some academics as the process of creating something new in a certain setting (Kuratko 2009; Urban 2016; Bux and Van Vuuren 2019). Entrepreneurship may also be described as the process through which individuals and/or groups create value by combining unique bundles of assets or efforts to capitalise on market possibilities (Kuratko 2016: 419).

Bux (2016), Sharma (2017), and Fedri (2017) described entrepreneurship as the process of creating something new, a new economic entity centred on a novel product or service, or, at the very least, one that is distinct from other products or services on the market.

According to some studies, entrepreneurship is the process of creating and seizing an opportunity with available resources. For example, entrepreneurship has been characterised as a creative act in which the production is founded on recognising opportunities and risks, and the entrepreneurial process' outcome is increased value to the individual, community, and society at large (Renko and Shrader 2012: 1233).

Entrepreneurship is often defined as more than merely starting a firm or becoming self-employed. For example, entrepreneurship is defined by the ILO as "a mode of reasoning and behaving" (Margolis 2014:419). This mind-set goes beyond merely transforming a business idea into an operational enterprise. It is a process where the person becomes aware of self-employment as another career possibility, creates ideas, manages and takes calculated risks, and takes the initiative to develop and own a business (Wood and Williams 2015: 218-236). Entrepreneurship has been an important research field among scholars for some time. The increased interest in the field of entrepreneurship is driven by several factors: it is a way of stimulating declined economies, revitalising emerging economies, and dealing with unemployment problems by creating new job opportunities, amongst others (Department of Trade and Industry 2013–2023).

In emerging economies, such as South Africa, entrepreneurship is seen as a locomotive of economic development, job creation, and social change (Grivokostopoulou, Kovas and Perikos 2019: 17). According to Adusei (2016: 201), entrepreneurship has historically been recognised as a key catalyst in the evolution of all economies, and it is often regarded as the driving force behind rapid economic growth and creating employment opportunities. Entrepreneurship and economic development have a positive relationship (Nchu 2016: 22). Despite this, more research has revealed the bureaucratic impediments, inefficiencies, and costs that come with administrative rules and regulations that have a significant impact on entrepreneurial intentions in South Africa (Mbhele 2016: 48). Governments, both domestically and internationally, have recognised the value of

entrepreneurial education (knowledge and skills) in schools, colleges, and universities as tools for developing an innovative and enterprising citizenry (Jena 2020).

According to Fatoki and Oni (2014) and Meyer (2017), higher learning institutions are very effective platforms that can be used to foster entrepreneurial mind-sets amongst the youth through inculcating relevant skills and knowledge on the subject of calculated risks and the rewards of entrepreneurial ventures, opportunity identification and recognition skills, and forming and growing entrepreneurial ventures. Furthermore, the curricula in the institutions of higher learning should incorporate skills that can be taught and learned. These skills include innovation and creativity, the ability to take calculated risks, the large need for independence, negotiations and persuasiveness, tolerance of uncertainty and ambiguity, motivation and self-confidence, the great need for achievement, an internal locus of control, and so forth. In addition, it is critical for higher education institutions (HEIs) to not only create a conducive atmosphere for their students to learn about entrepreneurship, but also to be knowledgeable in the types of skills and competencies that they want to impart to students and to deliver excellent training programmes that will help in creating future entrepreneurs with exceptional business and managerial skills (Musetsho and Lethoko 2017: 78).

Nieuwenhuizen *et al.* (2016: 528) pointed out that in South Africa, entrepreneurship education is offered at many HEIs at the diploma or degree level. These courses are offered within Master of Business Administration (MBA) courses in the centres for innovation and entrepreneurship (where they exist) at South African universities and other such similar centres to promote entrepreneurial development.

According to Nabi *et al.* (2017: 277), there is a universal recognition that entrepreneurship is the apparatus that accelerates the growth of the economy for many nations. In recent years, entrepreneurship has been a top priority for governments and policymakers internationally as the only solution to revitalise their economies after the global financial crisis. President Barack Obama, for example, signed the “Jumpstart Our Business Start-ups Act” (JOBS Act) in April 2012, which was targeted at stimulating new business start-ups in America by reducing bureaucratic issues such as microfinance programmes, disclosure, and registration requirements. Similarly, the European Commission announced its “Entrepreneurship 2020 Action Plan”, which aims to boost Europe’s entrepreneurial potential by building an enabling business environment, removing existing barriers, and revolutionising the entrepreneurship culture in Europe (Smith *et al.* 2014; Jones and Iredale 2016). Tertiary institution graduates are one of the most vital parts of the young workforce, and their progression into the labour market is among the key concerns of governments, policymakers and HEIs (Nurye 2017: 3).

According to Naong (2019: 226), entrepreneurship is globally considered as the only solution to overcoming economic instability and creating self-employment opportunities

amongst graduates, since many young people across the globe are struggling to gain access to the formal labour market during and after graduation. Entrepreneurship education and its capacity to enable business start-ups and management help to solve the challenge faced by young people.

After a series of trial programmes dating back to the early 2000s, the Chinese Ministry of Teaching (MOE) initiative, in partnership with the Chinese Communist Youth League, made an effort in 2009 to roll out entrepreneurship education at universities. Internationally, similar patterns have emerged. To begin with, they have encouraged entrepreneurship in general, as evidenced by the recognition of the critical role that entrepreneurship can play in job creation, innovation, and the competitiveness of a country. Subsequently, the increased need for assistance with labour market difficulties is driving the support of graduate entrepreneurship. Many tertiary institutions in South Africa have used a variety of methods to educate, inspire, and support more university students to consider entrepreneurship as a career option, ranging from incorporating entrepreneurship education into the curriculum to providing mentoring services and seed corn funding (Nchu 2016; Nurye 2017).

2.3.1 Entrepreneurship and Entrepreneurship Education in a South African Context

Unemployment among young people is becoming a worldwide issue. Unemployed youth protests have grabbed news headlines in the United Kingdom (Apps 2011), Spain (Kane 2013), the Eurozone (Robertson 2013), and South Africa (Robertson 2013) in recent years (Meyer 2017). In response to the unemployment challenge, policymakers have encouraged school leavers to start entrepreneurial ventures and embark on self-employment (Tengeh *et al.* 2015). Given the global decline in employment prospects, such a policy approach appears to be a logical and well-justified argument. As a result, the South African government is among those that see increased youth entrepreneurship as a development necessity (Republic of South Africa 2012; Tengeh *et al. 2*015).

As a result, many small-business agencies have been established, including the National Youth Development Agency (NYDA) and the Small Enterprise Development Agency (SEDA), as part of South Africa's National Development Plan (NDP), which aims to convert the country into an entrepreneurial society; the South African government expects a partnership between these organisations and educational institutions (Republic of South Africa 2012). This idea involves partnering together to provide support and infrastructure (such as lending facilities and incubator services) to aspiring entrepreneurs (Republic of South Africa 2012; UNDP 2007).

The GEM (2017) and Maskaeva and Msafiri (2021) acknowledged that among rising economies, South Africa boasts one of the greatest entrepreneurship support systems.

Nevertheless, by worldwide and regional standards, South African youth entrepreneurship remains very low (GEM 2017; Bakar *et al.* 2017). The attitudes of graduates towards entrepreneurship appears to be a major factor. According to the GEM (2017), there is a general lack of enthusiasm among young people for starting new businesses (NVSUs). Given the critical role of youth entrepreneurship in achieving development goals and reducing rising unemployment rates, the lack of interest among university graduates in participating in economic ventures is fast becoming a significant socio-economic problem (Lennox 2013; Republic of South Africa 2012). As a result, entrepreneurship accelerates the growth of every nation's economy in the present (Jones and Iredale 2016).

Entrepreneurship is gradually becoming a crucial prerequisite for success in an ever more globalised and competitive economy and needs to be entrenched into the basic fabric of society as well as the institutions of higher learning (Leshilo and Lethoko 2017: 45). Every aspect of universities of technology, thus, must strive to encourage the entrepreneurial spirit observed (Tengeh *et al.* 2015). Furthermore, an entrepreneur's skill in starting and operating a business is very much linked with business-related experience and education (Shambane 2013; Neck and Corbett 2018).

Therefore, for the development and success of small businesses, training programmes that impart entrepreneurial expertise are essential. In emerging countries with limited resources, unconducive government policies, and high entry barriers imposed by dominating major enterprises, training programmes for aspiring entrepreneurs are desperately needed. It has been discovered that the youth's educational level can have a positive impact on their entrepreneurial inclination, particularly within the current knowledge environment (Sadeghi *et al.* 2013; Neck and Corbett 2018). Leshilo and Lethoko (2017: 48) maintained that the lack of entrepreneurial skills in emerging countries is the cause of the stagnation, and that formal education is "unashamedly" leaning towards training students for professions in the private and public sectors instead of training them for entrepreneurial activity and the start-up of new businesses. Many companies, both formal and informal, are currently unable to accommodate the rising number of job applicants, particularly graduate students (Maskaeve and Msafri 2021: 92).

According to Musetho and Lethoko (2017: 75), the low overall early-stage entrepreneurial activity in South Africa (TEA levels) is the root cause for entrepreneurship graduates, who are meant to be creating jobs, to instead choose to work in the official labour market. This is, undeniably, a misalignment of goals, since employment is not the objective or the output of entrepreneurship education (Shepherd 2008; Jones and Iredale 2016; Sharma 2016). Nabi *et al.* (2017: 277) asserted that entrepreneurship educational programmes offered at tertiary institutions are meant to develop or enhance students' venture creation abilities, knowledge, and entrepreneurial attitudes. The anticipation is that they will result

in an increased number of graduate business start-ups and job creation, eventually contributing to economic growth and development.

According to Jena (2020: 2), the goal of the entrepreneurship doctrine was to assist entrepreneurs in understanding the implications of their decisions, which can be accomplished through education. Moreover, the correlation between entrepreneurial aspirations and entrepreneurship education mind-sets was investigated by the researchers. According to their findings, government assistance and entrepreneurial educational courses help to develop entrepreneurial intentions. The economic climate requires skilled labour urgently, and this high unemployment rate, which is primarily among graduates, is unnecessary (Fatoki 2014; Meyer 2017).

If South Africa can increase the educational levels of its people, then more people, especially the youth, will participate in sustainable entrepreneurial ventures, which should have a favourable bearing on the social ills currently being experienced (Malebana and Swanepoel 2014: 1). This seems easy, but the solutions are not, since improving the educational level does not happen overnight; it has the longest lead-time in terms of attaining the required results. Therefore, much more must be done to facilitate the advancement of educational levels in an enhanced manner that does not comprise the quality of education delivered in the process (Herrington 2008; Bell 2020). According to Naong (2019: 266), HEIs are finding it difficult to balance the three roles assigned to them, namely, teaching, research, and service. The researcher put forward that there ought to be an academic dialogue on the matter that is realistic rather than idealistic.

According to Maresch *et al.* (2016), researchers are of the opinion that entrepreneurship education is based on the realisation that successful entrepreneurship is positively affected by the personalities, skills, and competences of the business owner. They put forward that these skills, dispositions, and competences can be fashioned through education.

Entrepreneurship represents the missing link between investment in new knowledge and economic progress, acting as a conduit for both entirely new knowledge and knowledge spill overs (Vivarelli 2012; Adusei 2016). According to Sadeghi *et al.* (2013: 361), universities and institutions of higher learning can play a crucial part in the development of entrepreneurship and create an enabling environment for promoting entrepreneurship. In addition, they can institutionalise entrepreneurial culture amongst students as well as the society at large. Institutions of higher learning are able to accomplish this great undertaking by putting into operation different techniques, including fostering the entrepreneurial culture, undertaking scientific research, implementing training courses, and starting centres that service entrepreneurship. They can also help students develop business acumen and provide the necessary support for entrepreneurs as well as give their ventures credibility (Grivokostopoulou, Kovas and Perikos 2019: 5623). Introducing

entrepreneurship as a concept in higher education can have an impact on students' perceptions of entrepreneurship as well as their understanding of different alternatives for employment (Kubberød and Pettersen 2017: 265).

According to Van de Sluis, Van Praag and Vijverberg (2007: 231), an added year of education increases entrepreneurial income by an average of 5.5%. This study found that formal entrepreneurship training had a significant bearing on a company's growth success, as assessed by sales and employment growth rates. Entrepreneurship education can help an entrepreneur's profitability, entrepreneurial spirit, entrepreneurial outlooks, and productivity. According to Jena (2020: 265), entrepreneurship education is a way for nations to ensure rapid economic growth and a progressive environment. According to Zhang *et al.* (2019: 150), entrepreneurship education does not guarantee success, but it can help people fully understand and manage the risk of failure that comes with starting a business. This is in line with statements by Vivarelli (2012: 44), who stated that entrepreneurs with a university diploma have the highest impact on growth.

Entrepreneurship education serves as a key catalyst in creating entrepreneurial attitudes among the youth and further emphasises that stimulating entrepreneurial skills and attitudes is beneficial to society; this goes beyond their use to create new business ventures (Steenekamp 2013; Jena 2020). In comparison to their peers in other nations, South African youths aged 14 to 35 are less likely to start their own businesses (Naong 2019: 266). Despite the fact that entrepreneurship can have a favourable impact on economic growth and development, it is of importance that institutions of higher learning should make an effort to increase the number of entrepreneurs through entrepreneurship programmes offered at their respective institutions.

2.3.2 Entrepreneurship as a Solution to Unemployment

According to the ILO, in 2016, the total global unemployment stood at 197.1 million, higher than the pre-crisis level of 2007. The same report revealed its findings relating to young people: "after many years of improvement, youth unemployment is set to rise in 2016 and young people are disproportionately affected by working poverty and if you are a young woman your chances of finding a quality job are even less likely" (ILO 2016: 63). In addition, figures from the first quarter of 2018 released by Statistics South Africa (Stats SA) indicated that the unemployment rate among young people aged from 15 to 34 was 38.2%, indicating that more than one in every three young persons in the labour force did not have a job (Stats SA 2018: 7).

According to the Department of Labour's Annual Labour Market Bulletin, the economically active population increased by 18% between 2012 and 2019 (Stats SA 2017; Stats SA 2020). Many of these young people who have lost hope of finding work are not developing their skills through education and training (NEET, i.e., Not in

Education, Employment, or Training; Stats SA 2018). In relation to economic success and job security, entrepreneurship has played a major role (Meyer 2017; Naong 2019).

South Africa is a developing country that is currently faced with the challenge of high youth unemployment levels, particularly among university graduates, due to the absence of work experience, a low skills base, and education. The South African labour market is presently full and unable to take in the constantly growing number of new entrants into the labour market (Maskaeva and Msafiri 2021: 57). South Africa is one of the countries in the world with the highest unemployment rate. In 2018, the country recorded 52.9% of youth unemployment, which was a significant increase from 41.8%, as recorded in 2014. The most-affected by this unemployment scourge are the youth; in the first quarter of 2019, young people aged 15 to 24 had a staggering unemployment rate of approximately 55.2% (Stats SA 2019). Entrepreneurship could possibly be a panacea for the deteriorating economic activity and rising youth and adult unemployment. The transformation is a process through which new businesses are formed to sustain everybody in their daily lives at home and in society, at the household and community levels (Musetho and Lethoko 2017: 74).

The government has made a decision to make the development and support of small and medium enterprises a top priority (Moos and Samboo 2018: 467). Even though the South African government has carried out interventions to advance entrepreneurial activity within the country, it remains among the lowest of all emerging countries partaking in the GEM (Malebana 2017: 1). According to Meyer (2017) and Moos and Samboo (2018), activities that include the start-up phase are critical, and many entrepreneurship programmes in South Africa lack these. The country's entrepreneurial capacity is assessed by how successfully it trains people to start their own enterprises and create jobs for themselves and others.

Therefore, there is no doubt that education is important, and entrepreneurship education may help to foster a culture of entrepreneurship in South Africa and across the continent. In order to attain a higher quality of life for all, South Africa, as a nation, needs to channel and enhance the entrepreneurial drive and skills of all citizens to ensure that South Africa's economic growth reaches its optimum potential (Chimucheka 2014: 2039). According to Tengeh *et al.* (2015), increasing entrepreneurship education at all educational levels and for all citizens will help South Africa achieve its goals of economic development, job creation, and increased TEA. Hirsch maintained that entrepreneurship education is essential in the development of business skills. A number of academics in the economics field have drawn attention to the development of SMME owners' and managers' skills and talents, as this is critical for increasing competitiveness and SMME growth as well as the expansion of the country's wealth. As a result, this entails expanding the SMME sector through education and training (Chimucheka 2014: 2039).

2.4 Higher Education Institutions and their Role in Facilitating Entrepreneurship and Entrepreneurship Education

Tertiary institutions in South Africa contribute to the country's economic structure by serving as a resource pool for large enterprises. The importance of student participation in economic development cannot be overlooked (Brijlal 2011; Singh, Paul and Tewari 2021). Higher education, particularly at universities of technology (UoT), is considered a custodian of knowledge in the community and plays a very important role in economic development. There has been increasing acknowledgement of the crucial role that higher education plays in nurturing development in the context of knowledge, the economy, and the development of entrepreneurship universities. Of utmost importance to this concept is the production of applied and basic research, particularly in association with the communities or industries in the conveyance of new skills to communities or businesses for commercial purposes (Bester 2015: 3).

According to Zhang *et al.* (2019: 150), universities have a critical role in industrial entrepreneurship, and the local government must recognise this. Universities can serve as sources of unique technologies by facilitating the spread of innovation and teaching aspiring entrepreneurs. The majority of empirical studies have pointed out that people can be taught to be entrepreneurs and that entrepreneurs can be transformed and improved by learning and practising specific behaviours (Ndedi 2014: 467). Human beings have entrepreneurial behaviours, qualities, and expertise, according to Wilson and Mador (2010: 30), which may be nurtured through learning, and, in this context, entrepreneurship education is the way to attain those combined efforts.

This is in line with Noang's (2019: 266) assertions that the relevant educational methodology for entrepreneurship is more likely to improve students' entrepreneurial orientation. According to Chimucheka (2014: 2039), some scholars in the domain of entrepreneurship believe that, as with any other academic subject, entrepreneurship can be learned. This view is in line with that of prominent management thinkers such as Peter Drucker (1985), who stated that entrepreneurship is not magical and that it is in no manner concerned with a person's hereditary factors or genes. Entrepreneurship can be incorporated into the curriculum, showing the importance of entrepreneurship education in overcoming South Africa's extremely poor entrepreneurial activity and unemployment, which are contributing factors to low economic growth (Bux 2017: 21).

The Consortium of Entrepreneurship Education (2015) has mentioned that it is through productive entrepreneurship education that students can learn the skills and knowledge necessary to start and grow an entrepreneurial venture (Schmidt and Molkentin 2015: 157). According to Neck and Corbett (2018: 41), entrepreneurial education covers a broad spectrum of management disciplines as well as a variety of delivery strategies. Moreover, teaching is both a science and an art. Likewise, theoretical and practical aspects of

teaching, as well as information about training in a certain subject, are defined as education (Oxford Dictionary 2018: 85).

According to Sadeghi *et al.* (2013) and Naong (2019), universities and other institutions of higher learning may play a critical role in the development of entrepreneurship and in creating an atmosphere conducive to its growth. They can also help to institutionalise entrepreneurial culture among students and the general public. Institutions of higher learning may fulfil this monumental task by employing a variety of strategies, including cultivating an entrepreneurial culture, conducting scientific research, providing training courses, and establishing entrepreneurship service centres. A setting that enables the development of entrepreneurship within universities of technology will be a locomotive responsible for innovation, risk-taking, and proactivity. Furthermore, an entrepreneurial environment in these institutions and the society at large will allow students to pursue opportunities without worrying about the limited resources that they would then have at their disposal (Barnard 2012; Mbhele 2016: 30).

According to Onguntimehin (2018: 290), the primary objective of incorporating entrepreneurship courses into universities is to facilitate the process of graduates gaining a better understanding of entrepreneurship, equipping them with an entrepreneurial mindset when they enter the workforce and preparing them to act as entrepreneurs and managers of new enterprises.

According to Bester (2015: 5), in order to optimise the economic potential of all South Africans, especially the youth and youth graduates, the culture of entrepreneurship must be encouraged. The youth will have to be trained and educated in the field of entrepreneurship in order to be accommodated in South Africa's current economic condition; instead of seeking waged employment, young people should consider self-employment as a path to self-empowerment. However, a better understanding of the attitudes to and perceptions of entrepreneurship enables role players to assess, reinforce, and alter strategies in order to improve entrepreneurial behaviours in South Africa, contributing to economic growth and wealth creation for all, and promoting poverty reduction (Noang 2019: 225).

According to Hameed and Irfan (2019: 135), the intended goal for an entrepreneurship programme is to produce entrepreneurs, not job seekers. The programme should be supported by the three empirical pillars of industry, academia, and government policy, and funding should be raised to support these partnerships. Schools have a significant role to play in the lives of learners by instilling "appropriate academic, business and positive life-long skills" (Meyer 2017: 245). Furthermore, speaking at the 2017 Global Entrepreneurship Congress (GEC), the then Deputy President the Honourable Cyril Ramaphosa suggested that there was much more to be done in the present situation. He was referring to the high unemployment rate in the country, particularly amongst the youth

graduates. He suggested that entrepreneurship must be part of the school curriculum; this inclusion, as a consequence, will ensure that more students become job creators and consider starting a business as a potential career choice.

In agreement with this view, Nurye (2017: 22) stated that the government needs to act in order to boost the formation of a much more favourable business culture. This will notably motivate entrepreneurs to grow their operations. Policymakers may implement a number of methods to encourage the creation of a desirable business culture. For example, the government should encourage self-employment by improving the socio-economic status of entrepreneurs through financial rewards, incentives, and the like.

According to Naong (2019: 225), the performance of entrepreneurship seems to be on the rise, and most academics now speak about the “entrepreneurial economy”. Notably, the vitally important role of universities and other HEIs in this novel economic model has been emphasised. In this context, the focal point of contemporary research has been on university graduates moving towards entrepreneurship. There is a debate concerning accepting the definition of graduate entrepreneurship in general; this refers to the interaction between the former student (as the product of university education) and entrepreneurship (in terms of a person’s career motivation, behaviour, and mindset towards a new venture formation). The primary objective of incorporating entrepreneurship courses into universities is to facilitate the process of graduates gaining a better understanding of entrepreneurship, equipping them with an entrepreneurial mind-set when they enter the workforce and preparing them to act as entrepreneurs and managers of new enterprises (Bux 2016: 15).

For this to be fruitful, it calls for schools, colleges, universities, and all other education and training agencies in South Africa to develop the most effective entrepreneurship development programmes. This will foster entrepreneurial mind-sets among the youth, in the sense that they will consider and explore entrepreneurship as a possible career path in times when there are shortages of jobs (Department of Trade and Industry 2013–2023). According to Baijnath (2015: 1), in order to improve an entrepreneurial culture in institutions of higher learning, full-bodied leadership and good governance are fundamental factors to consider. Entrepreneurship should be entrenched in the strategy and not only included in the mission statement: “it needs to find demonstrable expression in action”.

2.5 Concept of Entrepreneurship Education

According to Radipere (2012: 11015), entrepreneurship and entrepreneurship education are two terms that are often used interchangeably. Given the lack of agreement on the concept of entrepreneurship, there is confusion on the subject of entrepreneurship. However, entrepreneurial education is an essential component of every individual’s

education. Through learning, it can assist people in developing their abilities, traits, and behaviours.

There is evidence that entrepreneurs with a higher level of education are more significant in growing regional economies than those with a lower level of education (GEM 2011; Shambare 2013; Shambare 2016). This opinion is grounded on research results that bring to light that entrepreneurs with a stronger academic background are usually more innovative in that they make use of up-to-date business concepts and that their endeavours are based on the use of modern technologies (Chimucheka 2014: 2039).

According to Dhliwayo (2008: 329), taking a course or a programme in entrepreneurial studies has the effect of enhancing a student's future career direction towards self-employment and the chance to start one's own business. However, for such an influence to grow on a student, a critical aspect needs to be the nature, scope, and influence of such a programme or course on the student. A curriculum that focuses on providing students with the "know-how" and entrepreneurial attitudes is needed to enable the development of careers in running enterprises.

This view is confirmed by Mentoor and Friedrich (2007), Sharma (2017), and Bux (2017) who noted that "students do have enthusiastic entrepreneurial attitudes, however the curricula offered in the tertiary institutions is somewhat designed to drive the employee culture amongst students rather than the culture of self-employment" (Neck and Corbett 2018: 41). According to Mwasalwiba (2010: 39), numerous studies have revealed that university students have a positive attitude in relation to enterprises and small business start-ups. Chimucheka (2014: 403) is of the opinion that entrepreneurship education is linked to influencing an individual's decision to become an entrepreneur and their entrepreneurial success. The connection between academic education and entrepreneurship in general is questionable at best and the majority of these investigations have been conducted in first-world countries (Nabi and Liňán 2011: 235).

Comparatively, a small number of studies have been conducted in emerging countries; what these papers have in common is that they have concentrated on investigating the impact of higher education on fostering the creation of new entrepreneurs (Wang 2015:50). In comparison to industrialised countries, however, emerging countries have lagged in promoting and implementing entrepreneurship training in universities and other tertiary education institutions. As a result, if South Africa is to begin to address the demands of the global marketplace, its human capital plans must be overhauled (Zondo 2016: 37).

Entrepreneurship education is defined as the extent to which the educational system is effective in providing appropriate training and experience in the formation and managing of small- and medium-sized businesses (Chimucheka 2014: 403). The Consortium for

Entrepreneurship Education (2017: 6) defined entrepreneurship education as a life progression that continues through at least five different stages of development. The stages consist of fundamental business skills, awareness, innovative applications, start-ups, and eventual growth. The Consortium asserted that entrepreneurship education is a lifelong process.

Chimucheka (2014) and Wang (2018), although their definitions differ, both refer to the improvement and development of business mindfulness and entrepreneurship-related knowledge, skills, and ideas. Entrepreneurship education is the process of acquiring and refining the skills required to effectively start and manage a business. According to Radipere (2012), entrepreneurship education is a set of formal teachings that train and educate people who want to contribute to socio-economic development through a project that fosters entrepreneurial awareness and business creation. Entrepreneurship education is well defined as "a strategic intervention by the teacher developing entrepreneurial traits and abilities in the life of the learner to ensure that the student is knowledgeable and capable of surviving in the business environment" (Kgagara 2011: 818). Entrepreneurship education may be defined as the organised formal conveyance of business "know-how", which refers to the concepts, skills, and mental awareness used by people in the process of creating and growing their businesses (Isaacs *et al.* 2007; Wang 2018).

An enterprise education aims to provide students with a better understanding of what entrepreneurship is and to prepare them for a career in business. It also teaches students how to become entrepreneurs and take control of their professional and personal lives. Enterprise education has three main goals: to increase awareness of what entrepreneurship entails, impart entrepreneurial skills and to prepare people to become entrepreneurs (Mentoor and Friedrich 2007: 222). Entrepreneurship education strives to nurture the development of young businesspersons who will start new businesses.

Furthermore, entrepreneurship education also aims to develop creative thinking as well as a strong feeling of self-worth and a sense of responsibility. In the same way, students are expected to be able to start their own businesses (Tobias and Ingrams 2010; Sofoluwe *et al.* 2013; Wang 2018).

Schmidt and Molkentin (2015: 157) defined three key sources that necessitate entrepreneurship education. The sources in question here are composed of the government, students, and the business world; they all have different expectations from an entrepreneurship education programme (Wang 2018; Naong 2019). This supports Jack and Anderson (1999: 115), who highlighted that the government hopes that entrepreneurship education will have an effect on job creation, economic growth, skills development, and the development of an entrepreneurial mind-set and culture, all of which will assist in eradicating poverty. Businesses, on the other hand, anticipate that the

curriculum will equip students with a broader knowledge of core business challenges, innovative work attitudes, and an entrepreneurial attitude.

Learners are expected to use entrepreneurship education to help them establish new businesses and develop new skills that would enhance organisational performance in larger corporations. Entrepreneurship education, on the other hand, is intended to enable active entrepreneurs solve the particular issues that they encounter in their firms.

Individuals with entrepreneurship education gain knowledge and skills. According to the Consortium for Entrepreneurship Education (2015) research study by the American Enterprise Institute, the capacity to identify opportunities and arrange the necessary resources may be learned through entrepreneurship education (AEI). Sikalieh and Otieno (2010: 69) discovered that the majority of programmes teaching entrepreneurship at HEIs are intended to discover and awaken entrepreneurial energies, talents, and abilities, allowing for an improvement in self-sufficient behaviour and enhancing the knowledge of business start-ups and leadership abilities. Entrepreneurship plays a significant part in economic growth and social stability (Bell 2020: 18).

According to Ndedi (2013: 126), in order to effectively resolve unemployment of youth graduates, it calls for conducive strategies to be implemented, especially when the training of potential entrepreneurs through tertiary institutions is concerned. This is further stressed by Mbele (2016: 30), who states that entrepreneurship education has been found to play a critical role in fostering entrepreneurial propensity among graduates. According to Onguntimehin (2018: 285), it can be concluded that the introduction of entrepreneurship education to university students will gear up entrepreneurial proclivity in students, and, if the syllabus is properly structured, it can be an important factor in reducing the continuing unemployment among graduates. Academic approaches have attracted significant interest recently (Naong 2019: 255). Entrepreneurship education is intended to equip graduates with entrepreneurial skills, irrespective of their areas of specialisation; these are entrepreneurial skills that will enable them to partake in income-yielding ventures. Furthermore, it involves a re-alignment from being job seekers to job creators (Onguntimehin 2018).

According to Baijnath (2015: 5), effectively nurturing entrepreneurship amongst tertiary students requires more than merely teaching them regarding aspects of how to become entrepreneurs; the focus should be on instilling an entrepreneurial culture that starts much earlier than at the tertiary education level. According to Bell (2020: 18), entrepreneurship teachers can enhance the effectiveness with which they communicate their information by having a well-founded understanding of the various educational philosophies and ideas that support the pedagogy and practice of entrepreneurial education. In addition, a particular educational philosophy positioning underlines, guides, and drives pedagogical

methods. It should support the teaching goals and outcomes as well as the responsibilities that students and educators have in the learning process.

Therefore, there is a need to determine which factors have the most impact on a person's decision to create a business. This study is necessary due to South Africa's current unemployment, poverty, and poor absorption rate of graduates into the labour market.

2.6 The Current State of Entrepreneurship in South Africa

The GEM South African Report 2017 (Herrington, Kew and Mwanga 2017) noted that South Africa's formal labour market is saturated and unable to accommodate an ever-increasing labour force, and that little had changed in the previous 10 years. As a result, the government has decided to prioritise the growth and support of small- and medium-sized businesses. Furthermore, despite all these initiatives, South Africa remains among the least developed of all emerging nations participating in GEM. Even though entrepreneurship is now taught at most institutions as part of the curriculum, it is clear that the country's entrepreneurial activity is not progressing (Radebe 2019: 61).

According to Mahadea *et al.* (2010) and Neck and Corbett (2018), education can play a critical part in shifting the mind-set of South African youth from believing that formal work is the only way to earn money to realising the potential of self-employment. Entrepreneurship education is one of the most important channels that can increase economic productivity and youth entrepreneurial activity.

Since the occurrence of the global economic decline in 2008–2009, South Africa, like the rest of the world, has faced a constrained economy (Eaton *et al.* 2011: 22), and, unfortunately, this has continued over the past 10 years. The lack of entrepreneurs in South Africa is one of the country's major impediments to economic development and growth (Gwija, Eke and Lwu 2014: 165). This has mostly affected the youth of the country as they are the majority of the unemployed population, which includes many graduates of HEIs.

In most first-world countries, the backbone of successful economies has been the thriving conditions for entrepreneurship (Morris and Liguorie 2016). The South African government has implemented a variety of policies aimed at fostering entrepreneurship and small company development. Despite this, the ratio of entrepreneurs to non-entrepreneurs in South Africa is approximately 1:10, lower than 1:52 in other first-world nations, such as the United States and the United Kingdom. Given that the unemployed population consists of many university graduates, it would seem that the school system in South Africa continues to produce "job seekers" rather than "job creators".

It is evident that there are not enough people in South Africa with the necessary expertise and abilities to start new companies, as observed by Morris and Liguori (2016). Appropriately-structured entrepreneurial educational programmes and courses at HEIs may be a route to contribute to the development and self-inclination of graduates towards entrepreneurship, as well as their use of their creative talents and inputs to innovate (Naong 2019).

South Africa is grappling with a significantly rising youth unemployment rate, sluggish economic development, and poor overall entrepreneurial activity (TEA). These are actual limitations and threats to the South African economy; it is for this reason that the government, in conjunction with the private sector, is working tirelessly to address these challenges. Governments all around the globe have embraced entrepreneurship education (knowledge and skills) in schools, colleges, and universities as a platform for developing innovative and entrepreneurial individuals (Naong 2019: 225). There is a consensus amongst researchers that entrepreneurship is seen as a critical driver of innovation, economic growth, and job creation (Wang 2015: 7). If embracing entrepreneurship as a source of empowering South African graduates leads to job creation and revenue production, as well as creating work possibilities for the rising number of jobless graduates, it is a logical approach from an efficiency viewpoint (Gamede and Uleanya 2020: 7). According to Neck and Corbett (2018: 41), research has revealed that entrepreneurship education is critical in fostering entrepreneurial dispositions among new graduates. However, there is still no agreement on the variables that influence a person's decision to venture into business (Bell 2020). Education, alongside culture, has always played a vital part in the development of individuals in many African nations. Any region's cultural attitude to entrepreneurship must be considered, as well as the factors that may favour or discourage entrepreneurship as a career option (Dana 2018). On the other hand, there are no approved theories or hypotheses about what should be included in entrepreneurship education (Zondo 2016; Bell 2020). Entrepreneurship is not an actively pursued option with most South Africans; they would rather have the assurance of full-time employment than the risk of generating income from running their own businesses (Hameed and Irfan 2019: 135).

Entrepreneurship education is still at a growth stage in South Africa, and it has to more vigorously gain a foothold in institutions of higher learning in South Africa. South African schools and tertiary institutions are not performing well when compared to their counterparts in developing countries in terms of nurturing the skills needed to trigger entrepreneurship amongst students (Radebe 2019: 61).

The development of an entrepreneurial ecosystem through government legislation processes and procedures for small businesses has been proposed as a means to create an enabling business environment (Mbhele 2016: 10). This approach should encourage more new business ventures and economic development in the region (Neergaard and

Christensen 2017: 90). Small business development is a priority for South Africa's government. The government has created an Entrepreneurship and Small Business Promotion Strategy (2017). It includes increasing the availability of financial and non-financial support services, as well as increasing demand for small business products and services and easing bureaucratic barriers.

The Department of Trade and Industry has proceeded even further, establishing a wide-ranging model for the National Youth Economic Empowerment Strategy and Implementation Framework for 2009–2019. The draft framework focuses on issues of economic empowerment for young people in general. The draft framework outlines, as part of its mission, its aim of fostering "human capital development with a special focus on youth entrepreneurship, business management and technical skills" (Department of Trade and Industry [DTI] 2017: 11).

One of the greatest challenges in South Africa is to provide an education curriculum that addresses the country's rapidly increasing unemployment rate. Policymakers have confidence that more entrepreneurial activity is vital to arrive at the optimum levels of economic growth and innovation. Knight (2018) observed that entrepreneurship development is now crucial to many government policies.

Entrepreneurship education and training is frequently cited by policymakers as an "effective strategy for promoting entrepreneurial activity (Meyer 2017; Naong 2019). Furthermore, according to empirical research (Zondo 2016; Neck and Corbett 2018), South African legislators have also established positive links between entrepreneurial activity and economic progress. They believe that education, particularly in entrepreneurship training, may help people attain optimal levels of entrepreneurial engagement and awareness. As a result, numerous South African institutions are improving, promoting, and embedding entrepreneurial education within their curricula, as proposed by Radipere (Naong 2019: 226).

2.7 The Current State of Entrepreneurship Education at Tertiary Level

There is a growing devotion to entrepreneurship offerings within the establishments of higher learning (Tengeh 2015; Morris and Liguori 2016). Universities must create novel methods to teach entrepreneurship while adhering to rigorous academic measuring and assessment requirements (Taatila 2010: 50). According to Nieman (2001), Meyer (2017) and Naong (2019), institutional methods of teaching entrepreneurial education tend to focus mainly on equipping students with managerial skills. The current curricula are an isolated component that focus purely on business management skills; on the other hand, what is needed is an enabling mechanism in the curriculum that incorporates innovation, technology, and entrepreneurship in a more dynamic manner (Bester 2015: 1).

There is still an absence of an accepted model or theories in entrepreneurship education, which can help the instructor include material that stimulates students to be actively involved in entrepreneurship. The majority of today's entrepreneurship/small business education curricula use a business plan's presentation, regardless of the fact that most businesses do not follow the plan exactly (Fedri 2017). In addition, Morris and Liguori (2016) argued that most curricula focus on awareness but neglect to address the skills and attitudes that are critical to the success of any aspiring or new business owner. While in most South African universities entrepreneurship is offered as part of the curriculum, there remains a lack of clarity as to the effect of these programmes and the levels of entrepreneurial activity. One may hypothesise that the current curricula offered to students in tertiary institutions continue to cultivate a self-employment culture rather than promote an employee culture (Tengeh *et al.* 2015: 111).

While South African youth educational levels have improved over the years and there is growth in the number of young South Africans who have entered the tertiary education system and graduated, those taking entrepreneurial courses do not provide new business set-ups. According to Oguntimehin (2018: 285), the country's education system creates graduates that are unfit to satisfy the demands of today's labour markets and economic realities. Since the main goal of entrepreneurship education is to impart attitudes and knowledge to learners, the implementation of EE remains a major challenge in the world (Lackéus, 2015); most especially, the ability of EE to turn ideas into action by inculcating entrepreneurial skills. Despite the fact that EE teaching and evaluation methodologies can play a major part in the learning of entrepreneurial skills, concerns remain about tertiary students' lack of entrepreneurial abilities, despite having obtained technical expertise training (Purzer *et al.* 2016:4).

The frightening reflection is that as the workforce of recent graduates increases, a large number of these graduates are having a difficult time obtaining work simply because the formal South African labour market cannot absorb them (Tengeh 2015: 111). The duration between graduation and employment dates continues to elongate, causing concern among graduates. Self-employment, on the other hand, is a viable choice. Entrepreneurship education has been embraced by institutions of higher learning in the hope of equipping their graduates with the skills needed to start their own businesses (Oguntimehin 2018: 285). As a result, universities have become more entrepreneurial, and they work diligently to be more productive and innovative in bringing education and research together (Neck and Corbett 2018: 41) and providing some new options to the academic community that recognises business potential (Noang 2019: 266).

According to Nacuta (2014) and Wang (2015), studies have revealed that students' self-efficacy improves as soon as they start taking entrepreneurship courses, and, together with this, their career plans and intentions to become entrepreneurs rise as well. Equally important is that the best indicator of planned behavior is intention, and the source of

intention-based theories is used to look into how individuals take action in the direction of becoming entrepreneurs. Another factor taken into account is attitudes, which, amongst other things, can be influenced by environmental factors, such as lecturers, for instance. Building on these theories, researchers have tried to demonstrate that attitudes are essential for individuals' entrepreneurial actions (with educators being able to have an influence on attitudes), and entrepreneurship education also influences entrepreneurial behavior (Wang 2015; Naong 2019).

However, the empirical findings are somewhat inconsistent. It has been witnessed that tertiary institutions have not been able to effectively inculcate the attitude and culture of ingenuity amongst their entrepreneurship students. The culture of self-reliance amongst students and graduates, in the sense that they are able to use the skills acquired at university to create self-employment rather than seeking organisational employment as a career of choice, has remained a challenge (Meyer 2017: 50).

This dilemma of graduate unemployment has been progressively worsening since 1995, with the overall national unemployment rate remaining high (Noang 2019). In 1995, there were not many people with tertiary qualifications, and only 3% of South Africa's 7.5 million unemployed had a tertiary education (using the broad definition of unemployment, which includes those people who have given up looking for a job). Approximately 82% of graduates held diplomas, especially from universities of technology, while graduates with a university degree progressed far better. In the past, graduate youths holding diplomas from universities of technology were able to gain employment fairly easily and within a reasonable time frame after graduation. The current situation is that increasingly more of these graduates are joining the unemployment queue. As a result, it is possible to infer that entrepreneurship is a mind-set that cannot be taught, but that can be cultivated (Wang 2015: 17).

According to Nabi *et al.* (2019: 277), entrepreneurship education serves as a key catalyst in creating entrepreneurial attitudes among the youth, and the authors further emphasised that stimulating entrepreneurial skills and attitudes is beneficial to society and that this goes beyond their use in creating new business ventures. While entrepreneurship can have a favourable impact on economic growth and development, it is of great importance that institutions of higher learning should make an effort to increase the number of entrepreneurs through the entrepreneurship programmes offered at their respective institutions (Boldureanu *et al.* 2020: 1267).

In line with this view, Meyer (2017: 59) noted that "students do have enthusiastic entrepreneurial attitudes, however the curricula offered in the tertiary institutions are somewhat designed to drive the employee culture amongst students rather than the culture of self-employment". In order to successfully address unemployment issues

among youth graduates, a different approach needs to be developed specifically for the training of potential entrepreneurs through tertiary institutions (Noang 2019: 266).

In most parts of the world, entrepreneurship is struggling to find academic legitimacy despite the fact that it aims to produce students who are skilled in dealing with real entrepreneurial activities or develop students' entrepreneurial competencies into practical applications (Bell 2016: 50). While entrepreneurship courses try to teach entrepreneurship as a mandatory subject in the curriculum and use traditional teaching techniques, the relevance of the curriculum and teaching strategies in nurturing students' entrepreneurial competencies and abilities is the major problem of entrepreneurship in relation to education (Zondo 2016: 37).

According to Barnard (2012) and Noang (2019), this problem is attributed to the absence of academic and practical knowledge of young learners' entrepreneurial attitudes, aspirations, and career plans in South Africa. As a result, more knowledge is needed to cultivate skilled young entrepreneurs capable of boosting economic activity and supporting employment and wealth creation in the country. South African schools and tertiary institutions are not performing well when compared to their counterparts in developing countries in terms of nurturing the skills needed to trigger entrepreneurship amongst students (Neck and Corbett 2018: 41). According to Purzer, Fila and Nataraja (2016:4), Skill Acquisition Theory provides three phases of knowledge obtained by skill acquisition, ranging from a fundamental understanding of educational content to an intuitive level of application. Declarative, procedural, and automatised knowledge are the three main levels of knowledge. Declarative knowledge is recollection of static information. Procedural knowledge is the application of declarative knowledge to both cognitive and behavioural tasks. Declarative knowledge, according to the theory, gradually leads to procedural knowledge. In the context of entrepreneurship skills, the educational environment and evaluation methodologies greatly impact on effective transference of any educational content. It also equally important to note that knowledge can refer to a student's capacity to identify and implement viable entrepreneurial ideas and opportunities.

Therefore, there is no doubt that increasing the number of young people who start businesses will have a beneficial impact on not only the social plane, by boosting economic equality, but also on the overall economic indicators in South Africa (Noang 2019: 266).

Traditionally, people have followed a single career path, particularly students after graduation. However, the current situation is that the modern labour market is constantly changing; companies cannot guarantee a job for life, and people may have six to ten jobs throughout the course of their lifetimes in two or three different careers (Oinonen 2018: 1360). This drives students, graduates, and others to be entrepreneurial and create their

own job opportunities. Therefore, it calls for an urgent need for inculcating an entrepreneurial approach amongst students and citizens that supports the development of job creators and not job seekers (Noang 2019: 266). Entrepreneurs are people who take calculated risks, break new ground, and pioneer in the economy; they are, therefore, necessary to successfully tackle unemployment by growing the economy and creating jobs for themselves and others (Neergaard and Christensen 2017).

According to the 2017/2018 edition of the South African GEM report, South Africans are less likely to be entrepreneurial, identify excellent business prospects, or feel that they have the appropriate skills to start a business. A large number of South Africans have been taught to prevent uncertainty by finding a career that offers financial and employment stability as well as a pension plan, medical aid, and other benefits (Meyer 2017: 48).

Traditionally, South Africans have been socialised and educated to enter the labour market as workers but not as job creators (Brijlal 2011: 818). It is evident that the apartheid economic system in South Africa provided learning and development opportunities that met the needs of industries at the time. They made available a skilled workforce who would be confined to a comfortable environment and work for a “boss”. Rather than choosing self-employment as a career option, incoming university students were taught that they should graduate and then seek work in major corporations or other formal sector settings (Zondo 2016: 37).

According to Neck and Corbett (2018: 50), education can play a critical role in altering the mind-set of South African youth from believing that a formal job is the only way to earn money to recognising the possibility of self-employment. Entrepreneurship education is one of the most important channels that can increase economic productivity and youth entrepreneurial activity. The ability of small- and medium-sized business owners to learn and gain new talents is the distinction between those who succeed and those who struggle to grow (Adusei 2016: 201). Fatoki and Garwe (2010: 7321) are of the opinion that entrepreneurship education is still one of the key obstacles to South Africa’s economic development, with the consequence being an inadequate number of people involved in small businesses or entrepreneurship (Musetho and Lethoko 2017: 74). Despite the fact that EE teaching and evaluation methodologies can play a major part in the learning of entrepreneurial skills, concerns remain about tertiary students' lack of entrepreneurial abilities, despite having obtained technical expertise training (Purzer *etal* 2016:4).

Hence, the improvement of teaching methodology in entrepreneurship education can result in increased entrepreneurial activity of the SMME sector in South Africa, which is deemed the locomotive of the African continent. The South African government is supportive and committed to the promotion of entrepreneurship education with the

expectation that it will increase the entrepreneurial intentions of the unemployed youth in the country (Musetho and Lethoko 2017: 74).In addition, the inclusion of entrepreneurship education reinforces the core concept that intentions transform into action in terms of actually launching a firm, similar to how nursing schools produce nurses.

According to Naong (2019: 266), reports have revealed that most of the youth in South Africa do not believe that they have the essential abilities to start a business, which may be attributable to the reality that only a small percentage of South Africans have finished high school. During the years of 2001 and 2002, the South African education system was cited as the country's major stumbling block to entrepreneurship (Horn 2006: 113).

In the past, the South African educational system favoured a teacher/reproduction culture over a learner/experimental learning culture, failing to adequately prepare learners to think critically or laterally, to be creative, and to explore opportunities that arise from environmental changes. According to Bux (2017), the three most frequently identified factors that limit entrepreneurial activity in South Africa are a lack of entrepreneurial capacity due to educational system flaws, extremely limited access to financial support for entrepreneurs, and misaligned governmental support services for entrepreneurs.

Even though entrepreneurship education has been endorsed worldwide and locally as a means of nurturing entrepreneurial activity and, ultimately, eradicating poverty, there are still impediments to successful entrepreneurship education in South Africa, according to Bell (2021: 18). Another issue with which this country is confronted in terms of entrepreneurship education is the general lack of entrepreneurial components in the educational system as well as mismatched learning techniques (Bell 2021).

There are many programmes that exist with the main objective of developing entrepreneurs in South Africa; however, there are no tangible results that are noticeable in terms of producing the entrepreneurs that are required by the South African economy (Naong 2019: 225). The current curriculum is an isolated component that focuses purely on business management skills; on the other hand, what is needed is an enabling mechanism in the curriculum that incorporates innovation, technology, and entrepreneurship in a more dynamic manner (Bester 2015; Bell 2016). Some researchers are of the opinion that certain aspects can be taught and learned as far as entrepreneurship education is concerned (Turner and Gianiodis 2018: 131).

Others, however, maintain that the best way to learn entrepreneurship is through personal experience, and, hence, experience is the best teacher of entrepreneurship (du Toit 2018). All this underlines the question about the effectiveness of the influence of entrepreneurship education on a student's career decision to become an entrepreneur after having attained the necessary skills of entrepreneurship (Bux 2019). Mbhele (2016) and Fedri (2017) argued that there is a strong connection between education and venture

creation. Furthermore, researchers and scholars have suggested that it is possible to increase entrepreneurial ability (orientation) through education.

According to Meyer (2017: 50), university students who had taken an entrepreneurship course realised that, despite the fact that entrepreneurship education has been emphasised at institutions of higher learning since the early 1990s, there is still a need for it. Students' exposure to entrepreneurship education does not guarantee entrepreneurial orientation or positive attitudes towards entrepreneurial talents and professions.

According to Chimucheka (2014) and Nabi *et al.* (2017), it is essential to quantify or evaluate the influence of entrepreneurship education on SMME performance in the country as it will reflect if entrepreneurial education's aims have been achieved. However, previously, not much focus has been devoted to measuring or assessing the overall effectiveness of entrepreneurship education with respect to students who take these courses and South African society. One of the major obstacles linked with the assessment of entrepreneurship lies in the measuring of the output of the entrepreneurship education process. The methods used are still not well-defined or standardised across all institutions that offer entrepreneurship education (Nabi *et al.* 2017: 277).

Ndedi (2014) and Morris and Liguori (2016) stated that in order to effectively resolve the unemployment of youth graduates, constructive strategies need to be put together when the development of future entrepreneurs at higher institutions is concerned. According to Adusei (2016), Mbhele (2016), and Fedri (2017), entrepreneurial education has long been recognised as a critical component of socio-economic growth and development. It is for this reason that entrepreneurship education has increased considerably at many schools and universities around the world, including in South Africa. While entrepreneurship education is gaining much traction in academic programmes throughout the world, many studies still need to be carried out on it (Ghina 2014; Nabi *et al.* 2017; Bell 2021).Few studies appear to evaluate assessment techniques in entrepreneurship education effectively, and there is a need to develop in-depth knowledge on how educators apply various assessment practices to evaluate students against planned learning outcomes (Kriewall and Mekemson 2010; Songer and Ruiz-Primo 2012). According to Purzer *et al.* (2016:4), quality assessment is critical in education because it allows teachers to assist student learning and improve educational programmes.This broad research, together with similar past studies, reveals a general lack of research on the evaluation methodologies in entrepreneurship education. There are unresolved concerns in the current literature concerning assessment approaches and student learning evaluation that necessitate further research (Douglas and Purzer 2015; Purzer *et al.* 2016; Lee 2019).

As entrepreneurial education is important, it is a top priority for policymakers in most countries, including South Africa; however, not many studies have been presented to evaluate its impact. Enterprise education is gradually becoming viewed as a mandatory model within tertiary institutions, regardless of the learner's discipline or long-term professional objectives (Bell 2016; O'Brien *et al.* 2019). The output of entrepreneurship education is also still not well understood, irrespective of the extensive promotion of entrepreneurship education (Morris and Liguori 2016). According to Nabi *et al.* (2017: 277), not enough research directly linking the student's/graduate's entrepreneurial outcomes to a specific pedagogical approach has been carried out; therefore, this calls for an in-depth investigation. Furthermore, it is necessary to examine the different pedagogical methods that underpin these outcomes and not only methodological issues. Ambiguity regarding the impact of entrepreneurship education may possibly result from the wide assortment of educational methods used in entrepreneurship education programmes.

This is mostly due to the reality that the majority of South Africans have had little or no experience with entrepreneurship at home and do not see themselves as potential entrepreneurs. Because of the history of entrepreneurship, discouragement, and the culture of working for others, there is still a shortage of entrepreneurial education for young people that can inspire them to start a business and foster an entrepreneurial culture (Sharma 2016; Herrington 2017).

This is evident because the numbers of existing and new business start-ups are not increasing, and, as a result, this has failed to reduce unemployment in the country as anticipated (Mbele 2016; Naong 2019). In South Africa, there is a pressing need to raise entrepreneurial awareness and provide a solid foundation in entrepreneurial abilities, such as fundamental commercial, administrative, and financial skills (Nurye 2017: 13).

Herrington (2017: 10) emphasised the importance of cultivating an entrepreneurial mind-set, which includes students' and people's perceptions that they can thrive as entrepreneurs and that entrepreneurship can be a viable career option. Experts in South Africa have identified a lack of entrepreneurship education as one of the country's largest stumbling blocks (Herrington 2017: 57). One of the recommendations by President Cyril Ramaphosa, in his address at the Global Entrepreneurship Consortium (GEC) in 2017, was to integrate entrepreneurship education into the school syllabus at all levels in order to foster a very solid entrepreneurial culture amongst students (Herrinton 2017: 50). Ndedi and Bekele (2010) and Shambare (2013) are of the view that the one crucial component of entrepreneurship training is to teach or to stimulate the start-up process of entrepreneurial ventures after students have graduated. However, most entrepreneurial programmes in South Africa are failing in this regard.

According to Naong (2019: 330), a student's career selection and attitude towards the field of entrepreneurship education are what enable them to successfully progress or graduate into becoming exceptional entrepreneurs, while Fedri (2017: 421) is of the view that the model of entrepreneurship training must develop managerial skills in order to produce successful entrepreneurs. Some researchers are of the view that the most effective entrepreneurship education learning process is the one that incorporates both classroom and real-world situations (Neck and Corbett 2018: 45).

According to Bell (2016: 50), it is important to ensure that the course's learning objectives, pedagogy, and assessment are all in sync, as well as to align the philosophy with learners' expectations, needs, and desired outcomes. As a consequence, it is more likely to improve the learners' experience. In addition, Bell (2021: 18) stressed that educators ought to be aware of the various educational philosophies and theories that may be used in entrepreneurship education pedagogy and practice, since these inform and provide much better knowledge of how to impart entrepreneurial skills and beliefs. To ensure that the country's full potential for economic growth is realised, all citizens' entrepreneurial energies and capabilities must be cultivated and harnessed towards the creation of new businesses. Efforts to improve and encourage entrepreneurship education at all levels of education and for all people in South Africa will help the country achieve its economic growth, job creation, and TEA goals.

2.8 The Challenges for and Barriers to Entrepreneurship Education

Entrepreneurship contributes to innovation, development, job creation, and reasonable income distribution. It has received much attention during the past decades since new business creation is a significant driving force of economic growth and leads to the creation of numerous new jobs. According to Naong (2019: 266), entrepreneurship education is deemed as one of the most important sources of distributing entrepreneurial knowledge. University graduates, investment owners, pioneers with novel business ideas, and motivated unemployed individuals are all potential entrepreneurs, if only the suitable support for their entry is offered (Yaghoubi 2010: 1901). Notably, the idea of entrepreneurship has always been theoretically acclaimed but not practically considered (Ebewo and Shambare 2012: 17). However, many barriers either stop entrepreneurs from entering the business market or cause their businesses to collapse after entering (Raeesi *et al.* 2013: 56).

South Africa's incapacity to properly educate its inhabitants, particularly those from poor or modest origins, was noted by the South African Institute for Entrepreneurship (SAIE 2006). Furthermore, according to the GEM study, schools are failing to teach the great majority of students the essential information and skills required to start a firm (Radebe 2019).

According to Radipere (2012) and Herrington, Kew and Mwanga (2017), entrepreneurship is a young and emerging academic discipline in South Africa, and there is a growing demand for in-depth knowledge in this field. Although many studies have been carried out to develop learning programmes at the tertiary and high-school levels, in terms of teaching methodologies, almost all entrepreneurship educators often have to rely on themselves (Lackéus *et al.* 2016; Neck and Corbett 2018), even though they have a limited understanding of the fundamental educational theories and philosophies that guide their profession. Baptista and Naia (2015) and Lackeus (2015) emphasised the importance of entrepreneurship educators understanding how educational philosophies and theories inform multiple teaching methods to accomplish different educational goals. Considering the multifaceted objectives and educational approaches from teaching and learning activities, this becomes challenging in entrepreneurship education (Ramsgaard 2018; Neck and Corbett 2018). Robinson *et al.* (2016) emphasised the significance of combining a variety of learning theories, philosophies, methodologies, and techniques into entrepreneurship education in order to improve learner-centred approaches, which will improve and build entrepreneurial awareness. Notably, according to Brieger *et al.* (2020), the adult learning theory does not exist, but there are various other ideologies and ideas. As a result, it is critical to use educational philosophies and learning theories appropriately to support learning objectives and fulfil the needs of learners. Despite the fact that entrepreneurial education is strongly tied to education and its doctrines, philosophy, and theory, there has been very little research on the relationship between education, scholarship, and the practice and learning of entrepreneurship education (Fayolle *et al.* 2016).

The South African Department of Higher Education and Training stated that its objective is to produce “competent, well-educated, and talented individuals who are able to stay competitive in a sustainable, diverse, and knowledge-demanding economy that achieves the development goals” through academic institutions (Republic of South Africa 2016). On the other hand, much more research is needed to create the most effective courses and syllabuses at institutions of higher learning (Fayolle and Gailly 2015: 80). This will empower and aid the lecturers to be more effective in their delivery methods of entrepreneurship and also meet the emergent demand for fitting entrepreneurship education. Conversely, a solid entrepreneurship education will encourage students to establish their own businesses (Baptista and Naia 2015; Lackeus 2015).

2.8.1 Youth Entrepreneurship: A Global Problem

Despite the reality that the growing tendency of university graduates lacking the interest and capacity to engage in entrepreneurial activity is increasingly becoming a worldwide issue (GEM 2017; Bakar *et al.* 2017), it is most harshly experienced in emerging countries. There is an increasing concern in Malaysia regarding the lack of entrepreneurial skills and interests in entrepreneurial activities upon graduation among

students in non-business disciplines. They prefer to become job seekers and to be employed rather than become job creators (Bagheri and Pihie 2013: 51). A similar trend was observed in Ethiopia by Nurye (2017: 3).

In South Africa there are escalating unemployment rates of more than 25% (Stats SA 2019), and this indicates rapidly shrinking traditional job opportunities for tertiary education graduates, a trend that has continued into the current period and worsened during the COVID-19 pandemic (Gamede and Uleanya 2020: 11).

Therefore, this necessitates more investment in entrepreneurship education and development at all levels of education. However, there have been requests for higher education to be transformed to include entrepreneurial instructions (Zondo 2016; Mbele 2016). Policymakers believe that preparing students to become employers should be a top national goal, particularly in light of the staggeringly high unemployment rate (Stats SA 2016). Although entrepreneurship is a viable solution to the unemployment crisis, graduates show little enthusiasm in pursuing it. Therefore, this necessitates more investment in entrepreneurship education and development at all levels of education.

2.8.2 Students' Lack of Interest in Entrepreneurship

Despite the fact that there is a strong connection between higher education and the intention to participate in entrepreneurial activities, authors such as Shambare have cautioned that obtaining a university degree does not inherently change a person into an entrepreneur (Shambare 2013: 450). A significant number of students prefer the stable income of a conventional job over the uncertainties related to entrepreneurship (Ebewo and Shambare 2012; Makgosa and Ongori 2012: 449). While scholars such as Yaghoubi (2010: 1901) recognise several obstacles to student entrepreneurship, the research does not clearly articulate the approaches that universities should take to overcome these barriers. This, therefore, provides further justification for this research.

Many scholars have looked at the link between students' perceptions and their intentions to start a business (Makgosa and Ongori 2012: 449), the portion of students who are skilled in business planning (Ebewo and Shambare 2012: 17), and success in creating new business ventures (Yaghoubi 2010: 1906) as elements that determine entrepreneurial activity so as to better understand the phenomenon of youth entrepreneurship. These researchers have conclusively proven that students are less inclined to pursue entrepreneurship as a career path if they have weak business management skills, particularly planning skills; lack assistance; and are not exposed to real-world business scenarios (Naong 2019: 266).

This is in line with the study by Herrington (2017), who reported that entrepreneurial training at a higher education level remains relatively low in South Africa. Furthermore,

according to the South African GEM (2017), only 10.1% of working-age South Africans want to establish their own firms in the next 3 years, as compared to 41.6% in the other African nations surveyed. Even more concerning is the fact that this rate of "entrepreneurial intent" has been declining in South Africa in recent years. In 2013, it was 15.4%, down from 19.6% in 2010 (Herrington 2017). This reinforces Musetsho and Lethoko's (2017) assertions that graduates in South Africa do not aspire to venture into business as a career option and have to wait many years after graduation before securing a job.

On the other hand, the university entrepreneurship education programme is seen as a catalyst for igniting entrepreneurial ambitions (Moodley 2016; GEM 2017; Neck and Corbett 2018). According to Zondo (2016) and Mbele (2016), higher education plays an essential role in the development of entrepreneurs since universities have the capacity to build business acumen, develop enterprising minds, and, most importantly, spark entrepreneurial intentions. This is consistent with studies by Yaghoubi (2010), Makgosi and Ongari (2012), and Naong (2019) who pointed out that traditional university education aids in the development of entrepreneurial awareness. However, if it is overemphasised without practical entrepreneurship training, students will not be equipped with practical business abilities. This perpetuates the problem by creating the illusion that university graduates are ready to start their own businesses when they are not. Most of the time, they lack technical knowledge on how to start and operate a business. Notably, when opening a business is concerned, aspiring entrepreneurs face several difficulties and barriers.

a. Entrepreneurship Barriers (EB)

Many scholars, including Neck and Corbett (2018), Noang (2019), and O'Brien, Cooney and Blenker (2019), have concentrated on identifying the challenges to turning university education into commercial activities to explain why students are hesitant to participate in new entrepreneurial ventures. According to the findings of these research studies, there are four significant flaws in universities' present teaching methods for entrepreneurship promotion. These obstacles lead to a lack of motivation in pursuing an entrepreneurial profession (Chabane 2013; Musetsho and Lethoko 2017) and are briefly discussed in the following subsections.

b. Inappropriate Syllabi and Content

According to Shambare (2013: 452), course content is considered beneficial in any educational environment when it is aligned with the country's economic realities (Republic of South Africa 2012). In South Africa, for instance, the Democratic Party (DP) stated that higher education should play a significant role in the development and training of entrepreneurs. Furthermore, at the micro or individual level, the course must be thorough enough to allow students to develop genuine entrepreneurial skills and knowledge. A student studying business management should, in an ideal world, be able to write a solid

business plan after graduation (Ebewo and Shambare 2012: 18). Nonetheless, university graduates are not only ill-prepared for business but also often under skilled for the labour market (Sowetan 2012; Naong 2019). Clearly, this indicates a lack of proper educational content in the field of entrepreneurship.

The curricula offered in institutions of higher learning are lacking in substance and the delivery methods used to teach students. As a result, they do not accomplish the anticipated outcomes. There is a high number of entrepreneurship graduates looking for employment in the formal labour market, instead of them being creators of employment (Naong 2019: 366).

In reviews conducted by Mwasalwiba (2010) and Bell (2021), the authors evaluated the co-ordination existing between standard objectives, teaching techniques used, the target audience, and impact indicators used to measure successful learning in entrepreneurship education. However, a gap was identified in the co-ordination of existing fundamentals of entrepreneurship education within HEIs. They revealed that these institutions have failed to develop a theory of entrepreneurial learning that will effectively produce successful entrepreneurs. Entrepreneurship education should provide students with relevant experience and assist them in gaining self-confidence. Therefore, the lack of these qualities has been identified to be the root cause for new graduates not participating in entrepreneurial ventures after they have graduated, since the main objective of entrepreneurship education is to stimulate or trigger start-up businesses by students after graduation (Musetso and Lethoko 2017).

Learners in South Africa, according to Isaacs, are rarely pushed to be job producers. Instead, they are encouraged to pursue jobs in order to provide a stable income for their families (Nchu 2015: 30). The outdated content of school textbooks supports the argument that a rift has formed between the educational system and the labour market (Musetso and Lethoko 2017; Bux 2017).

According to Herrington (2017), in the GEM report, the absence of education and training has hindered managerial capability and entrepreneurship in South Africa. The educational system in South Africa does not facilitate the development of managerial skills. This might be ascribed to the failure of South Africa's educational system to promote entrepreneurship as a viable career option. Furthermore, South Africa's shortcomings include the overall absence of entrepreneurial aspects in the educational system, inadequate learning methods, and community programmes that are not outcome oriented (Zondo 2016: 37).

This is consistent with studies by Herrington (2017) and Musetsho and Lethoko (2017) who found that one of the major impediments to entrepreneurship in South Africa is a lack of education and training. In South Africa, the quality of basic education has worsened

and more than half of high school students do not matriculate. Furthermore, there are flaws in the South African educational system, with entrepreneurship education being one of them. These flaws may be traced all the way back to the apartheid era. As a consequence of apartheid's Bantu education system, current higher institutions are admitting students who are ill-prepared (Bux 2016).

A lack of fundamental business skills is a disadvantage to starting a business. The youth's latent entrepreneurial ambition can also be influenced by social and cultural factors (Chimucheka 2014: 2039). According to Bux (2016: 24), the Black Economic Empowerment Commission noted that the decision by the South African Department of Higher Education and Training to implement basic education provisions using traditional teaching methodologies was neither conducive to the advancement of an entrepreneurial spirit among students nor did it instil skills and values that students need in order to adopt a mind-set that would enable their attitudes, perceptions, and opportunities to become employable. As a consequence, South African policymakers and academics are faced with two main issues in the delivery of basic education: unequal education and the relevance of and right to access its basic education provision that will trigger an entrepreneurial mind-set among its recipients, to shift the mind-set from being job seekers to being job creators.

The South African entrepreneurship education system has concentrated mostly on orthodox academic teaching techniques, which are failing to produce entrepreneurs as an output of the entrepreneurship programme. There is an urgent need for South African universities to get underway with launching an entrepreneurship education curriculum with the main objective of producing entrepreneurs and not only entrepreneurship graduates (Herrington 2017; Musetsho and Lethoko 2017).

c. Inappropriate Teaching Methods

While information is essential, the manner in which it is delivered is just as critical. The degree of participation of pupils is determined by the teaching methods used (Shambare 2011; Bux 2016). Thus, academic institutions should use teaching techniques that allow for the real implementation of learned information as well as the development of the required skill sets to encourage better learning. In the context of entrepreneurship, this ties directly to teaching both the theoretical and practical aspects of business (Strydom and Adams 2009; Noang 2019).

Effective teaching techniques help students to develop free and creative thinking in the application of information and theory in the actual world, rather than merely repeating theory from textbooks (Shambare 2011: 4176). According to Duval-Couetil and Long (2015: 35), while colleges work diligently to stimulate entrepreneurially-minded students, the teaching of entrepreneurship has not been fruitful as there is no evidence of the anticipated results.

Case studies, group discussions, individual presentations, individual written reports, group and individual assignments, formal lectures, guest speakers, action learning, seminars, web-based learning, and video recordings are among the instructional techniques classified by several scholars (Bell 2021; Carrier 2007; Hindle 2007; Fayolle 2007; Fayolle and Gailly 2008; Lonappan and Devaraj 2011). However, Bell (2021) argued that if the goal of education is to train students to be entrepreneurial, the most successful techniques for facilitating experiments are to test out entrepreneurship in a controlled setting, such as through role-playing or business simulations.

Ndedi and Bbenkele (2010) and Turner and Gianiodis (2018) are of the opinion that activities that engage students in the start-up process are what truly count, and that this is what most entrepreneurship courses in South Africa lack. Several institutions are participating in a variety of programmes aimed at filling this training gap for aspiring entrepreneurs. These courses cover entrepreneurship and small business management as well as innovation and creativity, opportunity identification, and business planning.

d. Lack of Entrepreneurial Support

Universities appear to procrastinate where creating student-run companies is concerned. When trying out “wild” business ideas, students do not receive institutional assistance. Regardless of the fact that many colleges promote entrepreneurship, it appears that students are being taught to be employees.

As a result, excellent opportunities to experiment with start-up ventures and understand first-hand what it entails to be an entrepreneur are being lost (Naong 2019; Bell 2020). According to Mbele (2016: 17), where obtaining financial help for their businesses is concerned, entrepreneurs encounter a number of challenges. According to researchers, these factors include a lack of personal finances, surety or guarantees to secure loans, and of business skills and experience, all of which young people are unlikely to possess.

According to Ndedi (2009) and Mbele (2016), South Africa has set up well-intentioned governmental departments and agencies. On the other hand, there is ineffective co-ordination within these departments. The formation of silos throughout governmental departments has caused more constraints instead of creating a suitable enabling environment for entrepreneurs (Mbele 2016).

According to Bux (2016: 29), one of the major impediments to youth entrepreneurial activity and development in South Africa is limited access to entrepreneurship education. The findings by Herrington (2017: 56) reinforce these premises, even though they concentrated on underlying factors that were contributing to the low rates of entrepreneurship in South Africa. One of the emergent disabling factors was the lack of entrepreneurial skills and the mind-set to become entrepreneurs. Furthermore, there is

still much that needs to be done at a policy level in order to facilitate the development of entrepreneurial competences and intentions.

Students require a reasonable time to transform a feasible business idea into a successful business. Many entrepreneurship programmes offered by HEIs are short courses or electives, which limits their ability to produce entrepreneurs. Furthermore, most HEIs do not allow students to do so in an entrepreneurial context or setting, particularly where the long-term incubation and development of a viable business idea are concerned, which is widely acknowledged as crucial to the venture formation process (Naong 2019: 266).

e. Students' Lack of Exposure

In South Africa, students are not exposed to entrepreneurial concepts. Universities are admitting ill-prepared students as a by-product of apartheid's Bantu education system (Bux 2017). Black students' entrepreneurial ambitions are 50% lower than those of other ethnic groups (Bux 2017; Masetho and Letheko 2017). This, along with the fact that many colleges are underfunded and under-resourced, means that many universities cannot afford to provide the necessary training to enhance students' exposure (Naong 2019: 266).

According to published research, there is a lack of consistency in entrepreneurship and small business training in South Africa. The South African government has presented and sponsored an internship/learnership programme, but this is not focused on entrepreneurship. None of these programmes is offered as part of academic entrepreneurship programmes (Bux 2016; Herrington 2017).

According to Kunene and Fields (2017), age is deemed as a limiting factor to youth entrepreneurial inclination regarding, for instance, much-needed knowledge. Where time management, business acumen, and management skills training are concerned, very many university students have not learned from being mentored. Furthermore, overall, young people do not have strong relationships with other entrepreneurs, which might improve their capacity to collaborate and network and, subsequently, increase their opportunities (ESDA 2016).

Furthermore, most prospective entrepreneurs are not informed of government programmes specifically aimed to help them, and those who are aware of such programmes claim that accessibility and bureaucracy within these government structures are another constraint. As a result, youth with entrepreneurial inclinations feel that the South African government is not giving them enough support to build an enabling environment for them to start their businesses (Radipere 2012; Mbhele 2016).

f. Shortage of Funds and Resources

Financing issues in business are one of the most frequently reported impediments to entrepreneurship. In face of financial constraints, most entrepreneurs are forced to surrender their dreams of starting a new business. When people have more money, they are more inclined to take advantage of entrepreneurial possibilities (Raeesi *et al.* 2013: 56). Bux (2016: 29) stated that access to capital is one of the most challenging barriers to the growth of entrepreneurship. In line with this, Qunlian (2011: 228) mentioned the shortage of funds and entrepreneurship capital as a main barrier to current university graduates' entrepreneurship in China. According to Kunene and Fields (2017), young people in Africa are often unable to secure the capital necessary to start a business. Most young individuals lack the credit or collateral necessary to obtain essential capital from banks or private equity companies. Most critically, they lack the necessary abilities to effectively manage this crucial resource.

Raeesi *et al.* (2013) and Liñán, Nabi and Krueger (2017) viewed the lack of resources, funds, and government assistance as entrepreneurship barriers among Malaysian postgraduate students. Any entrepreneurial venture needs capital to start operating and to grow the business. One of the causes of SMME failure in the country can be ascribed to the lack of financial resources (Mbhele 2016; Bux 2016). It is not easy to source funding from the commercial banks in South Africa, especially the larger, more established banks. About 75% of loan applications are declined, given that these applicants do not have collateral security, favourable credit records, or required bank deposits (Tendai 2012; Bux 2016). These banks have been criticised for not assisting new businesses and aspiring entrepreneurs with finances, and this is also a limiting factor for those in business wanting to pursue a business venture (Ndedi 2009; Mbele 2016; Naon 2019).

2.9 Measuring and Evaluation Process

Teachers must be knowledgeable about the interaction between their teaching philosophy and their students' learning methods. Bell (2020: 30) firmly advocated for educators to grasp these concepts in order to maximise the effectiveness of their teaching. In addition, educator narratives normally emphasise a lack of intellectual depth and understanding of core educational philosophies and theories (Fayolle *et al.* 2016: 60).

Jones (2019: 79) emphasised the lack of a coherent philosophy of entrepreneurship education, while Ramsgaard (2018: 80) contended that no one philosophy or learning theory can effectively ground the diverse academic methodologies used in entrepreneurship education. Affective, behavioural, cognitive, conative, and skills-based measures can all be used to assess entrepreneurship education (Longva and Foss 2018: 18). These different types of entrepreneurship education can provide an understanding of what it means to be an entrepreneur (Rodriguez and Culkin 2018: 405). Affective measures consider how an individual's inclination towards entrepreneurship has

improved as a result of attending an entrepreneurship programme. Knowledge about entrepreneurship is fostered by cognitive measurements, and this includes cultivating a knowledge of the business venture formation process. Critical thinking abilities are assessed as part of skills-based tests (Rodriguez and Culkin 2018: 405).

Nabi, Linan and Fayolle (2017: 299) advocated that the outcomes of entrepreneurship education are changes in students' outlook, improvement in entrepreneurial skills and knowledge, the probability of entrepreneurial intentions, socio-economic impacts, business start-up rates, and increased business performance. LaGrandeur and Hughes (2017: 18) stated that entrepreneurship education encompasses critical thinking due to the need to dissect information and make decisions. Recently, there has been more emphasis on scrutinising the current status quo in entrepreneurship education. This has given rise to a scholastic culture fixed on instant results, without taking into account that some behaviours take time to change. In order for entrepreneurial learning to take place, it often needs to utilise networks (Rae 2017; Fredi 2017). Concerning research that assesses the extent to which entrepreneurship education is taught in non-business courses, and particularly in schools, there is a substantial shortfall (Zondo 2016: 239).

According to Ghina (2014: 340), when internal programme planning and monitoring are concerned, there is a lack of full evaluation within HEIs. This includes external evaluations of alumni and postgraduates' new business start-ups after they have completed the programme. Furthermore, within HEIs, there is not much emphasis on all aspects of learning. This is because most of these studies have focused on specific courses or programmes. Only a few studies have presented well-founded hypotheses, and scarcely any studies build on the theory to explain the hypotheses (Zondo 2011, 2016).

The majority of these studies that present the evaluation of entrepreneurship education are limited, and they are focused only on selected influences from the internal point of view, such as intention and participants' satisfaction, and they are also limited to some influences from external perspectives, such as a graduate career after graduation (Fayolle and Gailly 2015: 75). Brijlal (2008: 715) conducted a comparative study about entrepreneurship education at the four leading tertiary institutions in the Cape Metropole. However, there was no indication that these institutions do follow-ups on students after completing the programmes. Therefore, they do not evaluate the impact of their programmes on graduates in terms of triggering business start-ups, enhancement, and sustainability.

Among students studying entrepreneurship, entrepreneurship is frequently considered as a career ambition or professional identity. Long and Duval-Couetil (2015: 20) argued that, in the short term, venture creation may not be a representative outcome, particularly for undergraduates.

Furthermore, Duval-Couetil and Long (2015) and Noang (2019) highlighted the ambiguity surrounding what constitutes meaningful outcomes for modern entrepreneurship programmes, as well as how and when they should be assessed. There is a lack of certainty among scholarly communities on how to define the theoretical understanding of entrepreneurship or how it should be taught – ranging from the skills and abilities that students acquire to the development of an "entrepreneurial way of thinking", empowering them to identify opportunities and to be more proactive. Wide-ranging pedagogical methods lead to uncertainty concerning *how* outcomes should be measured. It has been witnessed that impact assessment in entrepreneurship education is presently receiving growing attention from numerous stakeholders (Herrington 2017; Fredi 2017). However, gauging or assessing the overall efficacy of entrepreneurship education programmes for individuals and the general public has received less attention (Zondo 2016: 39).

According to Nabi *et al.* (2013: 277), it is not possible to measure venture creation during or after the entrepreneurship programme as the process of venture creation generally takes time. The selection of universally-accepted success indicators is one of the challenges in impact evaluation. This is because, as an emerging subject of study, present entrepreneurship (education) is categorised by arguments or dialogues between stakeholders with conflicting interests and theoretical orientations with reference to entrepreneurship (Mwasalwiba 2010; Fredi 2017). Each contributor to this field of study, according to Zondo (2016: 39), does it from their own perspective, making the field more incoherent. Furthermore, entrepreneurship theorists continue to debate whether entrepreneurship is a learned behaviour or an innate quality, as well as whether it can be taught. Politicians and policymakers continue to promote entrepreneurship education because they see it as having a positive economic impact (e.g., new ventures and additional jobs). Similarly, businesses may believe that hiring a graduate of an entrepreneurial programme will result in ground-breaking business practices and the discovery of new opportunities.

This interpretation describes the entrepreneur as a knowledgeable and innovative individual, appropriately supported by higher levels of thinking, which can only be attained through education or training. Apartheid educational policies gave the impression that this was not allowed to happen in the South African setting, particularly among Africans. Now, 22 years after the new political dispensation, the legacy appears to have persisted (Bux 2016: 30).

2.10 Effective Entrepreneurship Educational Programmes at Tertiary Level

South Africa's economic structure is well served by institutions of higher learning in that they make available a trained workforce for large businesses. On the other hand, with the country's economy having been in transition since 1994, small and medium-sized

businesses have been responsible for an increasingly greater part of the economic activity, while tertiary institutions have needed to redefine their role in the economy and society (Herrera, Guerrero and Urbano 2018: 109). Taatila (2010) and Naong (2019) noted that a wide variety of curricular approaches exists and that there are various common components across institutions offering such programmes and courses. Even so, the prescribed texts for the syllabus and the teaching methods of entrepreneurship education should be structured to familiarise the conception of entrepreneurial activity and provide hands-on experience and working models for students to develop skills as entrepreneurs.

According to Zondo (2016: 37), the international standing of South Africa's HEIs would be reinforced by an effective investment in national higher education programmes on the subject of entrepreneurship that meet the needs of the population. By simply distinguishing the great value and significance of entrepreneurship, and by intensifying education about it, South Africa can hope to obtain a prominent position in the world of education and become equally competitive economically. Universities must do more to help graduates who will be job creators instead of merely being job seekers. Higher education should prioritise developing entrepreneurial abilities and initiatives. This accentuates the importance of academic institutions reinforcing their role in society, which includes eradication of poverty, illiteracy, environmental degradation, and sickness (Neck and Corbett 2018).

Schools have a significant role to play in the lives of learners by instilling "appropriate academic, business and positive life-long skills" (Naong 2019: 277). Entrepreneurial training has its practical limitations, and their final studies should be centred on personal entrepreneurial experience. Neck and Corbett (2018) and Hunter and Lean (2018) studied the impact of synergistic teaching methods, particularly the action learning approach, on the development of entrepreneurial skills.

Nchu (2016: 22) advocated a concept of lifelong entrepreneurship education that harnesses the experiences and abilities needed to pursue a career in entrepreneurship. In this approach, all young people must be exposed to entrepreneurship education on a regular basis.

Previous research into the impact of entrepreneurial models on students' perception of entrepreneurship has concentrated on students' exposure to local entrepreneurs (Kisubi, Korir and Bonuke 2021: 15). Sánchez and Sahuquillo (2015: 1079) proposed a training curriculum that provides mentorship from local entrepreneurs. Each student is assigned a mentor in this programme and fully participates in all business decisions.

According to Boldureanu *et al.* (2020: 1267), this type of training methodology gives students first-hand experience and exposure to what an entrepreneur is and the chance

to be introduced to the local business environment as a potential future entrepreneur. Establishing “socialisation” seminars is another way of disseminating entrepreneurship information with the help of local entrepreneurs. This offers an ideal setting for them to be invited to the business community, together with other essential stakeholders. These gatherings allow participants to become acquainted with people in the local business sector, to make key contacts, to address any uncertainties they may have, and to re-energise their motivation (Boldureanu *et al.* 2020: 1267).

According to Kisubi, Korir and Bonuke (2021: 15), incorporating case studies of local entrepreneurs into the classroom can be informative in terms of the viability of entrepreneurship as a career option. This reinforces findings by Urbano *et al.* (2017: 271), stating that HEIs provide an ideal setting for linking persons with entrepreneurial expertise with those who wish to start a new business. Furthermore, seminars, corporate meetings, and labs are settings where potential role models and university students can engage with one another (Guerrero and Urbano 2013; Karimi, Farani and Motaghed 2017).

The findings of Karimi *et al.* (2017) suggest that as part of their curriculum, entrepreneurship educational programmes should include contact with entrepreneurial role models, since these role models can significantly enhance student confidence in their abilities to start a business and develop their attitude towards entrepreneurship. For the long term, Urbano *et al.* (2017: 271) advocated creating scenarios in which experienced entrepreneurs connect with future entrepreneurs in order to improve entrepreneurial attitudes and motivations among university students.

The South African education system has, for many years, failed to develop entrepreneurial skills and attitudes amongst learners (Naong 2019: 277). Naude (2017: 10) stressed the fact that effective entrepreneurship education must improve the skills and knowledge base for entrepreneurship and have a considerable positive impact on four main areas key to entrepreneurship:

- Students’ self-confidence about their ability to start a business
- Students’ understanding of financial and business issues
- Students’ desire to start their own business
- Students’ desire to undertake higher education

Therefore, the educational system is critical in developing entrepreneurial abilities and shaping attitudes towards entrepreneurship. Effective teaching must develop knowledge and skills in areas more specifically related to business, such as entrepreneurship education, economics, and accounting, depending on the grade level and subject chosen (Solomon, Alabduljader and Ramani 2019).

According to Urbano *et al.* (2017: 271), there is a positive and statistically significant link between annual university-wide research and development (R&D) investment and spin-off activities. Academic entrepreneurship necessitates the use of venture capital, loans, and R&D subsidies or funding techniques, among other factors, the majority of which are obtained through university channels.

According to Guerrero, Cunningham and Urbano (2015), having support measures in place, such as university incubators and other relevant centres and procedures for new business development, is critical for creating an enabling environment for students to start businesses. As host to centres of small university enterprises, research facilities, research groups, incubators, and technology transfer offices (TTO), the university must establish these mechanisms and tools to support new internal and external venture creations. These support systems help to mitigate the difficult conflict of interest that comes with being a student and an entrepreneur. Moreover, these approaches enable students to establish a connection with external agents and business markets. In the case of Canada, university researchers have shown that methods for knowledge commercialisation are contributing factors in the creation of new venture spin-offs (Sadek 2014: 19).

According to Zondo (2016: 30), entrepreneurship education can aid in the formation of successful businesses. Therefore, effective entrepreneurial education delivery strategies should be presented and implemented in educational institutions. This also necessitates more effective government assistance programmes (Mbhele 2016: 35).

Governments can assist young entrepreneurs by providing a supportive infrastructure that can help them manage challenges such as a lack of networks, skills, building financing, and start-up assistance. Important processes in this category take into account supporting young entrepreneur networks and business incubators. In addition to start-up financing, business incubators offer a physical work site where start-up entrepreneurs come together and, in most cases, also source complementary support as well as training, mentoring, advice, and access to an experienced network of experts (Sadek 2014; Naude 2017).

Often, programmes focus on ensuring that young people have good access to an incubator assisting entrepreneurs in general, while many universities have youth-specific incubators for their students and graduates. Undoubtedly, studies have shown that policymakers can see great success in improving start-up outcomes by improving the entrepreneurship support infrastructure (Oyelola *et al*. 2014; Naude 2017).

According to Musetsho and Lethoko (2017) and Herrington (2017), the following are recommendations for the purpose of grooming students with a high level of entrepreneurial intention:

- The foundation of learning should be an effective and well-structured work-integrated learning (WIL)-based entrepreneurship training programme that includes both classroom and field experience.
- At best, the existing structures (role players) and resources should be decentralised and not outcome oriented. A paradigm shift, particularly among existing entrepreneurship curriculum writers and educators, is imperative. Diverse efforts from various structures must be coordinated and redirected towards the development of entrepreneurs.
- Entrepreneurship programmes should equip students to start a business within a specified timeframe, either during or after their studies. A student's ability to reach this objective should be used to determine whether they should be accepted into the programme.
- Student entrepreneurs should have access to incubation facilities, such as food kiosks and stationery shops (which are already accessible on many campuses).

Failure is an inevitable element of entrepreneurship, and all stakeholders should understand this. As part of effective learning, the learner should be given the opportunity to "attempt and fail" in order to face "intelligent failures". Herrington (2017: 46) pointed out that young people should be encouraged to establish their own businesses and be educated that making errors is an important part of the learning process. It is for this reason that a financial assistance system that allows for trial and error should be devised for entrepreneurs who are just starting out in business to help entrepreneurs overcome their lack of relevant skills, work-related proficiencies, and experience (Musetsho and Letheko 2017).

According to Byabashaija, Katono and Isabalija (2010) and Tariq (2015), if programmes and policies are to be designed to improve entrepreneurial behaviour, then a profound understanding of the elements that influence and shape an individual's intentions to go into entrepreneurship is key. According to the above-mentioned studies, a person's attitude, norms, and perception of control over the behaviour in which they would like to partake influence their intentions. According to Ajzen's theory, the creation of intention is preceded by three variables: (1) attitude towards a given behaviour, (2) subjective norms, and (3) perception of self-control.

Over recent years, many countries from emerging economies have experienced several economic challenges, including a large number of university graduates being unable to obtain government or private sector employment. Over the past decade, Iran has shown increasing interest in a variety of entrepreneurship fields (in higher education, policymaking, and business) as a key solution to the country's unemployment and economic problems (Karimi *et al.* 2010: 60). Furthermore, the government is devoting more resources than ever before to promoting and encouraging entrepreneurship and

innovation. Measures and methods to promote entrepreneurship in the public and commercial sectors, as well as in universities, have been proposed.

As how to start and manage a new business: to accomplish this, a variety of programmes and techniques were considered, including the establishment of entrepreneurship centres and the implementation of “fundamentals of entrepreneurship” courses in undergraduate education (Karimi *et al*. 2016; Naude 2017). For the final 2 years of university, students are taught the “Fundamentals of Entrepreneurship” as an optional or required subject. The training seeks to enhance university graduates’ entrepreneurial expertise and inspire them to create jobs rather than look for them (Karimi *et al*. 2016: 40).

Educating for, about, in, or via entrepreneurship, as defined by some researchers, is a more concise classification of these aims (Bell 2016; Neck and Corbett 2018). It is claimed here that objectives are confined in terms of what instructors and/or students want to achieve, and, therefore, are a constraint for educational strategy selections. To educate for entrepreneurship is to cultivate an entrepreneur or someone who intends to start a new business.

According to Tariq (2015) and Guerrero, Cunningham and Urbano (2015), Education for Entrepreneurship (EEP) is a programme that attempts to involve young people in the process of starting a business by providing them with the required skills and assistance. This goal will also include initiatives to raise awareness among other stakeholders, such as policymakers, financiers, and the general public. Finally, some academics have included the ability to train individuals in entrepreneurship as a goal. Entrepreneurship education is seen to focus on helping people become more entrepreneurial (creative) in their current businesses or workplaces. Furthermore, this goal strives to prepare people to take more responsibility and control over their academic and professional lives (Lackeus 2015: 45).

According to the American Institute of Entrepreneurial Studies (AIES), a well-designed entrepreneurship education curriculum emphasises the importance of incorporating impact evaluation or gauging mechanisms into current course offerings, along with those of students who graduate and go into business for themselves (Naude 2017: 225). As a result, the curriculum should be designed in such a manner that it facilitates the achievement of acceptable and attainable objectives while also allowing for the development of new content and value qualities. Such a curriculum classification necessitates the creation of texts and programmes that allow for the introduction of the enterprising concept and also the provision of hands-on experience and working models for students to develop skills (Mbhele 2017: 35). Moreover, a successful entrepreneurship education programme focuses on the specific variables that may influence students’ inclination towards start-up activities (Naong 2019: 225). According to Bell (2020) and

Bell (2016), these include identifying the theory-based capabilities that need to be grasped, the motivational value, and a mind-set that stresses action learning.

Although Naong (2019: 225) emphasised that a more refined approach, that acknowledges a broad educational, philosophical, and conceptual base, is required to develop and support successful entrepreneurship education, educators must be aware of the various educational philosophies and theories that can be used to support entrepreneurship education pedagogy and practice. Furthermore, an educational philosophical approach that is coherent informs, guides, and motivates educator practices. This should support the teaching goals and expectations, as well as the responsibilities that students and educators have in the learning process (Bell 2016; Musetsho and Lethoko 2017). According to Bell (2016) and O'Brien *et al.* (2019), by having an in-depth understanding of the various educational philosophies and theories, entrepreneurship educators may optimise the effectiveness of their delivery. Educators' philosophical approach will guide and drive their educational practice, even if they are not always conscious of it. It will affect what they teach as well as how they teach it.

Theory focusing on the contextual or institutional factors as determinants for entrepreneurship makes reference to the different factors perceived by society to lead human behaviour. Musetsho and Lethoko (2017) concluded that a main institutional factor that may well affect entrepreneurship is the level of educational capital of a country, that is, the level of educational opportunities available to the citizens. It is understood that the institutional environment can develop and boost individuals' competences and skills (Neck and Corbett 2018: 41). Entrepreneurs are likely to have higher levels of "perceived feasibility" and "self-efficacy", which is are ascribed to their training and education (Franco 2010; Ndofirepi and Rambe 2016).

Empirical studies have shown that a higher rate of education leads to a higher entrepreneurship rate (Rambe and Ndofirepi 2017: 731). The term *educational enterprise* refers to the use of new venture creations to help students attain a variety of both business understanding and skills or competences. However, Naong (2019) and Naude (2019) provided another term, *educating through enterprise*, which is more of a teaching approach in educating for entrepreneurship than an objective in itself.

According to Rodriguez and Culkin (2018: 405), there are three types of entrepreneurship education, namely contextual application, state-of-being, and the creation of an entrepreneurial climate and support structure. These different types of entrepreneurship education can be measured in several ways, including the affective, behavioural, cognitive, and skills-based approaches. It could be argued that at the start of a programme, students are likely to be given a general understanding of entrepreneurship, and as the programme progresses, students are introduced to more advanced learning activities aimed at improving their innovativeness and preparing them with opportunity

discovery skills, which is also expected of those who are educated in entrepreneurship (Naong 2019: 225).

Regardless of the imprecise distinctions between these objectives, educators must have a predetermined set of objectives for their unique educational programmes. This could help them determine the impact of their programmes long in advance, giving them an advantage in identifying suitable teaching approaches and fine-tuning other determining influences (Mwasalwiba 2010; Bell 2016). In addition, Mwasalwiba (2010) and Fredi (2017) stressed that the growing literature on entrepreneurship education maintains that a different strategy is needed, one that departs from the typical lecture-centred, passive learning approach employed in traditional business disciplines, such as management and marketing. To foster experiential learning, problem solving, and creativity, the new method should be action oriented.

The fundamental assumption is that for better and effective learning to take place, experiences must occur. According to Naong (2019: 225), entrepreneurial learning is a practical path of action in which knowledge grows while the student is experiencing, reflecting, thinking, and doing. WIL is a well-coordinated educational method that gradually integrates academic study with learning through successful work experience in an area related to a student's academic or professional goals, not as an afterthought, but as a core component of the educational process.

Entrepreneurs must not only develop an entrepreneurial intention but also be successful at recognising opportunities that others ignore or fail to notice, and then they must make the most of these opportunities in a timely and effective manner in order to be successful in starting and operating new businesses. As a result, improving opportunity recognition abilities is an important part of the entrepreneurial process, and entrepreneurship education should focus on this ability (Karimi *et al.* 2016: 35).

Opportunity identification can and should be taught, according to the literature on entrepreneurship education, and it should be a significant factor in programmes aimed at developing future entrepreneurs (Saks and Gaglio 2002; Neck and Corbett 2018). According to Turner and Gianiodis (2018), the entrepreneurship classroom is the correct and proper environment to nurture the skills needed to create opportunity identification proficiency. Despite the expanding literature on opportunity identification and its importance in the entrepreneurship process, research on the benefits of education for students' capacity to recognise business possibilities is lacking.

According to Ndedi (2013), Mbhele (2016), and Zondo (2016), entrepreneurship education and business incubators must be introduced at all levels of study and across all academic disciplines in HEIs. These entrepreneurship courses focus on the management of creativity and innovation, increasing creativity and innovation excellence

and the capacity to recognise market opportunities based on fresh ideas (Ndedi 2013: 463). According to Karimi *et al.* (2016: 187), research findings have indicated that universities can develop students' entrepreneurial intentions through non-compulsory, rather than compulsory, entrepreneurship educational programmes. Therefore, all students, not only those interested in becoming entrepreneurs, should be able to participate in entrepreneurship educational programmes. Students who attend these programmes have a better understanding of entrepreneurship as a career option and a more realistic perspective of themselves and what it being an entrepreneur entails (Schmidt and Molkentin 2015: 157).

According to Bell (2016) and Naong (2019), entrepreneurs and potential entrepreneurs often learn much through networking with other successful entrepreneurs, where they are allowed to share and exchange ideas and social and business contacts. However, some tertiary institutions have failed to involve successful entrepreneurs or role models in the syllabus. According to Nanda and Sorensen (2010) and Naude (2017), experienced entrepreneur-mentors can assist their mentees to understand that a failed business venture is not the end of their career, but rather an essential part of their entrepreneurial training. Mentorship from an entrepreneur may boost students' self-esteem and inspire them to pursue their dreams. Learning first-hand from its owner how a business was started may be inspirational for students and can be more beneficial than being mentored by an employee or an investor. Even hearing stories from entrepreneurs about their failed business ventures may encourage learners, especially if the business concept was "crazy" or "risky" and the entrepreneur moved on to try other fascinating enterprises until they became successful.

Entrepreneurial mentors, particularly serial entrepreneurs who have failed in the past, can assist their mentees in reducing their fear of failure by assisting them to make a more realistic assessment of their career options in the case of venture failures (Bell 2016; O'Brien *et al.* 2019). According to Urbano and Guerrero (2013), role models are important socialising agents who affect entrepreneurial aspirations, have an impact on a person's feasibility and willingness to start a new business, and promote spin-off development. For instance, the Massachusetts Institute of Technology (MIT) has strengthened rigorous entrepreneurship programmes by enlisting faculty role models and inspiring the organisation's culture to ensure that students and faculties have a significant entrepreneurial impact.

Universities in Europe have adopted entrepreneurship education as a means of assisting in the formation of new businesses. Entrepreneurship education should provide students with relevant experience and assist them to develop self-esteem. As a result, a lack of these characteristics has been identified as one of the reasons why fresh graduates do not pursue entrepreneurship after graduation (Sikalieh and Otieno 2011; Lackeus 2015). Since entrepreneurship education stimulates the creation of new ventures by students

after graduation, entrepreneurship education and training are used in this way to build a set of skills in both formal and informal ways. As a result, education entails a process guided by much more formal frameworks as well as experiential or hands-on learning. To build competence in entrepreneurs, which is a very important qualification necessary for young people as they join society, changes in educational approaches are essential (Radipere 2012; Naude 2017).

According to Kirby and Ibrahim (2016: 98), incentives and/or payments can help counterbalance the expenses associated with academic entrepreneurs' commercialisation efforts. Additionally, when researchers are supported by matching financial resources provided by the institution or outside sources, the incentives to create spin-offs rise. Offering an incentive to a university community during an entrepreneurial transition is a successful technique in this respect.

Therefore, academic entrepreneurship as a career path for academics should be promoted by creating incentives for academics to become involved in entrepreneurship activities. Furthermore, academic entrepreneurship is a phenomenon that occurs in entrepreneurial institutions and includes university professors, technologists, or students creating new business ventures (Urbano and Guerrero 2013; Urban and Chantson 2019).

2.11 Conclusion

There is a wide range of literature that substantiates that there is a positive relationship between entrepreneurship and economic development, even though further research has underlined the bureaucratic challenges and technical difficulties and expenses in administration policies and regulations that greatly affect entrepreneurial activity in most countries. In the South African context, in order to deal with the current social ills of poverty and ever-increasing unemployment, particularly amongst school leavers and graduates, entrepreneurship must be the way to follow. If the country intends to champion ways to combat these social ills, academia, industry, and the government need to work towards a common goal, which is to increase the entrepreneurial activity and employability of graduates and school leavers. Academic institutions must ensure that they inculcate a culture of entrepreneurship as a career option amongst their students as early as the primary education level and up to the tertiary education level. It is imperative that the teaching methods and the content in entrepreneurship educational curricula enable the institutions to obtain the much-anticipated results of producing more entrepreneurs and not merely entrepreneurship graduates or job seekers.

Tertiary institutions must be a breeding ground for entrepreneurial talent, and this can only be achieved if the institutions create an enabling environment for entrepreneurship development.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The previous chapter covered an in-depth understanding of literature collected from different sources to lay a foundation and support the research study. This chapter details the research methodology for this study, covering particularly how the data has been collected and analysed. The research methodology also covers the target population, the chosen sampling methods, and the sample size for this study. The data collection instruments, pilot testing initiatives, and finally, the ethical considerations are also covered in this chapter.

3.1.1. Evaluative Research

In this study evaluative research is seen as a disciplined systematic inquiry that is carried out to arrive at an appraisal of the programme as well as a practice that occurs in the entrepreneurial studies programme. While it is not intended to be a longitudinal study, the perceptions of both the academic staff and students in the programme will enable the researcher to draw conclusions and evaluate the impact of the programme

3.2 Research Design

According to Zikmund *et al.* (2013: 64), the research design is a blueprint that lays down the methods and procedures for gathering and analysing the required data. Sekaran and Bougie (2016: 95) supported the views of Zikmund *et al.* (2013: 64), stating that “a research design is a blueprint or plan for the collection, measurement and analysis of data, created to answer your research questions”. According to Mudaly (2013), the research design is a framework or blueprint for conducting a research study and laying out the methods for gathering the information needed to answer the research question. A mixed methods approach was selected for this study.

Investigating the impact of entrepreneurship education in fostering an entrepreneurial spirit and drive amongst students at DUT would lead to a better collection of data. The collecting and use of both qualitative and quantitative data in one study, as well as the combination of these data at various phases of the research process, are all part of the mixed methods research methodology (Soorkrajh 2014). Caswell and Clarke (2011) described mixed methods research as follows:

> [I]t emphasises … gathering, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that

the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone.

3.2.1 Motivation for Mixed Methods Research

Mixed methods research was used in this study for the following reasons:

- Mixed methods research can lead to a range of positive outcomes, such as an improved understanding of what and who the research is for and the formalisation of research governance and ethics procedures.
- There is availability and ease of access to new technologies used to analyse mixed methods research (Soorkrajh 2014).

The qualitative data was gathered through in-depth interviews with the lecturers and other interested academics in the field of entrepreneurial studies, while the quantitative data was collected through questionnaires completed by students at the Diploma and B-Tech levels. The study was conducted at DUT with the main participating faculty being that of Management Sciences. Other departments within the university offering entrepreneurship education were also included in the survey. The usefulness of mixed methods for this study is that the data gathered through the questionnaire and the in-depth interviews may be triangulated, thereby enhancing the reliability and validity of the study.

3.2.2 Research Questions

The data gathered led towards addressing the key research questions of this study. The following research questions were raised:

- Is the current entrepreneurial programme curriculum offered at DUT in need of any change, including the learning methodology?
- Does DUT's entrepreneurship education programme help to develop students' entrepreneurial skills and abilities?
- Do the current methods of teaching entrepreneurship education at DUT help trigger business start-ups amongst students?
- What are the perceptions of the students at DUT towards entrepreneurship as a career after obtaining the necessary skills and knowledge through the programme?

3.3 Target Population

According to Sekaran and Bougie (2013), a target population is the complete group of people or objects from which the researcher intends to take a sample for the research study. The target population of the study consisted of DUT students registered for the entrepreneurship module across various departments at DUT, many of whom fall under the Faculty of Management Sciences. The target population consisted of 932 students registered for entrepreneurship education at DUT in 2017. Lecturers within the respective

departments were also part of the study as the target population, given that they are the custodians of the modules through content delivery to the students, however 3 from the Entrepreneurial Studies Department were specifically targeted.

3.4 Sampling Method

A sampling method is, according to Limber (2011: 13), a system of extracting a smaller predetermined number from the larger population. Welman and Kruger (1999: 47) made a distinction between the probability and non-probability sampling method when they asserted that, in the probability sampling method, every unit or element in the sample population has an equal chance of selection, while in the non-probability sampling method, the units or elements of the sample population do not have an equal chance of being selected.

This study used a purposive sampling method. According to Gill *et al.* (2008), purposive sampling gives the researcher the opportunity to cut time and costs by selecting a target population that serves the specific needs of the researcher. For this study, the population was selected according to the faculty and levels of study. In this study, the focus was primarily on the third-year and B-Tech students who had already completed their entrepreneurship education. Depending on the faculty, some students do entrepreneurship at the first- or second-year level. The students from the Department of Management and Entrepreneurial Studies were not selected for this study, given that, in this department, entrepreneurship was only introduced in 2018, along with the introduction of a new qualification**.**

3.5 Sample Size

The study made use of questionnaires and the conducting of individual interviews. A sample size of 274 students was drawn from a population size of 932 students registered for entrepreneurship education at DUT in 2017. Sekaran and Bougie (2016) pointed out that when determining a sample size in a population of 900 to 950, one's sample units must number at least 274. A further three academic staff members within the Department of Entrepreneurial Studies were included in the sample. Survey questionnaires were handed out to students, and the researcher personally administered them.

According to Zikmund *et al.* (2013: 207), a personal interview is a type of direct contact in which the interviewer asks respondents questions in a face-to-face manner. In line with this view, personal interviews were conducted with three academic staff members in the Faculty of Management Sciences, namely, two entrepreneurship lecturers and the entrepreneurial studies co-ordinator.

3.6 Data Collection Methods

The qualitative data was collected through in-depth interviews with lecturers and other interested academics on the subject of entrepreneurial studies, while the quantitative data was gathered through questionnaires filled out by Diploma and B-Tech students. The research was carried out at DUT, with the Management Sciences faculty playing a key role. Other departments within the university that provide entrepreneurial education were also surveyed. The examination was intended to obtain an in-depth understanding of how DUT bridges the gap of producing graduate entrepreneurs who prefer to be self-employed.

3.7 Measuring Instruments

A questionnaire was developed for this study to obtain the necessary information, and a set of questions was prepared for the individual interviews. These are discussed further below.

3.7.1 In-Depth Interviews

Personal interviews were conducted with academic staff members in the Department of Management and Entrepreneurial Studies. According to Welman and Kruger (1999: 169), an interview is a verbal communication between a researcher and a participant (or participants) of a survey, and it is either structured or unstructured. The study used a structured interview process to gather the relevant information. Yin (2010: 134) stated that a structured interview is a predetermined set of questions directed at a participant of a survey by a researcher. For this study, the key questions and broad areas covered in the interviews were:

- What are the objectives and the anticipated outcomes of entrepreneurship education as a field of study?
- What skills and capabilities do you want your students to acquire from this module?
- As compared to other institutions that offer entrepreneurship as a 3-year course, as opposed to a semester module, in your view, does the semester-module offer suffice in equipping the student with the necessary competence?
- What is it that makes DUT's entrepreneurship education programme/course different from that of other institutions and how does that contribute to real student innovation and entrepreneurial inclination?
- What strategies are used in ensuring advanced ways of teaching entrepreneurship and retaining the demanding academic standards of evaluation?
- How does DUT go about ensuring and designing assessments which allow students to demonstrate their achievement of the learning outcomes?
- In terms of getting the anticipated results, are there any challenges associated with teaching entrepreneurship?

- What are some of the perceptions that students have about entrepreneurship as a career option? How is your entrepreneurship programme structured to change these perceptions?
- In terms of getting the anticipated results, are there any challenges associated with teaching entrepreneurship?
- Does DUT assess the impact of entrepreneurship education on their students, and what indicators are used?

The following subsection examines the development of the questionnaire.

3.7.2 Questionnaires

The most appropriate measuring instrument is the survey questionnaire. These are used to obtain information from the respondents about biographical particulars (age, educational qualifications, etc.), typical behaviours (what they like), and opinions and attitudes. The questionnaire is cost-effective to administer and makes it easy to reach a large group to be surveyed. This particular study used a survey questionnaire as a measuring instrument in order to maintain the accuracy of the study findings and attributes. The questionnaire that was used in this study had two sections, which consisted of closed-ended questions. Each of the sections was grouped according to themes. The first section contained the biographical details of the respondents and covered the following: age, gender, and educational qualifications. The second section covered the main themes of the study. These themes are as follows:

- The current state of entrepreneurship education
- The effectiveness of entrepreneurship education at DUT
- The benefits and challenges associated with entrepreneurship
- The student's perception towards entrepreneurship as a career

3.7.3 Documentary Review

According to Mogalakwe (2006), the use of a documentary review refers to the scrutiny of documents that contain information about the phenomenon that one wishes to study. In general, these are published or recorded documents of knowledge. This study used different sources of information to generate the questionnaire statements, namely, journals, online journals, newspapers, and global entrepreneurship management reports.

3.7.4 Reliability and Validity

According to Sekaran (2006: 271), it is important that the measuring instruments used ensure some measure of reliability and validity. Validity is concerned with whether the correct concept has been measured, and reliability is concerned with stability and the consistency of measurement. The content validity was considered in this study since it is

interested in evaluating the impact of entrepreneurship programmes on students' future career decisions at DUT. Validity and reliability matters were addressed through a pilot study. Pilot testing is a procedure in which the research design for a prospective research study is developed and then tested in order to gather information that will help with the main study (Wiersma and Jurs 2005: 491).

The questionnaires and interviews for this study were pilot tested. The tested questionnaires were distributed to 30 students from the Faculty of Applied Sciences who were interested in the research topic. The questions were subsequently modified, as this was found to be necessary from the results of the pilot testing. The degree to which acquired scores may be generalised to other measuring occasions, measurement/test forms, and measurement/test administrators is described as reliability (Welman and Kruger 1999: 142). The conclusion about the study's reliability was drawn based on the students' responses. The Cronbach test was conducted.

3.8 Data Analysis

Marshall and Rossman (2007: 4) defined coding as an interpretative approach that aims to both organise data and offer a way to incorporate interpretations into quantitative procedures. Both descriptive and inferential statistics were generated. Thus, in this study, the qualitative data was analysed using the content analysis method, where the emerging themes from the raw data were grouped and later developed in the discussion section. The quantitative data was analysed using SPSS, which is in agreement with the literature review. The forms of descriptive statistics, charts, frequencies, and inferential statistics were used.

3.9 Ethical Considerations

According to McCauley (2003: 3), ethical considerations and accountability are important at all stages of the research process, from the study concept to how respondents are enrolled, the treatment they receive throughout the process, and the outcomes of their participation. The following ethical issues were considered in this study:

- Participation in this study was voluntary and in no way forced upon any of the respondents.
- A letter of information, as well as the requirements for the respondents' participation, was made available to the respondents.
- The language and instructions used in the questionnaire were simple, and no industry terminology or jargon were used.
- Letters of consent received from the organisation to conduct this study were e-mailed to all respondents requesting such information.

- The respondents were advised that their information would be kept confidential and only used for the research purposes. Further individual names or contact details were not required (complete anonymity) other than the mailing addresses used to send the questionnaire.
- No harm or unconsented inconveniences were caused to the respondents involved in this study.

3.10 Conclusion

This chapter covered the methodology used to conduct this research study in the most systematic way. It illustrated all processes of consideration as well as the implementation methods used, covering aspects of the research design, target population, sampling methods, measuring instruments used, data analysis, validity and reliability, and the ethical considerations of the study. The following chapter presents, interprets, and discusses the data obtained.

CHAPTER FOUR

RESULTS AND COMMENTARY

4.1 Introduction

This chapter presents the results and discusses the findings obtained from the data collected for this study. The questionnaire and interviews were the primary tool for data collection. The data collected from the responses was analysed with SPSS (version 25®) in relation to the key objectives, that is, to assess the impact of an entrepreneurship programme or courses on students at DUT and whether they affect their intentions, upon graduation, regarding opening their own businesses as compared to seeking employment. The results are presented by means of descriptive statistics in the form of graphs, cross tabulations, and other figures. The secondary objectives, in support of the main objective of this research study, were:

1. To examine the current state of entrepreneurship education at DUT.
2. To examine the benefits and challenges associated with entrepreneurship education at DUT.
3. To evaluate the perceptions of students at DUT towards entrepreneurship as a career of choice.

4.2 Data Collection

The researcher distributed a total of 280 questionnaires, with a return rate of 274 questionnaires. The other six were incorrectly written. As a result, they were categorised as spoiled questionnaires, unable to provide valid data for this research. As a result, those six questionnaires had to be excluded, leaving the remaining 274 questionnaires used in the quantitative data collection for this study to be considered. As part of the qualitative data collection, this study employed a mixed methods technique to gather information. Three senior teaching staff members of DUT were interviewed in in-depth, semi-structured interviews. The results of the data analysis were provided. The themes and sub-themes of the study are presented in Table 4.1.

Table 4.1: Themes and sub-themes of the study

Theme	Sub-theme
1. Structure of entrepreneurship programme at DUT	• Objectives of the programme • Anticipated skills for entrepreneurship module
2. Strategies adopted in entrepreneurship programme	• Evaluating the assessment method from learning outcomes

3. Comparing the DUT entrepreneurship programme and that of another institution	• Competency in the skills acquired • Method of delivering entrepreneurship
4. Students' perceptions of the DUT entrepreneurship programme	• Challenges of teaching entrepreneurship programme

The themes in Table 4.1 were identified in line with the research questions as follows:

- What are the objectives and the anticipated outcomes of entrepreneurship education as a field of study?
- What skills and capabilities do you want your students to acquire from this module?
- As compared to other institutions that offer entrepreneurship as a 3-year course, as opposed to a semester module, in your view, does the semester-module offer suffice in equipping the student with the necessary competence?
- What strategies are used in ensuring advanced ways of teaching entrepreneurship and retaining the demanding academic standards of evaluation?
- How does DUT go about ensuring and designing assessments which allow students to demonstrate their achievement of the learning outcomes?
- In terms of getting the anticipated results, are there any challenges associated with teaching entrepreneurship?
- What are some of the perceptions that students have about entrepreneurship as a career option? How is your entrepreneurship programme structured to change these perceptions?
- Does DUT assess the impact of entrepreneurship education on their students, and what indicators are used?

4.3 Biographical Information

This section examines the composition and critical variables of the participants who responded to the questionnaire.

4.3.1 Gender and Age Distribution

Table 4.2 presents the gender distribution of learners by age group. The Fisher exact tests showed that there were significant differences in gender with respect to the age distribution of the participants ($p<0.05$). As shown in Table 4.2, most of the participants in the survey were females (57.7%), while the males constituted 42.3%. In terms of their age distribution, the proportion of females (29.4%) within the age group of 18–20 years was higher than that of the males (14.5%). Similarly, the females were marginally greater in number within the age group of 20–30 years (28.2%) when compared against their male counterparts (27.8%). Overall, most participants (56.0%) were within the age group of 20–30 years. This may suggest that the group taking the entrepreneurial course is a

little more mature, and it may indicate a more careful thought process when selecting such a course and an intent to possibly start their own businesses.

Table 4.2: Gender distribution by age group

			Age group		Total
			18–20 years	20–30 years	
Sex	Male	Count	36	69	105
		% of Total	14.5%	27.8%	42.3%
	Female	Count	73	70	143
		% of Total	29.4%	28.2%	57.7%
Total		Count	109	139	248
		% of Total	44.0%	56.0%	100.0%

Note: Fisher Exact test = 0.006

4.3.2 Course of Study

The participants' courses of study are presented in Table 4.3. It can be observed that the participants were drawn from various National Diploma (ND) qualifications, while there were fewer participants who were pursuing a degree qualification. Given that the study was conducted at DUT, it is in line with the wider student population who study initially for diploma qualifications. Amongst the ND qualifications, participants enrolled in ND Taxation formed the majority (22.2%).

Table 4.3: Participants' course of study

Course of Study	Frequency	Percent
ND Taxation	55	22.2
BHSC Clinical Tech	24	9.7
ND Fashion Design	14	5.6
ND Translation	4	1.6
ND Financial Accounting	33	13.3
ND Analytical Chemistry	29	11.7
ND Cost Mgt & Accounting	1	.4
ND Jewellery Design	8	3.2
ND Interior Design	5	2.0
ND Clothing Mgt	17	6.9
ND Fine Art	9	3.6
ND Photography	14	5.6
ND Accounting	35	14.1
Total	248	100.0

4.3.3 Level of Study

The participants' level of study is given in Table 4.4. The majority of the participants (58.5%) were in their second year, followed by those in their third year (39.9%), while only one student (0.4%) was enrolled in a B-Tech qualification.

Table 4.4: Participants' level of study

Level	Frequency	Percent
2nd Year	145	58.5
3rd Year	99	39.9
4th Year	3	1.2
B-Tech	1	.4
Total	248	100.0

4.4 Reliability: Research Instrument

Before addressing the main findings of this study, the reliability of the study instrument is examined. Reliability is computed by taking several measurements on the same subjects. Notably, a reliability coefficient of 0.70 or higher is considered as "acceptable". Table 4.5 reflects the Cronbach's alpha score for all the items that constituted the questionnaire.

Table 4.5: Cronbach's alpha

Questionnaire item	Number of Items	Cronbach's Alpha
Entrepreneurship education	5	0.673
Approach to teaching	6	0.297
Inclusion of business in education	5	0.703

It can be gleaned from Table 4.5 that the construct measuring entrepreneurship education (α=0.673) had a value slightly below the recommended 0.70 score. Garson (2011), Malhotra (2004), and Simon (2004) argued that reliability values between 0.6 and 0.7 are acceptable for explorative studies. Hence, it can be inferred that the questionnaire had acceptable (i.e., high) reliability values. The constructs that measure the approach to teaching, however, had a value (α=0.297) far below the 0.70 score. This may be attributed to the understanding and different interpretation of the construct by the participants. On the other hand, the construct that measures the inclusion of business in education was in accordance with the recommended value (α=0.703). This indicates a degree of consistency in the participants' scoring pattern.

Next, the study gives detailed attention to examining the data gathered against the various study objectives as well as the themes undergirding this study.

4.5 The Offering of Entrepreneurship Programmes

The researcher needed to have a reasonable picture of how the respondents viewed an entrepreneurship programme being offered at a university. The Cochran (Q) test in Table 4.6 revealed that a significant number of the participants (198, 79.8%) believed that the aim of offering entrepreneurship at DUT was to equip students with the necessary business skills required when starting and growing a business – Q (2) = 172.777; p<0.001. Further details regarding the aims of offering entrepreneurship programmes at DUT are also provided in Table 4.6.

Table 4.6: Aim of offering entrepreneurship programmes at DUT

Understanding of entrepreneurship aim at DUT	N	Value		Mean	Std. Deviation	Cochran's Q	Sig
		Yes	No				
To allow students to become better employees that have good business acumen	248	45	205	1.83	0.469	172.777	0.000
To make students realise that entrepreneurship can be made a career of choice	248	84	164	1.66	0.467		
To equip students with the necessary business skills required when starting and growing a business	248	198	50	1.20	0.410		

4.6 Importance of Entrepreneurship Education

The perceptions of the participants regarding the importance of entrepreneurship education were considered. The gathering of this data is important from the perspective that entrepreneurs may be seen as gifted people who are not necessarily reliant on some form of education in entrepreneurship to lead them towards having an interest in starting their own business. The results are first presented using summarised percentages for the variables that constitute each section. The results are then further analysed according to the importance of the statements. To determine whether the scoring patterns per statement were significantly different per option, one sample t-test was done.

As indicated by the level of significance, the one sample t-test revealed large statistically significant differences with regard to each of the statements highlighted in Table 4.7 ($p<0.001$). In terms of statement Q5a, “Entrepreneurship education builds up an understanding among students about what entrepreneurship involves, given that it is very crucial and needed for all segments of society”, a significant majority (95.1%) were in agreement (strongly agree=39.5%; agree=55.6%). This tends to indicate that the participants certainly viewed entrepreneurship as a crucial need within society.

Regarding statement Q5b, “An enterprise education is about grooming individuals for the business world by teaching students on how to take charge of their careers and personal lives”, a significant majority (90.2%) were in agreement (strongly agree=37.1%; agree=53.1%). This suggests that the participants viewed enterprise education as a tool to prepare students for the real world. Similarly, and with regard to statement Q5c, “Taking a programme in entrepreneurial studies has an effect on enhancing my future career direction towards self-employment and a chance to start my business”, a significant majority were in agreement (strongly agree=51.2%; agree=41.1%). This indicates that students who take entrepreneurial studies are more likely to have the need to become self-employed as an outcome.

Equally important, and in terms of statement Q5d, “Taking a course or a programme in entrepreneurial studies has improved my business acumen”, it emerged that the level of agreement (total of 85.6%; strongly agree=32.5%; agree=53.1%) was significantly higher than the level of disagreement (total of 14.4%; disagree=12.3%; strongly disagree=4.9%). This suggests that the participants were of the view that taking a course in entrepreneurial studies has an impact by improving their business acumen. Additionally, and in respect of statement Q5e, “With the skills I have obtained from the entrepreneurship programme, I want to start a business”, it emerged that the majority of the participants (82.7%) were in significant agreement (strongly agree=32.1%; agree=50.6%) as compared to 17.2% who were in disagreement (disagree=12.3%; strongly disagree=4.9%). This suggests that the participants were of the view that by taking an entrepreneurship course, they would obtain the relevant skills and knowledge to be in a position geared towards starting a business.

Table 4.7: Participants' perceptions of entrepreneurship education

	No	Likert scale				Mean	Std.	T-test value	*P*-value
		SA	A	D	SD				
Q5a	248	39.5%	55.6%	3.2%	1.6%	1.67	0.620	42.415	0.000
Q5b	245	37.1%	53.1%	9.4%	0.4%	1.73	0.641	42.267	0.000
Q5c	246	51.2%	41.1%	4.1%	3.7%	1.60	0.737	34.100	0.000
Q5d	243	32.5%	53.1%	12.8%	1.6%	1.84	0.702	40.729	0.000
Q5e	243	32.1%	50.6%	12.3%	4.9%	1.90	0.797	37.197	0.000
	Likert scale: SA=strongly agree; A=agree; D=disagree; SD=strongly disagree								

Employment Prospects

As mentioned earlier in this study, the successful conversion rate of those students who take up an entrepreneurship programme towards opening their own businesses remains relatively low. Hence, this section addresses the views of the participants regarding the prospects of being employed. As seen in Table 4.8, the one sample t-test indicates that the perceptions of the participants regarding statement Q6a, "I still want to be employed after graduating", were statistically different ($p<0.001$). It was gathered that a large proportion of the participants (85.0%) were in positive agreement (strongly agree=39.5%; agree=45.5%) while very few (15.0%) were in disagreement (disagree=10.7%; strongly disagree=4.3%) with the statement. In light of these significant differences in the participants' perceptions, it is sufficient to assume that most participants still want to be employed immediately after graduation as compared to beginning with the prospect of setting up and owning a business.

Although a significant majority of the participants (63.9%) were in agreement (strongly agree=22.3%; agree=41.6%) with statement Q6b, "I had no intentions of starting my own business, but now I want to start my own business after graduating" ($p<0.001$), 36.1% were in disagreement (strongly agree=34.4%; agree=48.0%). More so, when asked to indicate their level of agreement or disagreement with statement Q6c, "I prefer to be employed in an organisation that provides stable financial security than starting a business", the one-sample t-test revealed a significant difference in their perceptions. It was observed that more of the participants (55.9%) were in agreement (strongly agree=16.0%; agree=39.9%) when compared to 44.1% who were in disagreement (disagree=32.8%; strongly disagree=11.3%).

Overall, it would seem that students do have some ambivalence in respect of wishing to have a more stable paid job versus taking a risk that has a high level of uncertainty in pursuing an entrepreneurial career. These results highlight the view that students taking entrepreneurial courses prefer to be employed rather than start their own businesses. This may be attributed to the financial security that employment offers in contrast to the uncertainty of establishing and running a personal business, especially immediately after

graduation. Having observed this as per the data gathered, it is equally important to keep in mind that students do want to open their own business; there is a yearning for this. It may, therefore, be incumbent that entrepreneurial programmes are designed in such a way that will allow students to set up their businesses in parallel with their academic training.

Table 4.8: Participants' perceptions of employment prospects

	No	Likert scale				Mean	Std.	T-test value	*P*-value
		SA	A	D	SD				
Q6a	233	39.5%	45.5%	10.7%	4.3%	1.8	0.797	34.424	0.000
Q6b	233	22.3%	41.6%	34.8%	1.3%	2.15	0.776	42.290	0.000
Q6c	238	16.0%	39.9%	32.8%	11.3%	2.39	0.888	41.609	0.000
	Likert scale: SA=strongly agree; A=agree; D=disagree; SD=strongly disagree								

4.7 Entrepreneurship Teaching Methodologies and Approach

A critical element in entrepreneurship education is the teaching methodologies and approach. This ultimately impacts on whether there is a reasonable success rate with student entrepreneurs. The following question was used to elicit responses from the participants: "Do you see any challenges with the current methods of teaching entrepreneurship education that may restrict you from pursuing self-employment?" As evident in Figure 4.1, the majority of the respondents (197, 79.4%) claimed that they had seen no challenges with the current methods.

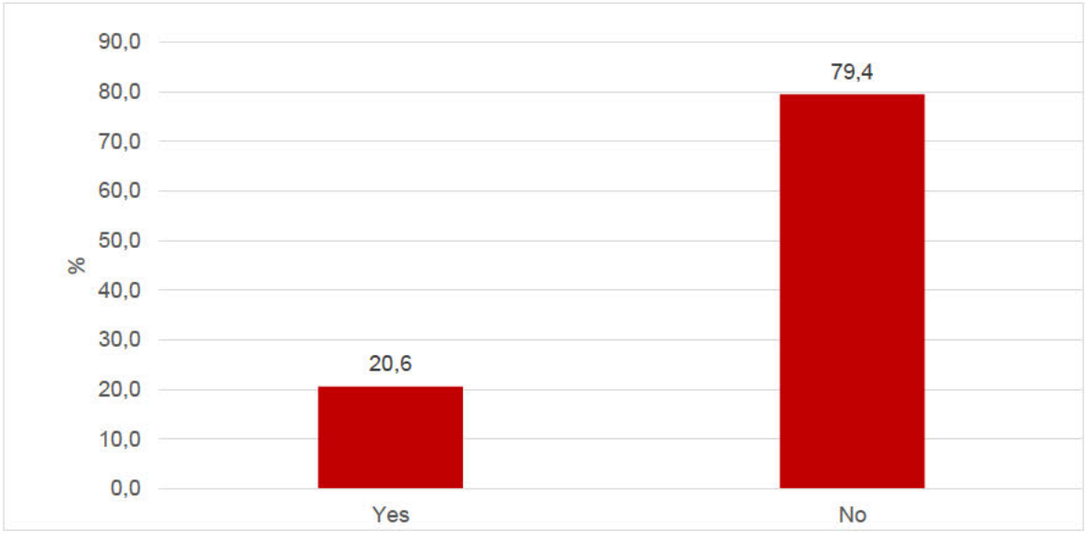

Figure 4.1: Do you see challenges with the current methods of teaching entrepreneurship?

Despite the above views, 20.6% found the current method of teaching entrepreneurship to be posing a challenge in their attempt to pursue self-employment. Amongst these categories (n=51), 35.3% lamented the absence of "practicals" in respect of the current teaching method, and 25.5% hinted at the dearth of financial content in the current

teaching programmes. Additionally, 25.5% pointed out that there is limited time available to cover the module content, while others alleged that the lecturers delivered the module poorly. These views are summarised in Table 4.9.

Table 4.9: Challenges faced by participants regarding current teaching methods

Lack of practicality 18 (35.3%)	Insufficient teaching time and poor teaching delivery 13 (25.5%)	Dearth of financial content 13 (25.5%)
1. As entrepreneurship students, we must be given the chance test our business ideas and be assessed based on the success of [our] start-up business. 2. Change the current teaching methods to have a more practical approach [to] teaching this subject. 3. Entrepreneurship education should also include practicals; by doing so, it enables us students to put into practice what we have learnt in class. 4. I still feel I am ill-prepared for the business world; I think there should be more practicals in teaching entrepreneurship education. 5. If only we did more practicals than theory, it would be much better. 6. It needs to be more practical in its teaching methods. 7. Needs a practical element. 8. The current methods don't work; there is just too much theory. We never get any mentorship or advice from business people, so that as aspiring entrepreneurs [we] will get the idea of what it takes to be entrepreneur. We also need more practical approach [to] learning entrepreneurship.	1. As much as we are taught about entrepreneurship and the business industry, I just wish that they can focus less on the challenges of being entrepreneur and focus on the content that will encourage and motivate us to pursue entrepreneurship as a career option. 2. Content covered is limited to exams, assignments, group projects, and presentation. 3. Inconsistency in teaching through the years. 4. The content of our entrepreneur education does not cover much. 5. The current methods don't work. 6. The lecturers are failing to teach entrepreneurship properly. 7. The module needs to promote self-employment. 8. The programme must have a section where successful entrepreneurs are invited to share their stories with us, so that we can be motivated. 9. The subject is not taught in a manner that encourages me to pursue self-employment. 10. There is not much depth in the content of entrepreneurship education; if only we had	1. I have not been convinced that I cannot start a business without my own startup capital. 2. It does not do what it is intended do, which is to equip me with necessary business skills. 3. It's the financing of teaching entrepreneurship. 4. One of the major challenges is getting funding; as a result, one can't start a business. 5. Students don't know how to obtain funding for their business ideas. There is no linkage between academic and business incubators. 6. Teach us how to obtain startup capital. 7. The programme does not equip us with necessary business skills like sourcing of startup capital. 8. The programme does not equip us with sufficient skills to start or run a business. Not enough is covered on financial management. 9. The programme does teach us … how to acquire capital for a business.

9. The entrepreneurship module is focused more on theory than the practical learning methods. 10. The programme should not only be focused on the theoretical methods of learning. There must also be practicals, things like a market day.	more time, we would learn more. 11. This module should be offered from first year, right up to our third year, rather than just doing at second year only. This does not help much in terms of grooming us to be entrepreneurial. 12. We are not taught and given enough information that can help us start our own businesses. 13. We do not get enough time for learning the practical component of entrepreneurship.	

Drawing from the above, one may conclude that for certain students, the course may be a little too theoretical, and there is a concern of not enough emphasis being placed on financial skills and knowledge, specifically in respect of raising capital for small business start-ups. Nonetheless, the majority of the participants (80.4%) responded “yes” when asked whether the DUT entrepreneurship education course had developed their entrepreneurship skills and abilities, as shown in Figure 4.2. Figure 4.3 shows the responses to the question of whether the entrepreneurship course leads to entrepreneurship careers.

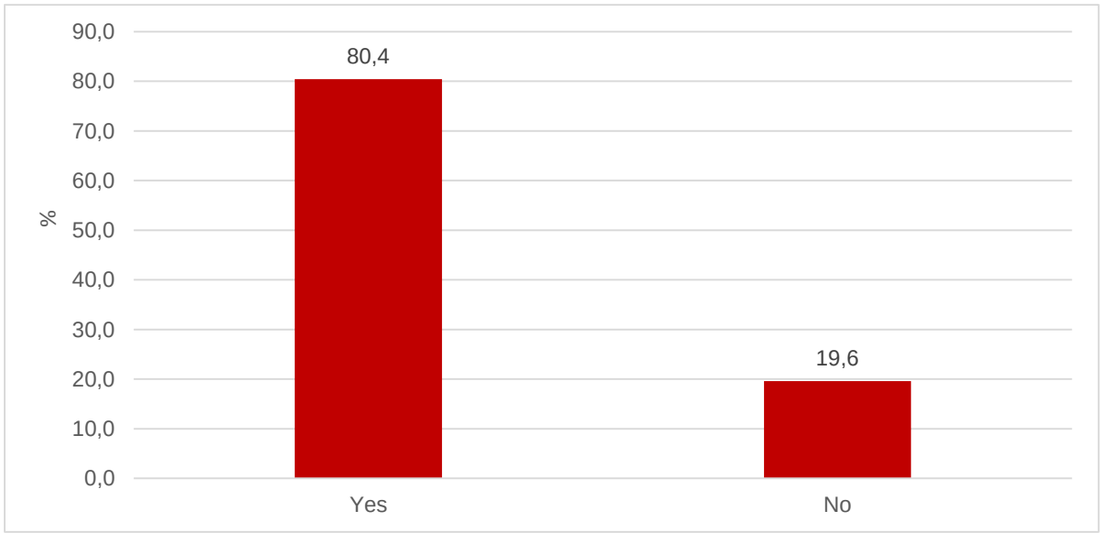

Figure 4.2: Does entrepreneurship education improve entrepreneurship skills and abilities?

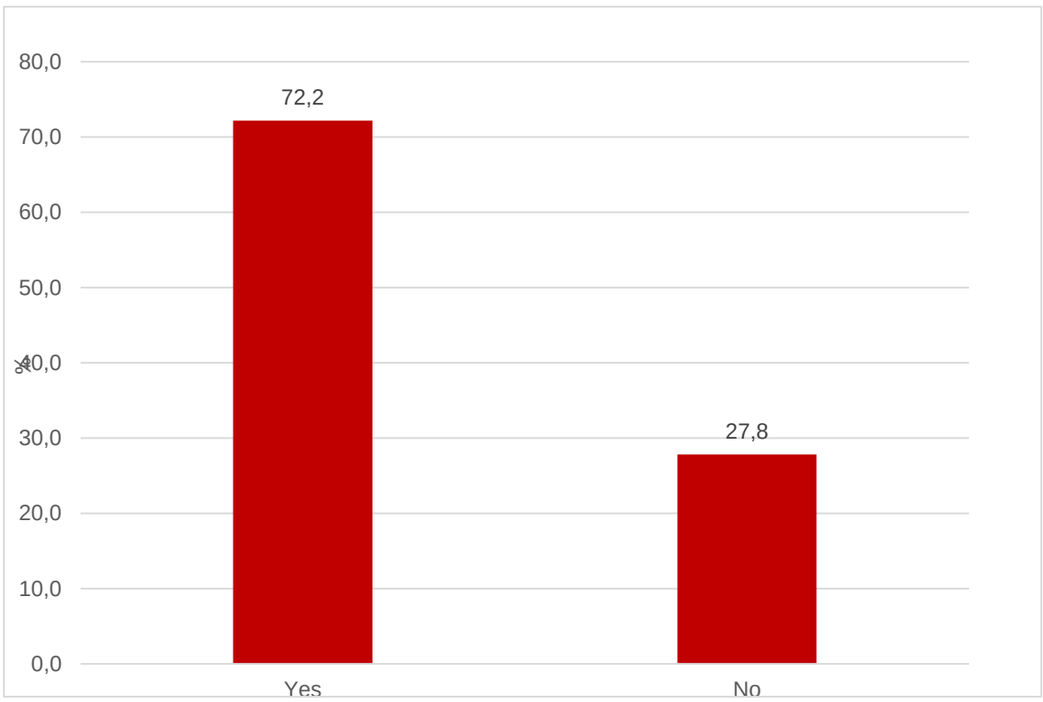

Figure 4.3: Does the entrepreneurship course lead to entrepreneurship careers?

Despite the concerns highlighted in Table 4.9 in respect of the course challenges, a large number of participants (179, 72.2%) went on to support the notion that the current methods of teaching entrepreneurship education at DUT do help trigger business start-ups. This large percentage of the responses tends to reinforce the position that the DUT entrepreneurship educational programme does develop entrepreneurship skills and abilities amongst its students. Figure 4.4 shows the responses to the question of whether methods of teaching entrepreneurship trigger business start-ups.

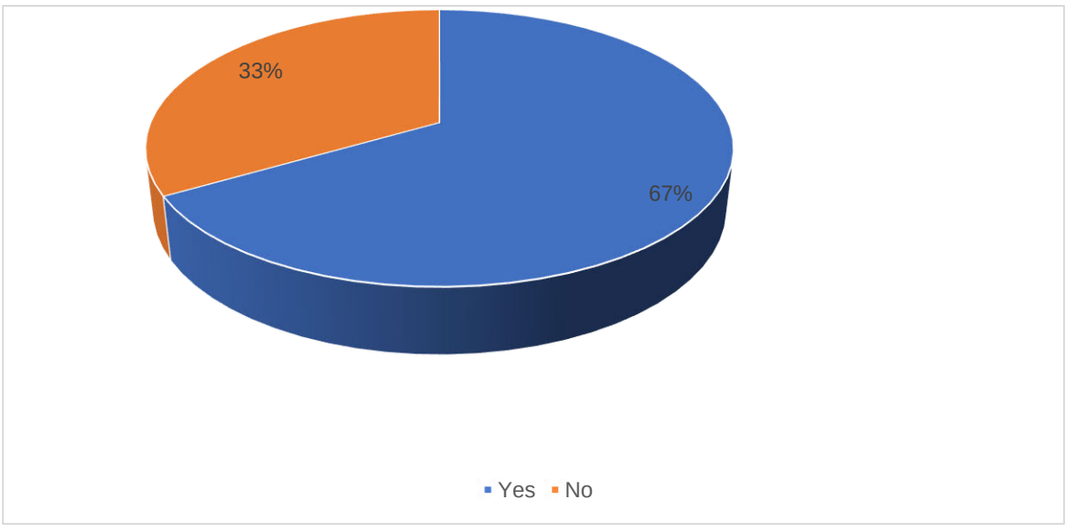

Figure 4.4: Do the methods of teaching entrepreneurship trigger business start-ups?

Figure 4.4 confirms that the respondents believed that the current method of teaching entrepreneurship triggers business start-ups. Equally significant is that a large proportion of the participants (67%) believed that the entrepreneurship course that they had taken at DUT had driven them to become entrepreneurs rather than job seekers, as observed from Figure 4.4. This is an important finding, particularly given the situation in present-

day South Africa where there is high unemployment, inequality, and poverty amongst the young population. In other words, the skills to own a business become critical in helping address the unemployment issues plaguing the country.

A concern expressed by some of the respondents in this study was the limited time allocated for the entrepreneurship module. Given this perception, it was important to know whether the course duration was sufficient to equip the participants with the necessary entrepreneurial skills needed to start their own business. As indicated in Table 4.10, 134 (54.0%) affirmed that the course duration had sufficiently equipped them with the entrepreneurial skills to start a business, while 114 (46.0%) were in disagreement.

Table 4.10: Responses of participants on the duration of the course and entrepreneurial skills

Response	Frequency	Percent
Yes	134	54.0
No	114	46.0
Total	248	100.0

It is clear from this result that there were concerns from a large number of respondents indicating that they would have been more comfortable with a longer course duration. In addition to this concern, the majority (178, 71.8%), however, believed that the entrepreneurial programme curriculum offered at DUT is in need of change, including the learning methodology, as seen in Table 4.11. This view also supports the concerns highlighted in Table 4.9, particularly with the theory-centric nature of the module and the dearth of teaching practical skills.

Table 4.11: Responses of participants regarding the entrepreneurial programme curriculum at DUT needing change, including the learning methodology

Response	Frequency	Percent
Yes	178	71.8
No	70	28.2
Total	248	100.0

Given the large number of participants (178, 71.8%) who had called for a change in the entrepreneurial programme curriculum as well as the learning methodology, one sample test was further used to gauge their views on recommended changes to the teaching approach and curriculum. The results are summarised in Table 4.12. It is also worth emphasising that some of the participants declined to comment, which contributed to the differences in the total number of participants, as highlighted in Table 4.12.

In terms of statement Q13a, “I prefer the theoretical aspect of teachings in respect of entrepreneurship education”, a significant majority (56.4%) were in disagreement

(disagree=42.7%; strongly disagree=13.7%) about preferring the theoretical aspect of teaching entrepreneurship ($p<0.05$). In contrast, the significant majority (63.7%) affirmed (strongly agree=32.7%; agree=31.0%) that they preferred the practical teachings in entrepreneurship ($p<0.05$). This response tends to reinforce the notion that most students see a programme of this nature as being oriented towards "action learning", that is, immersed in putting the skills and knowledge acquired into practice.

On the other hand, the significant majority (91.9%) were in agreement (strongly agree=49.8%; agree=42.1%) regarding preferring an equal provision of the theoretical and practical delivery methods of entrepreneurship (Q13c, $p<0.05$). This is aligned with the pedagogical approach of embedding equal weights of the practical and theoretical aspects to enhance sound knowledge.

The significant majority of the participants (96.2%) were in agreement (strongly agree=52.5%; agree=43.7%) that what is needed is an enabling curriculum that incorporates innovation, technology, and the commercialisation of students' business ideas to develop entrepreneurs (Q13d, $p<0.05$). Moreover, the significant majority of the participants (95.4%) believed that activities involving students in the start-up process are what truly matter and that these are what are missing in respect of the entrepreneurship curricula (Q13e, $p<0.05$). Thus, it was emphasised by the majority of respondents (93.6%) that a different approach needs to be developed specifically for the training of entrepreneurs at tertiary institutions (Q13f, $p<0.05$).

Table 4.12: Recommended changes to teaching approach and curriculum

	No	Likert scale				Mean	Std.	T-test value	*P*-value
		SA	A	D	SD				
Q13a	230	6.1%	33.0%	42.7%	13.7%	2.70	0.795	51.430	0.000
Q13b	228	32.7%	31.0%	23.4%	4.8%	2.00	0.908	33.346	0.000
Q13c	233	49.8%	42.1%	6.0%	2.1%	1.61	0.700	35.003	0.000
Q13d	238	52.5%	43.7%	1.3%	2.5%	1.54	0.653	36.313	0.000
Q13e	240	55.8%	39.6%	1.7%	2.9%	1.52	0.678	34.644	0.000
Q13f	232	52.2%	41.4%	2.6%	3.9%	1.58	0.728	33.095	0.000
	Likert scale: SA=strongly agree; A=agree; D=disagree; SD=strongly disagree								

4.7.1 Triggering Business Start-Ups – Impact of Teaching Methods

The results reported earlier highlight the need for the current method of teaching entrepreneurship to be changed. This section examines the impact of teaching methods on triggering a business start-up. The Cochran (Q) test in Table 4.13 revealed that a significant number of the participants (162, 65.3%) believed that the teaching method that triggers a business start-up involves developing a start-up capital system for students whilst studying ($Q(4) = 60.448$; $p<0.001$). This tends to suggest that a majority of the

participants see the issue of financing start-up businesses as the most critical element that should be covered in an entrepreneurship programme/course. Equally important is that a large number (145, 58.5%) sees business mentorship from business leaders, and visible and accessible on-campus business incubators, as a teaching method that could trigger business start-ups.

Table 4.13: Teaching methods triggering business start-ups

Teaching method triggering business start-up	N	Value		Mean	Std. Deviation	Cochran's Q	Sig
		Yes	No				
Annual business plan competitions	248	111	136	1.55	0.498	60.448	0.000
Annual invitation to research and development companies to cultivate new product development and fresh business ideas from students	248	121	126	1.51	0.501		
Develop a start-up capital system for students whilst studying	248	162	86	1.35	0.477		
Business mentorship from business leaders, visible and accessible on campus business incubators	247	145	102	1.41	0.493	172.777	0.000
A specific qualification focusing on business should be designed (e.g., Diploma in Entrepreneurial Studies)	248	94	153	1.62	0.486		

4.7.2 Critical Elements for Quality Entrepreneurship Education/Programmes

While the importance of an entrepreneurship programme focusing on how to access business finances for start-ups as well as business mentorship, including conducive incubation environments, were seen as being significant considerations for a successful programme, there are also other factors that enhance the quality of such a programme.

These results are summarised in Table 4.14. In terms of statement (Q15a), "Students should be assessed on the submission of their plans for business start-ups", the significant majority (91.9%) were in agreement (strongly agree=40.6%; agree=51.3%). Equally, the significant majority (96.5%) believed (strongly agree=53.9%; agree=42.6%) that DUT should set up business incubation facilities for students to test their start-up companies (Q15b).

Regarding the source of funding for the start-ups, the significant majority (96.1%) were of the view (strongly agree=67.2%; agree=28.9%) that funding should be sourced from the government for student business start-ups. Moreover, the significant majority (96.2%) were in agreement (strongly agree=60.9%; agree=35.3%) with statement Q15d that entrepreneurship education should be practically focused, which allows students to learn as well as make mistakes. Ultimately, the significant majority (97.5%) believed (strongly agree=62.3%; agree=35.2%) that these could empower DUT students across all academic disciplines to be entrepreneurially active after graduation and not only to rely on organisational employment.

Table 4.14: Participants' perceptions on the impacts of entrepreneurship education

	No	Likert scale				Mean	Std.	T-test value	*P*-value
		SA	A	D	SD				
Q15a	234	40.6%	51.3%	6.8%	1.3%	1.69	0.656	39.371	0.000
Q15b	230	53.9%	42.6%	3.0%	0.4%	1.50	0.582	39.104	0.000
Q15c	235	67.2%	28.9%	3.4%	0.4%	1.37	0.573	36.667	0.000
Q15d	235	60.9%	35.3%	3.0%	0.9%	1.44	0.599	36.832	0.000
Q15e	236	62.3%	35.2%	2.1%	0.4%	1.41	0.557	38.789	0.000
	Likert scale: SA=strongly agree; A=agree; D=disagree; SD=strongly disagree								

4.7.3 Cross Analysis of Biographical Information and Entrepreneurship Education

In terms of the statement "With the skills I have obtained from the entrepreneurship programme, I want to start a business", the Chi-squared analyses in Table 4.15 yielded statistically significant differences with respect to the gender of the participants ($p>0.05$). It can be seen from Table 4.16 that significantly more females were in agreement. With reference to the statement "Taking a course or a programme in entrepreneurial studies has improved my business acumen", the Chi-squared analyses in Table 4.17 yielded statistically significant differences with respect to the level of study ($p=0.043$). It was gathered that more second-year participants agreed with the statement (Table 4.17).

Table 4.15: Relationship between biographical information and entrepreneurship education

Importance of entrepreneurship education		Gender	Age group	Course of study	Level of study
Entrepreneurship education builds up an understanding among students about what entrepreneurship involves, given that it is very crucial and needed for all segments of society	Chi-square	1.562	0.229	37.252	2.764
	Df	3	3	36	9
	Sig.	0.704	0.980	0.411	0.973
Enterprise education is about grooming individuals for the business world by teaching students how to take charge of their careers and personal lives	Chi-square	1.353	3.492	28.919	13.260
	Df	3	3	36	9
	Sig.	0.873	0.296	0.793	0.151
Taking a programme in entrepreneurial studies has an effect on enhancing my future career direction towards self-employment and a chance to start my business	Chi-square	0.542	0.084	39.512	4.775
	Df	3	3	36	9
	Sig.	0.924	0.993	0.316	0.853
Taking a course or a programme in entrepreneurial studies has improved my business acumen	Chi-square	5.696	3.877	41.686	17.404
	Df	3	3	36	9
	Sig.	0.126	0.277	0.237	0.043
With the skills I have obtained from the entrepreneurship programme, I want to start a business	Chi-square	12.944	3.626	29.162	11.562
	Df	3	3	36	9
	Sig.	0.004	0.310	0.783	0.239

Table 4.16: Relationship between gender and entrepreneurship education

			Q5e				Total
			Strongly Agree	Agree	Disagree	Strongly Disagree	
Sex	Male	Count	44	50	6	4	104
		% of Total	18.1%	20.6%	2.5%	1.6%	42.8%
	Female	Count	34	73	24	8	139
		% of Total	14.0%	30.0%	9.9%	3.3%	57.2%
Total		Count	78	123	30	12	243
		% of Total	32.1%	50.6%	12.3%	4.9%	100.0%

Table 4.17: Relationship between level of study and entrepreneurship education

			Q5d				Total
			Strongly Agree	Agree	Disagree	Strongly Disagree	
Level of study	2nd Year	Count	34	87	17	4	142
		% of Total	14.0%	35.8%	7.0%	1.6%	58.4%
	3rd Year	Count	43	40	14	0	97
		% of Total	17.7%	16.5%	5.8%	0.0%	39.9%
	4th Year	Count	2	1	0	0	3
		% of Total	0.8%	0.4%	0.0%	0.0%	1.2%
	B-Tech	Count	0	1	0	0	1
		% of Total	0.0%	0.4%	0.0%	0.0%	0.4%
Total		Count	79	129	31	4	243
		% of Total	32.5%	53.1%	12.8%	1.6%	100.0%

4.7.4 The Relationship Between Biographical Information and Approach to Teaching Entrepreneurship Education

In terms of the statement “I prefer the theoretical aspect of teachings in respect of entrepreneurship education”, the Chi-squared analyses in Table 4.18 yielded statistically significant differences with respect to the age group of the participants ($p=0.049$). It was gathered that participants within the age group of 20–30 years were more in disagreement (Table 4.19). Similarly, a significant number of the ND Taxation participants were also in disagreement (Table 4.20). On the other hand, in terms of the statement “I prefer the practical teachings in entrepreneurship education”, a significant number of the ND participants were in agreement ($p<0.05$), as seen in Table 4.21.

Table 4.18: Relationship between biographical information and approach to entrepreneurship education

Importance of entrepreneurship education		Gender	Age group	Course of study	Level of study
I prefer the theoretical aspect of teachings in respect of entrepreneurship education	Chi-square	3.756	7.856	58.142	10.901
	Df	3	3	36	9
	Sig.	0.289	0.049	0.011	0.283
I prefer the practical teachings in entrepreneurship education	Chi-square	2.175	1.303	79.068	15.377
	Df	3	3	36	9
	Sig.	0.537	0.728	0.000	0.081
I prefer an equal provision of the theoretical and practical delivery methods of entrepreneurship education	Chi-square	5.777	1.412	35.027	3.200
	Df	3	3	36	9
	Sig.	0.123	0.703	0.515	0.956
What is needed is an enabling curriculum that incorporates innovation, technology, and commercialisation of students' business ideas to develop entrepreneurs	Chi-square	3.373	4.233	38.423	3.815
	Df	3	3	36	9
	Sig.	0.338	0.237	0.360	0.923
Activities to get students involved in the start-up process is what really matters, and that is what is missing in respect of entrepreneurship	Chi-square	3.647	4.654	28.401	7.337
	Df	3	3	36	9
	Sig.	0.302	0.199	0.813	0.602
A different approach needs to be developed specifically for the training of entrepreneurs through tertiary institutions	Chi-square	0.771	4.301	32.399	9.556
	Df	3	3	36	9
	Sig.	0.856	0.231	0.641	0.388

Table 4.19: Relationship between age group and approach to teaching entrepreneurship education

			Q13a				Total
			Strongly Agree	Agree	Disagree	Strongly Disagree	
Age group	18–20 years	Count	8	34	52	8	102
		% of Total	3.5%	14.8%	22.6%	3.5%	44.3%
	20–30 years	Count	6	42	54	26	128
		% of Total	2.6%	18.3%	23.5%	11.3%	55.7%
Total		Count	14	76	106	34	230
		% of Total	6.1%	33.0%	46.1%	14.8%	100.0%

Table 4.20: *Relationship between course of study and approach to teaching entrepreneurship education (Q13a)*

			Q13a				Total
			Strongly Agree	Agree	Disagree	Strongly Disagree	
Level of education	ND Taxation	Count	1	19	27	4	51
		% of Total	0.4%	8.3%	11.7%	1.7%	22.2%
	BHSC Clinical Tech	Count	1	5	17	1	24
		% of Total	0.4%	2.2%	7.4%	0.4%	10.4%
	ND Fashion Design	Count	0	8	3	3	14
		% of Total	0.0%	3.5%	1.3%	1.3%	6.1%
	ND Translation	Count	0	1	2	1	4
		% of Total	0.0%	0.4%	0.9%	0.4%	1.7%
	ND Financial Accounting	Count	4	17	5	4	30
		% of Total	1.7%	7.4%	2.2%	1.7%	13.0%
	ND Analytical Chemistry	Count	3	9	13	4	29
		% of Total	1.3%	3.9%	5.7%	1.7%	12.6%
	ND Cost Mgt & Accounting	Count	0	1	0	0	1
		% of Total	0.0%	0.4%	0.0%	0.0%	0.4%
	ND Jewellery Design	Count	0	1	2	1	4
		% of Total	0.0%	0.4%	0.9%	0.4%	1.7%
	ND Interior Design	Count	0	0	1	0	1
		% of Total	0.0%	0.0%	0.4%	0.0%	0.4%
	ND Clothing Mgt	Count	0	7	4	4	15
		% of Total	0.0%	3.0%	1.7%	1.7%	6.5%
	ND Fine Art	Count	0	1	3	4	8
		% of Total	0.0%	0.4%	1.3%	1.7%	3.5%
	ND Photography	Count	1	0	10	3	14
		% of Total	0.4%	0.0%	4.3%	1.3%	6.1%
	ND Accounting	Count	4	7	19	5	35
		% of Total	1.7%	3.0%	8.3%	2.2%	15.2%
Total		Count	14	76	106	34	230
		% of Total	6.1%	33.0%	46.1%	14.8%	100.0 %

Table 4.21: Relationship between course of study and approach to teaching entrepreneurship education (Q13b)

			Q13b				Total
			Strongly Agree	Agree	Disagree	Strongly Disagree	
Level of education	ND Taxation	Count	25	18	7	2	52
		% of Total	11.0%	7.9%	3.1%	0.9%	22.8%
	BHSC Clinical Tech	Count	4	5	13	2	24
		% of Total	1.8%	2.2%	5.7%	0.9%	10.5%
	ND Fashion Design	Count	8	5	0	0	13
		% of Total	3.5%	2.2%	0.0%	0.0%	5.7%
	ND Translation	Count	4	0	0	0	4
		% of Total	1.8%	0.0%	0.0%	0.0%	1.8%
	ND Financial Accounting	Count	10	15	4	3	32
		% of Total	4.4%	6.6%	1.8%	1.3%	14.0%
	ND Analytical Chemistry	Count	8	12	4	4	28
		% of Total	3.5%	5.3%	1.8%	1.8%	12.3%
	ND Cost Mgt & Accounting	Count	0	1	0	0	1
		% of Total	0.0%	0.4%	0.0%	0.0%	0.4%
	ND Jewellery Design	Count	4	0	0	0	4
		% of Total	1.8%	0.0%	0.0%	0.0%	1.8%
	ND Interior Design	Count	0	0	1	0	1
		% of Total	0.0%	0.0%	0.4%	0.0%	0.4%
	ND Clothing Mgt	Count	4	7	4	0	15
		% of Total	1.8%	3.1%	1.8%	0.0%	6.6%
	ND Fine Art	Count	0	3	2	0	5
		% of Total	0.0%	1.3%	0.9%	0.0%	2.2%
	ND Photography	Count	3	1	10	0	14
		% of Total	1.3%	0.4%	4.4%	0.0%	6.1%
	ND Accounting	Count	11	10	13	1	35
		% of Total	4.8%	4.4%	5.7%	0.4%	15.4%
Total		Count	81	77	58	12	228
		% of Total	35.5%	33.8%	25.4%	5.3%	100.0 %

A salient point that emerged from the quantitative results was that entrepreneurship modules had improved the students' entrepreneurship skills. However, a constraint emerging from the participants was that the time and duration of teaching (i.e., insufficient time allocated to the course) and the practicality of the course module (a more hands-on learning approach being needed) were limiting and, therefore, perceived to be negative factors impacting on the students' entrepreneurial potential.

The study now examines the responses from the interviews. In-depth semi-structured interviews were conducted with three senior teaching staff members at DUT. This analysis resulted in the identification of themes and sub-themes (Table 4.22).

Table 4.22: Identification of themes and sub-themes

Theme	Sub-theme
1. Structure of entrepreneurship programme at DUT	• Objectives of the programme • Anticipated skills for entrepreneurship module
2. Strategies adopted in entrepreneurship programme	• Evaluating the assessment method from learning outcomes
3. Comparing the DUT entrepreneurship programme and that of another institution	• Competency in the skills acquired • Method of delivering entrepreneurship
4. Students' perceptions of the DUT entrepreneurship programme	• Challenges of teaching entrepreneurship programme

The above themes were identified in line with the research questions as follows:

- What are the objectives and the anticipated outcomes of entrepreneurship education as a field of study?
- What skills and capabilities do you want your students to acquire from this module?
- As compared to other institutions that offer entrepreneurship as a 3-year course, as opposed to a semester module, in your view, does the semester-module offer suffice in equipping the student with the necessary competence?
- What is it that makes DUT's entrepreneurship education programmes/course different from other institutions and how does that contribute to real student innovation and entrepreneurial inclination?
- What strategies are used in ensuring advanced ways of teaching entrepreneurship and retaining the demanding academic standards of evaluation?
- How does DUT go about ensuring and designing assessments which allow students to demonstrate their achievement of the learning outcomes?
- What are some of the perceptions that students have about entrepreneurship as a career option? How is your entrepreneurship programme structured to change these perceptions?

- In terms of getting the anticipated results, are there any challenges associated with teaching entrepreneurship?
- Does DUT assess the impact of entrepreneurship education on their students, and what indicators are used?

Data from the semi-structured interviews was transcribed verbatim and used in the analysis.

4.8 Data from Semi-Structured Interviews

4.8.1 Theme 1: Structure of Entrepreneurship Programme at DUT

While it is noted that entrepreneurship education at DUT is only offered as a module, not as a qualification, it was critical to know a little more about the way the university entrepreneurship programme is structured. From one of the interviews, it emerged that the entrepreneurship programme at DUT is offered to various other departments in addition to students in the Management and Entrepreneurial Department. Furthermore, the Accounting and Informatics students undertake the course in their first year in semester one. The interviewee also provided details of the content covered by the students regarding an introduction to SMMEs (as this is what business is concerned with), since all businesses start small – this is summarised as follows:

a. The course teaches idea generation and the challenges associated with entrepreneurship.
b. In addition to the aforesaid, the course also teaches students how to identify windows of opportunity, market feasibility, financial feasibility studies, and basic accountancy.
c. In the end, they learn how to draw up a business plan that they can use to source funding or look for business and create employment.

Similarly, participant P2 revealed that she teaches three types of entrepreneurship skills for the first years. The content covered is:

- How the economy works
- Characteristics of an entrepreneur
- The challenges that small businesses face
- What to do when financing one’s business
- Pricing and costing of products or services
- Marketing plan and business plan

Expanding further, participant P2 revealed a different group of students taught in another faculty. According to P2:

> With this group, we just cover a wide range of explanation on entrepreneurship. For instance, what is expected of them in terms of entrepreneurship, the different kinds of ownership, understanding the business plan and marketing plan. In addition to this, we also teach them how to do [a] sound business plan; basically when it comes to offering the entrepreneurship module, we offer different entrepreneurship content to four different groups of students.

Moreover, it was revealed that the entrepreneurship programme is mandated by the Department of Higher Education to produce students who are job creators. This mandate was noted to have influenced the development of a new module and syllabus.

According to participant P1, the new module is offered to third-year students as a subject only in their second semester. According to P1:

> Currently, on the new qualification, it is offered to third-year students as a subject, however, only in their second semester (2018). This is the new group that had to do [an] entrepreneurship module in our department [Department of Management and Entrepreneurial Studies].

Equally important, and in line with the Department of Higher Education mandate on entrepreneurship, participant P3 revealed that the university had introduced a general education module, where entrepreneurship is a selective option for students. These modules appear to be designed to service students mainly from the Faculty of Health. According to P3:

> As of now, I am teaching what is called “Entrepreneurial E”, which is offered under the General Education module. In that programme, I have students from Nautical Studies, Shipping and Logistics, Biomedical, Radiography, Child and Youth Care, and Environmental Health. All these students choose entrepreneurship as an elective under … General Education.

Drawing from the above, it could be observed that the entrepreneurship programme at DUT is structured in line with the department and faculty requirements. While this may be understandable, since the programme has to be tailored to meet the specific needs of the service department or faculty offering the programme, there remains little uniformity that one would expect of a course, irrespective of it possibly being offered across faculty and department lines. This assertion is further supported by a statement from participant P3: “We also have another thing called faculty modules; in the accounting department, they have entrepreneurship as a faculty subject, and they teach it themselves” (P3).

a. Sub-Theme 1: Objectives of Entrepreneurship Programme at DUT

As mentioned earlier, the entrepreneurship programme at DUT operates in silos, as each faculty has a different structure and content module. Given this, the interviewees were questioned about objectives. It emerged that outcome driving is the core objective of the entrepreneurship programme. In essence, students must be able to put into practice the taught entrepreneurship modules. These include the ability to identify business opportunities, create job/s, identify potential funders, and own their business without

necessarily seeking jobs. Excerpts from the interviewees' comments are summarised as follows:

> I am very outcome based; I want to see if they can become entrepreneurs. For me, it is not just about ticking the box or I have passed the subject. I want to know if they are able to do it; I don't care much about the theory results. I just want them to have an understanding about it. [What] I am more really keen about is … what they can do after having being through my class (P3).

> The end result is to make students who have been through this module to understand what entrepreneurship is all about, to be aware of challenges involved in doing business, and they should be able to start their own businesses. They must be knowledgeable in terms of where to go when needing support like funding, which institutions will help them in terms of starting their own businesses. We also need to ensure that they are not just small business owners but entrepreneurs who understand [the] business environment at a local and a global scale (P2).

> The thinking behind entrepreneurship education is that if you do not find employment, then create your own. The idea is that students should be able to identify opportunities [and] come up with business ideas based on those opportunities identified. In addition, entrepreneurship students should be job creators, not job seekers. They should be become entrepreneurs and be able to start their own businesses (P1).

b. Sub-Theme 2: Anticipated Skills for Entrepreneurship Module at DUT

In terms of anticipated skills and capabilities, the entrepreneurship module is required to equip students with the ability to draw up a business plan and solicit funding to start their own businesses. Other notable skills mentioned include communication and networking skills, networking, business ethics, how to manage their business, etc. The comments by the interviewees were as follows:

> They should be able to draw up a business plan and also be able to get funding to start their own businesses. We also do teach them how to go about networking with the relevant people that will influence their businesses; therefore, the skills obtained here will be communication skills, networking skills, and drawing up a convincing business plan. In terms of assessments, they are not doing [a] business plan anymore but everything that we teach goes towards knowing how to draw up a business plan (P1).

> If they do the module, they will be able to be business owners who are able to manage their business and with an understanding of business ethics. This is very important for students to understand, in a sense that when they are business leaders, they will not be involved in unethical business practices. Amongst other things that students need to understand about the business environment is that there are lot of challenges, and the competition is very high. However, to gain a competitive advantage as a business owner, you need to be unique in your product/service you are offering (P2).

Participant P3 argued that the concept of writing a business plan has become old-fashioned in entrepreneurship. It was revealed that a new approach has been introduced, and from the interviewee's point of view, this is quicker and more appealing as compared to drafting a business plan:

> We no longer use the business plan. I have pivoted that approach completely. We are using different lean business canvas models, which are a nicer and quicker way of getting a feel if the business idea will work or not without having to write thousands of pages for nothing. I also encourage other different business models; for instance, [a] student had the franchise business model, which is great – I am not necessary proposing that lean is the best, but I am proposing that we do a business model. Some kind of a business canvas model rather than a business plan, but I cannot say that for the other departments since we did not have an input when their subject descriptors were drawn up (P3).

Noting the different views and objectives of the module presented by participant P3, it was critical to probe whether the modern way of doing a business plan and business canvassing is aligned with the requirements of the funding institutions in South Africa, especially when one considers that institutions such as National Youth Development Agency (NYDA), Small Enterprise Finance Agency (SEFA), and others still want a business plan. In providing answers to the question, participant P3 clarified that a business plan is still encouraged but is not placed as the focal point of the teaching process. In the interviewee's own words:

> That is fine – we are just not starting with the business plan anymore; we are starting with the customer. We are using our lean to get our viability and sustainability. Once we have ascertained the sustainability and the viability before we have written a whole lot of stuff and crossed all the t's and dot[ted] the i's, we then write a business plan – it is not like we do not do a plan; we just do not start with it at the beginning stage (P3).

4.8.2 Theme 2: Strategies Adopted in Entrepreneurship Programme at DUT

In recent years, there has been a shift in teaching and learning from a teacher-centric position to one centred on the student. As a consequence, HEIs, such as DUT, have made student engagement and participation one of their core policies towards achieving student centredness. It was, therefore, necessary to know the strategies of lecturers in the Entrepreneurship Department in respect of advanced ways of teaching entrepreneurship and retaining demanding academic standards of evaluation. It emerged from the interview that contact lessons and the use of guest lecturers, as well as former students who had achieved their own business start-ups, were the common teaching strategies. One of the interviewees' comments were as follows:

> In terms of teaching, we have normal contact lessons; besides that, we invite guest lecturers, people who are entrepreneurs, or it could be former successful DUT students who have managed to start their own business – a typical example is that small business management student who …managed to start a successful carwash business a long time ago, here at DUT. We then invite them to come and do presentations that explain to students how they went about starting their own businesses. Such practice enables to students to see that whatever they learnt is relevant in the marketplace (P1).

Adding to this, participant P1 revealed the presence of on-campus business incubators. Students are encouraged to partner with them for a business start-up: "We also encourage students that want to start businesses to make use of our on-campus business

incubators, such as Invotech and the entrepreneurship desk" (P1). Participant P2 commented as follows:

> So far in my class, what I normally do is to invite people from the business industry, so that they can speak to the students to give them insight on how it is to be an entrepreneur. I also get them business mentors that will tell them and prepare them for the business environment through sharing their real-life experiences. In terms of learning, we make them write two tests and one exam; however, that depends on the students' level of study. In some instances, students just have to submit a project or assignment and write a test so that we can be able to test their knowledge (P2).

Sub-Theme 1: Evaluating the Assessment Method from Learning Outcomes

The interviewees were also asked how the assessment methods currently being used are matched to the expected learning outcomes. Reiterating the use of tests and exams to measure students' learning outcomes, participant P1 pointed out that "We use case studies, even though all our assessments are multiple choice questions (MCQ). They write two tests in a semester and one exam. However, everything is MCQ mainly because of the large numbers."

Furthermore, the interviewee suggested that the above method of assessment may not be the ideal method for assessing a student's entrepreneurship learning outcomes. However, the limited number of staff, coupled with the large number of students, has made the current assessment method tenable. Equally, while it was indicated that a business plan was used in the past to assess students' learning outcomes, the interviewee stressed that cheating by students was a contributing factor in phasing out this method of assessment:

> We used to make students do business plans as part of their assessment; we have come to realise that they just copy one another and [do] not learn anything. It was for this reason we stopped this assessment method; we now assess them through multiple choice questions and real-life case studies. This works now that the student does not just guess their answers; they must read through the case study and see how they can apply what they have learnt in class in a real-life situation in [the] form of a case study (P1).

Apart from case studies and MCQ assessments, participant P3 mentioned the use of online tests and business pitch presentations:

> The way I structure my course is that they will do an online test; it is a multiple-choice question – they have three tries if they fail the test. Forty percent of their marks comes from attending tutorials and the test; at the end of the course, we [go] to sit [in] the boardroom and have a panel of judges. Students pitch their ideas; [they] have only [a] five-minute business pitch presentation and ten minutes of QA's, and all the panel members have an input. If you cannot sell your business in five minutes, then you are not sure of your business concept (P3).

The above assessment method appears to be more practical than theoretical in nature. Equally, it was also revealed that the business pitch presentation comes with prize money, which serves as a form of encouragement and motivation:

> The way we have done it (remember this is such an evolving environment and as the emphasis has shifted), we have had to come up with more creative methods to create and [encourage] entrepreneurship. I have [gone] further than just doing a business pitch. The judges choose the best business ideas, and the students that won here were the ones that pitched the idea of vertical planning. They were offered R10, 000 start-up capital because my aim in this course is to create entrepreneurs, not just theoretical entrepreneurs. It also creates excitement about the possibilities of entrepreneurship (P3).

From the above comments, it is sufficient to state that the assessment method resonates strongly with the Department of Education's mandate of equipping students with entrepreneurial skills to start their own businesses. As such, it was understandable that participant P2 considered the method of assessment to be highly efficient in delivering the entrepreneurship module: "Yes, in my view, they do, because at the end of the day, students do understand what is expected from them" (P2).

4.8.3 Theme 3: Comparing the DUT Entrepreneurship Programme and Other Institutions

While it has been established from this study that the DUT entrepreneurship education module is offered for a semester, compared to other universities that offer entrepreneurship as a qualification, the real test is about the quality of the DUT entrepreneurship programme as compared to other institutions. Hence, this was assessed by addressing (1) the competency of the skills acquired, and (2) the method of delivery of entrepreneurship education. These are addressed further below.

a. Sub-Theme 1: Competency of the Skills Acquired

As compared to other institutions that offer entrepreneurship as a 3-year course (as opposed to a semester module), it was worth finding out from the interviewees whether the semester module offered at DUT suffices in equipping students with the necessary competence. The interviewees were unanimous in their views that the semester module offered at DUT is not sufficient when compared to other institutions offering a 3- to 4-year qualification. They argued that the time allocated at DUT is limiting; as such, the content is gravely limited:

> Not enough skills; that is why when you compare DUT with other universities like GIBS or Unisa, which offer a 3- or 4-year qualification in entrepreneurship, that is more than enough to equip a student to be an entrepreneur. However, in our case, I believe the time allocated is not enough because the content is [a] semester, not even one year, so the content is not enough. As a result, we just give them the basic things that they need to know (P1 and P2).

However, it was revealed that DUT has a mentorship programme that provides real business experience. Again, despite this positive aspect, it was stated that the mentorship

programme at DUT operates in silos and is not aligned with the Entrepreneurship Department:

> As support measure for our students, we also have facilities like Invotech and the entrepreneurship desk, if students need more information on how to start their own business. The problem at DUT is that not everything is aligned because we have these business incubators such as Invotech and the entrepreneurial desk, of which I, as an entrepreneurship lecturer, got to know about … by chance. I came across them while I was just walking around on campus, and I walked in[to] their offices to make an enquiry about their services (P1).

Moreover, it was indicated that the majority of the lecturers within the department do not know of the existence of the programmes. This was voiced as a concern by some of the interviewees:

> The problem here is that we are a department of entrepreneurial studies; whenever the institution decides to have such facilities on campus, it should be in consultation with our department, of which did not happen. There was never consultation about what they do and how they came about. When I got to their office, they informed me that they help students to start their own businesses and that the entrepreneurial desk is strictly for students, so I mentioned this to my students in class (P1).

Elaborating further, participant P1 noted the following: “I do believe that when it comes to these support structures, they should be working together. However, there is no proper co-ordination, and several entities operate in respect of entrepreneurship”.

b. Sub-Theme 2: Method of Delivery of Entrepreneurship Education

In the sub-theme above, it was established that the duration of the DUT entrepreneurship module is a major constraint for the entrepreneurship programme when compared with other institutions. This sub-theme aimed to discover whether the methods of teaching entrepreneurship at DUT and other institutions are different. The following question was used to initiate a discussion: “Does the delivery method of entrepreneurship education at DUT differ from what other institutions of higher learning are using?” While one of the interviewees assumed that the method of delivery may differ due to the differences in the duration of the programme, others thought or assumed otherwise:

> I suppose it will differ because we [are] only offering it as a semester module, and they offer it for three years, so whatever they cover in three years, we must shrink that and cover it in one semester. So, the way in which we are going to assess will be different. In addition, if it was offered at third-year or post-grad-student level like other universities, the delivery methods will differ simply because you are teaching someone who wants to start their business immediately or soon after graduation if they can’t find employment. As for DUT, entrepreneurship is only offered to first-year students, so the content will just cover the basics compared to an advanced curriculum offered to students at exit level (P1).

In contrast to the above comments, other interviewees did not find any difference between DUT and other institutions in terms of delivery and assessment methods:

> It is not that much different; for instance, here at DUT, we assess the first years through multiple choice questions (MCQs), whereas at other institutions that I used to work for, students are just assessed through normal tests, where they are expected to answer questions (P1).

Nevertheless, in the comments below, participant P2 acknowledged that the structures of both assessment methods differ:

> However, both of these assessing methods are theoretical tests, which are structured differently. I cannot say that this assessment method has a positive impact. Here at DUT, first-year students are just assessed through multiple choice questions, and the B-Tech students write normal tests in which they are expected to answer case studies. At DUT, we are using MCQ to assess the first years compared to the other institution where the first years just write normal tests (P2).

4.8.4 Theme 4: Students' Perceptions of the DUT Entrepreneurship Programme

Bearing in mind that the DUT entrepreneurship programme is limited in terms of the duration of the programme and the content as compared to other institutions, it was useful to know what the interviewees thought that the students' perceptions of the programme may be. The following question was used to elicit some responses and discussions: "What are some of the perceptions that students have about entrepreneurship as a career option? How is your entrepreneurship programme structured to change these perceptions?"

From the response provided by participant P1, it was found that some of the students appear uninterested in becoming entrepreneurs. The reason deduced by the interviewee was that being employed offers more job security than owning a business:

> The response I get is that most of them prefer to be employed because of financial security; their reasoning is that when you own a business, it comes with a responsibility of making sure that it yields profits since it is the only source of income at your disposal, as opposed being an employee who has a fixed income (P1).

On the other hand, during the interview process, it was suggested that some of these students' perceptions change as the module progresses. The interviewee, however, attributed the change in perception to the invited guest lecturers who provided a source of motivation for the students:

> Others feel that they first need to go to industry and acquire some relevant experience before going into business, after obtaining the technical know-how in their respective field of study. As for changing these perceptions, we invite guest lecturers to motivate these students by sharing their experiences in business (P1).

However, participant P3 claimed that students had no perceptions of the entrepreneurship programme. The participant attributed this to a lack of course structure to create

entrepreneurs: “because there is no course structured to create entrepreneurs. I do not think students have that perception at all” (P3).

Sub-Theme 1: Challenges of Teaching the Entrepreneurship Programme

From the quantitative data, the major constraints emerging were those of the time duration and the lack of practical content in the module, which was a challenge for the students. These assertions were further corroborated by the interviewees:

> Yes, there are challenges; there is no connection between the practical and the theoretical aspect of teaching entrepreneurship. The time given to students is not enough for [the] entrepreneurship module to yield the anticipated results since it is only offered in the first year during the first semester only. Therefore, this time is not even enough to cover all the work (P2).

In addition, participant P3 lamented the environment and lecture venues. In the interviewee’s opinion, this serves as a barrier to teaching entrepreneurship:

> Yes, the classes are not conducive when it comes to teaching entrepreneurship. This fixed seating is somehow restricting us; as entrepreneurship is synergy, students need to be able to sit in groups for discussion and brainstorming. The set up at DUT lecture venues [is] not conducive for entrepreneurship teaching. Now we have fixed seating in long rows; you need to be able to move around talk to groups (P3).

4.9 Conclusion

The findings arising from the face-to-face interviews and the analysis have been discussed with respect to the broader framework of the study. The following chapter presents the discussion of the results and also reviews these findings in relation to the literature.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The primary objective of this study was to assess the impact of an entrepreneurship programme or courses on students at DUT and to examine whether this leads to students opening, either immediately or at some future point, their own businesses as compared to simply seeking employment after graduation. This perceptions-based study sought to establish whether students taking an entrepreneurial course developed intentions to begin their own businesses as compared to simply seeking employment. The secondary objectives of this study were:

- To examine the current state of entrepreneurship education at DUT
- To examine the benefits and challenges associated with entrepreneurship education at DUT
- To evaluate the perceptions of students in DUT towards entrepreneurship as a career of choice

This chapter discusses the key objectives and questions supported by the data gathered and reported in Chapter Four.

5.2 OBJECTIVE 1: To Examine the Current State of Entrepreneurship Education at DUT

Entrepreneurship education at DUT is offered to students registered in the following programmes: National Diploma (ND) in Taxation, BHSc in Clinical Techology, ND in Fashion Design, ND in Translation, ND in Financial Accounting, ND in Analytical Chemistry, ND in Cost Management & Accounting, ND in Jewellery Design, ND in Interior Design, ND in Clothing Management, ND in Fine Art, ND in Photography, and ND in Accounting. The total number of participants for this study was 248, and the majority of them were from the Faculty of Accounting and Informatics (50%) followed by the Faculty of Applied Sciences (28.3%) and the Faculty of Arts and Design (12.4%). Regarding the level of study of these participants, the majority (58.5%) were in their second year, followed by those in their third year (39.9%), while only one student (0.4%) was doing a B-Tech qualification.

The majority of the respondents in this study (79.8%) were of the view that the aim of offering entrepreneurship at DUT was to equip students with the necessary business skills required when starting and growing a business. Entrepreneurship education may be

defined as a structured formal transference of business “know-how”, which, in turn, refers to the concepts, skills, and mental consciousness applied by individuals during the process of starting and developing their business ventures (Isaacs *et al.* 2007; Musetsho and Lethoko 2017).

The findings from the study are important as they reflect what the participants expect to gain from an entrepreneurship programme offered at DUT, and one may conclude that DUT students view entrepreneurship education as a tool that can equip them with the necessary entrepreneurial skills. Notwithstanding this general view, the majority of the respondents in this study (55.9%) leaned towards preferring to pursue employment after graduation rather than starting their own businesses. This may be attributed to the financial security gained from formal employment, compared to the risks associated with starting one’s own business. A considerable number of students prefer the assured income of formal employment as opposed to the risks related with entrepreneurship, as was revealed in the studies of Ebewo and Shambare (2012) and Makgosa and Ongori (2012: 449).

In line with the above finding, the interviewees in this study lamented the fact that some of the students appeared uninterested in becoming entrepreneurs, even though they had been through the entrepreneurship programme. The reason proffered by the interviewees was that being employed offered more job security as compared to owning a business, and hence students choose this option. Additionally, the interviewees believed that students had no entrepreneurial enthusiasm for the DUT entrepreneurship programme. This view is attributed to a nonexistence of course structures to create entrepreneurs. Equally, other reasons supporting the lack of enthusiasm by students taking an entrepreneurship course could be attributed to it being a compulsory module within the qualification for which they are studying. In most cases, these students may not even have aspirations of venturing into business after graduation.

As an example, a radiography student aiming to become an entrepreneur in this field after graduation will find it almost impossible due to high entrance barriers. Barriers such as the procuring of sophisticated X-ray machinery and equipment require a reasonable capital injection to which students generally do not have access. Given this scenario, these students already know that they are going to work in hospitals after graduation, and they may not necessarily have an entrepreneurial inclination.

This finding is undeniably a contradiction of intent, since employment is not the objective or the output of entrepreneurship educational programmes (Shepherd 2008 ; Fatoki and Oni 2014;Musetsho and Lethoko 2017).The trend of students not pursuing entrepreneurship as a career of choice but instead opting to seek employment after graduation poses a serious problem, as it increases the unemployment rate in the country, which is already faced with the challenge of job shortages in the labour market.

The attainment of entrepreneurial expertise becomes a sought-after skill that will ultimately assist in alleviating the scourge of poverty and the high unemployment rate in South Africa. Ndedi and Bbenkele (2010) and Adusei (2016) observed that the country's entrepreneurial capacity is determined by how well the nation is training people to start their own businesses and being able to create jobs, not only for themselves but also for the rest of the people.

The findings that most respondents prefer seeking a job upon graduation do not detract from the finding that the majority of the respondents were in agreement with the impact that the DUT entrepreneurship programme has had on them after they have been through the programme. A significant majority of the participants (63.9%) were in agreement that while they had *no intentions of starting their own business immediately, they certainly wanted to start a business after graduation*. What this response alludes to is that the DUT entrepreneurship programme does have an impact on students' future career decisions. This finding was strengthened by observations by one of the lecturers interviewed for this study. These observations included that, at first, when the course commenced, students tended to show very little interest in becoming entrepreneurs; however, as the programme progressed, their perceptions changed. Such changes are intensified when guest lecturers are invited to share their personal experiences, as a motivational facet of teaching the entrepreneurship module at DUT. In support of the above findings, Jorge-Moreno, Castillo and Triguer (2011) and Henry and Lewis (2018) stressed that studies have shown that entrepreneurship education plays a crucial role in grooming entrepreneurial inclinations amongst youth graduates. Furthermore, Onguntimehin (2018: 285) stated that it can be concluded that the introduction of entrepreneurship education to university students will gear up entrepreneurial proclivity in students, and, if the syllabus is properly structured, it can be an important factor in reducing the continuing unemployment among graduates.

The study also highlighted that the majority of the respondents were confident of the business skills that they had attained from the entrepreneurship programme offered at DUT, which they saw as increasing their business acumen. When asked in terms of statement Q5d, "Taking a course or a programme in entrepreneurial studies has improved my business acumen", it emerged that the level of agreement (85.6%) was significantly higher than the disagreement (14.4%). This suggests that the participants were of the view that taking a course in entrepreneurial studies improved their overall business acumen. Additionally, and in respect of statement Q5e, "With the skills I have obtained from the entrepreneurship programme, I want to start a business", it emerged that the majority of the respondents (82.7%) were in significant agreement as compared to those who were in disagreement (17.2%).

These findings also reveal and reinforce the notion that entrepreneurship programmes do have an impact on students' entrepreneurial inclinations and business skills. It may be

safe to state that the DUT entrepreneurship programme has an impact on students' entrepreneurial inclinations; however, these students still have the fear of taking the immediate plunge into opening their own businesses. The seed is planted and may germinate in the future. This conclusion is supported by Shambane (2013) and Henry and Lewis (2018) who stated that an entrepreneur's skill in starting and operating a business is very much linked with business-related experience and education. Moreover, it has been discovered that the youth's educational level can have a positive impact on their entrepreneurial inclination, particularly within the current knowledge-environment era (Sadeghi *et al.* 2013; Jones and Iredale 2016). Therefore, training programmes that deliver entrepreneurial expertise are essential for inculcating entrepreneurial inclination and creating tertiary institutions that promote a breeding ground for producing graduate entrepreneurs for South Africa's economy.

According to Fatoki and Oni (2014: 2039), higher learning institutions are very effective platforms that can be used to foster entrepreneurial mind-sets amongst the youth through inculcating relevant skills and knowledge on the subject of calculated risks and the rewards of entrepreneurial ventures, opportunity identification and recognition skills, and forming and growing entrepreneurial ventures. Furthermore, the curriculum in the institutions of higher learning should incorporate skills that can be taught and learned (Fatoki and Oni 2014; Musetsho and Lethoko 2017).

Given the perceived concern, it was important to know whether the course duration was sufficient to equip the participants with the necessary entrepreneurial skills needed to start their own businesses. It was revealed that 54.0% of the participants acknowledged that the course duration had adequately equipped them with the entrepreneurial skills needed to start a business, while the remaining 46% of the participants disagreed. The duration of a learning programme is critical for successful outcomes. The results are relatively close, which highlights a serious examination of the duration of the entrepreneurship programmes offered at DUT. A lecturer interviewed pointed out that one of the constraints is, notably, the course duration.

DUT only offers this module in the first semester at first-year level, unlike other institutions where it is offered as a qualification (i.e., diploma or degree in entrepreneurship). Hence the time allocated to students for this module is not enough for it to yield the anticipated results. According to Brijlal (2008) and Tengeh, Iwu and Nchu (2015), numerous entrepreneurship programmes offered at tertiary institutions are short courses or electives, and this has a constraining effect on their success in producing entrepreneurs. From the above, it is safe to state that the 1-semester entrepreneurship module is not enough to equip students with the necessary entrepreneurial skills such that they can become enterprising individuals. The sufficiency of the course duration should also be analysed against the learning methodology. The majority of the respondents (71.8%)

believed that the entrepreneurial programme curriculum offered at DUT, including its learning methodology, needs a change.

The curricula offered in institutions of higher learning are lacking where substance and the delivery methods used to teach students are concerned. As a result, they do not accomplish the anticipated outcomes (Radipere 2012; Musetsho and Lethoko 2017). South Africa's entrepreneurship education challenges include a general absence of entrepreneurial aspects in the education system, poor learning techniques, and education programmes that are not focused on results or skills improvement. This might be due to the failure of South Africa's educational system to promote entrepreneurship as a viable career choice (Zondo 2016: 37).

The findings also revealed that a high number of the participants (71.8%) had called for a change in the entrepreneurial programme curriculum as well as the learning methodology, and one sample test was further used to measure their views on recommended changes to the teaching approach and curriculum at DUT. When asked in terms of statement Q13a, "I prefer the theoretical aspect of teachings in respect of entrepreneurship education", a significant majority of the participants (56.4%) agreed, while the other 42.7% of the participants disagreed about preferring the theoretical aspect of teaching entrepreneurship. However, the significant majority (63.7%) also affirmed that they preferred the practical teachings in entrepreneurship. This tends to show some ambivalence by the respondents about their preferences for a "practical" curriculum versus a theoretical curriculum.

Despite the above, the study strengthens the argument that a lack of practicality in the module presents a challenge to any entrepreneurial skills development course. In this study, the interviews revealed that, in recent years, DUT has adopted new strategies for teaching entrepreneurship education. These strategies entail a shift from a teaching- and learning-centric position to one based on student centredness. As part of the implementation of the aforesaid strategy, DUT uses contact lessons, guest lecturers, and former students who have succeeded in starting their own businesses. This delivery method is used as a motivating factor for entrepreneurship students with the anticipation that it will trigger their entrepreneurial drive to become entrepreneurs. At this point, there has not been a significant impact of this learning approach at DUT, hence the large response of 71% of the participants calling for changes in the learning methodology.

When the respondents were questioned about the preferred delivery method of entrepreneurship programmes, the significant majority (91.9%) were in agreement that they preferred an equal provision of the theoretical and practical delivery methods of entrepreneurship (Q13c). This is aligned with the pedagogy approach of giving equal weights to the practical and theoretical aspects to enhance sound knowledge. This is in line with Yaghoubi (2010), Makgosi and Ongari (2012), and Neck and Corbett (2018),

who maintained that education and business promotion are linked. Based on the foregoing assumption, these writers believed that while traditional university education helps to promote entrepreneurial awareness, placing too much emphasis on it without real entrepreneurship training fails to provide students with practical business skills. In this study, the significant majority of the participants (96.2%) agreed that what is needed is an enabling curriculum that incorporates innovation, technology, and the commercialisation of students' business ideas to develop entrepreneurs. Moreover, the significant majority of the participants (95.4%) believed that activities to get students involved in the start-up process is what truly matters, and that is what is missing in respect of the entrepreneurship curriculum (Q13e). Thus, it was emphasised by the significant majority of the respondents (93.6%) that a different approach needs to be developed specifically for the training of entrepreneurs through tertiary institutions.

As a result, academic institutions should implement teaching techniques that allow for the actual application of learned information as well as the development of the needed skill sets to encourage higher learning. While information is essential, the manner in which it is delivered is equally critical. The degree of participation of pupils is determined by the teaching methods used (Shambare 2011; Neck and Corbett 2018).

5.3 OBJECTIVE 2: To Examine the Benefits and Challenges Associated with Entrepreneurship Education at DUT

As pointed out earlier in this chapter, a significant percentage of the respondents (79.8%) supported the notion that the aim of offering entrepreneurship at DUT was to equip students with the necessary business skills towards starting and growing a business. Similarly, 91.3% of the respondents in this study were of the view that taking a programme in entrepreneurial studies has an effect on enhancing their future career direction towards self-employment and a chance to start their own businesses. This is certainly a positive finding; although this remains a perceptions-based study, one may conclude that these students, with the appropriate level of coaching and support through the entrepreneurship programme, should be more inclined towards becoming self-employed versus simply seeking a job. What may be gleaned from this finding is that DUT entrepreneurship education has an impact on students in terms of creating entrepreneurial awareness and imparting business skills.

This is in line with the views of Mentoor and Friedrich (2007) and Fayolle (2018), who observed that entrepreneurship education has three important objectives. Firstly, it aims to build an understanding among students about what entrepreneurship involves, given that it is crucial and is needed by all segments of society. Secondly, it is about grooming individuals for the business world, by teaching students how to become entrepreneurial and how to take charge of their careers and personal lives. Finally, enterprise education serves to train individuals to be entrepreneurs and managers.

Although the DUT entrepreneurship programme has had a positive impact on the respondents, they, nevertheless, have identified certain challenges with the current methods of teaching entrepreneurship. These challenges are seen as inhibiting their attempts to pursue self-employment after having been through the DUT entrepreneurship programme. In summary, the key challenge revolves around the delivery methodology and, specifically, the lack of a “learn by doing approach”, in other words, the practical nature of the programme. This problem is consistent with the observations of Yaghoubi (2010: 1906) and Makgosi and Ongari (2012: 247) that an overemphasis on theoretical education leads to a superficial view of entrepreneurship; this exacerbates the problem by creating the false impression that university graduates are ready for entrepreneurship when they are not. In most cases, they lack experience and technical competence in starting and running a business beyond what they have learned in school. Notably, when starting a firm is concerned, budding entrepreneurs face several obstacles and red tape. It is also worth noting that challenges identified by the respondents included, among other things, poor teaching delivery and a dearth of financial content in the programme. The respondents lamented the fact that the programme did not teach them the necessary skills of acquiring capital for starting a business. There is a litany of failed small business start-ups based on the singular factor of a lack of capital or funding for such businesses.

A challenge to budding entrepreneurs is that they do not know how to go about sourcing funding. Botha (2006) and Tengeh, Iwu and Nchu (2015) emphasised the fact that most curricula pay attention to the awareness aspects but lack information on the skills and attitudinal aspects that are important to the achievements of any potential or start-up entrepreneur. Furthermore, methods of teaching entrepreneurial education tend to focus mainly on equipping students with managerial skills (Nieman 2001; De Lannoy, Graham and Leibbrandt 2018). This is reinforced by Bester’s (2015) assertions that the curriculum is an isolated component that focuses purely on business management skills, while, on the other hand, what is needed is an enabling mechanism in the curriculum that incorporates innovation, technology, and entrepreneurship using a more dynamic approach.

The respondents in the study also highlighted challenges with the delivery method for this module, which they saw as not contributing to “triggering students’ entrepreneurial intentions”. They complained that this module is not taught in a manner that would encourage them to pursue self-employment. In support of this view, Ndedi and Bbenkele (2010: 5) and Shambare (2013: 450) stated that the one crucial component that is lacking in most entrepreneurship programmes in South Africa is their failure to teach or stimulate the start-up process of entrepreneurial ventures after the students have graduated.

5.4 Conclusion

The findings arising from the report of the analysis have been discussed with respect to the broader framework of the study. The following chapter addresses the conclusion and recommendations.

CHAPTER SIX

RESEARCH CONCLUSION AND RECOMMENDATIONS

6.1 Key Areas of the Findings

This study's literature revealed that entrepreneurship is a catalyst responsible for reviving declining economies and, consequently, increasing employment opportunities and improving standards of living. Entrepreneurship and small businesses have been observed to be important to the economic pulse of strong countries and nations and to be the foundation upon which the success of these economic systems is constructed. As a result, entrepreneurship has garnered a great deal of attention from corporations, governments, and academia. Global and local governments have made entrepreneurship development and entrepreneurship education a primary priority in order to revitalise their economies following the global economic crisis. On the same wavelength, tertiary institutions have made innumerable efforts to develop educational programmes that stimulate and increase entrepreneurial proclivity among students.

Although other experts believe that there is a positive correlation between entrepreneurship education and students' entrepreneurial inclination, South African tertiary institutions have not been able to boost the number of entrepreneurs in the country as envisioned; this is in line with the study's research goal, which was to assess the impact of entrepreneurship education on DUT students' future decisions.

According to the findings of this study, a significant number of the participants (79.8%) stated that the aim of offering entrepreneurship at DUT was to provide students with the necessary business skills required for starting and growing a business. Similarly, the substantial majority of the participants (91.3%) agreed with statement Q5c, "Taking a programme in entrepreneurial studies has an effect on enhancing my future career path towards self-employment and a possibility to start my own business". This suggests that students who pursue entrepreneurial degrees are more likely to become self-employed.

This research suggests that DUT entrepreneurship education has an influence on students in terms of developing entrepreneurial consciousness and business skills. As a result, the study's findings conclusively show that DUT's entrepreneurship programme has an impact on students' entrepreneurial skills and intentions. Furthermore, this research study demonstrated that the key component missing in DUT's entrepreneurship education is the failure to initiate the start-up process of entrepreneurial ventures once students have graduated, despite the fact that the DUT entrepreneurship programme has a positive impact on its participants. However, the participants identified certain challenges with the current methods of teaching entrepreneurship at DUT. It was also

observed that the most commonly identified factors that limit entrepreneurial activity at DUT are:

- the theory-centredness of the module;
- insufficient teaching time and poor innovative pedagogical methodologies;
- the lack of collaboration between academic and on-campus entrepreneurship support structures, which have caused these departments to function in silos; and
- Lack of access to start-up capital and the dearth of financial skills development in the entrepreneurship syllabus, which have been identified as a major deterrent for students to start their own businesses.

It is also worth noting that DUT has well-intentioned entrepreneurial support programmes and facilities in place, with the goal of creating a favourable entrepreneurial ecosystem within the institution, and, as a consequence, increasing the number of student entrepreneurs. It was, however, explicitly revealed that the techniques of teaching entrepreneurship must be modified. A significant majority of the participants (65.3%) agreed that developing a start-up capital system for students while studying is one of the teaching strategies that triggers entrepreneurial proclivity. This indicates that the majority of the participants regarded financial aspects of entrepreneurship as crucial in any form of entrepreneurial studies.

A prominent aspect emerging from the preceding discussion was that the provision of financial opportunities in the form of capital systems and business mentorship, particularly incubation environments, was critical for a business start-up. This study investigates the impact of entrepreneurship education on students in terms of imparting business skills and triggering business start-ups after receiving the necessary training. As a result, one sample test was employed to assess the association in the participants' scoring patterns. Table 4.14 in Chapter Four summarises the findings. A substantial majority (91.9%) agreed with statement Q15a, "Students should be judged on the submission of their business ideas for venture start-ups". Similarly, the large majority (96.5%) felt that DUT should provide business incubator facilities for students to test their start-up businesses (Q15b).

Concerning the source of funding for the start-ups, the significant majority (96.1%) were of the view that funding should be sourced from the government for student business start-ups. Moreover, the significant majority (96.2%) were in agreement with statement Q15d that entrepreneurship education should be practically focused, which allows students to learn as well as to make mistakes. Ultimately, the significant majority (97.5%) believed that this could empower DUT students across all academic disciplines to be entrepreneurially active after graduation and not only to rely on organisational employment.

Based on the foregoing, it is clear that DUT students consider the lack of effective entrepreneurship education methodologies to be a major setback. As a result, such gaps in the internal value chain of entrepreneurship development at DUT discourage students' intentions to pursue entrepreneurship career paths after receiving the necessary training. This reinforces the premise that a new approach, specifically for developing entrepreneurs through tertiary institutions, is required. As a result, the scourge of graduate unemployment will be alleviated.

6.2 Recommendations

The following recommendations are made after a careful analysis and discussion of the information obtained from this research:

1. The institution must offer an entrepreneurship qualification such that students who have intentions to pursue this career path can register for this qualification.
2. The institution needs to create mechanisms and systems that they can use to gauge the effectiveness or lack of effectiveness of the entrepreneurship programme for students.
3. The Department of Entrepreneurial Studies should regain full custodianship of the entrepreneurship education module, and all academic faculties at DUT must be serviced by subject specialists from the aforementioned department.
4. All SMME incubation initiatives implemented at DUT should be in consultation with this department, and such initiatives should be adequately promoted on and off campus.
5. Increased efforts should be directed at the provision of, and access to, business start-up capital for entrepreneurship students as well as assisting students in the commercialisation of their businesses.
6. The entrepreneurship education syllabus must have equally-balanced theoretical and practical component methods of learning this subject. Furthermore, these initiatives must be strongly linked with practical business exposure.
7. The institution must re-evaluate its entrepreneurship programme in order to ensure that it produces entrepreneurs, as urgently demanded by the South African economy, in order to alleviate the high unemployment rate, particularly amongst the youth.

6.3 Recommendations for Future Research

It is recommended that further research be conducted to understand issues regarding this subject in greater detail. The following topics concerning the impact of entrepreneurship education on students deserve further investigation:

- An in-depth understanding of entrepreneurship as a field of study and career choice in order for tertiary institutions to produce more entrepreneurs.
- Standardised methodologies to measure the impact of entrepreneurship education and the accepted success indicators.
- Development of a curriculum that teaches or stimulates the start-up process of entrepreneurial ventures after the students have graduated.

Future research needs to involve tertiary institutions, businesses, and relevant government departments. This research study was limited to DUT (Durban campuses only); therefore, it is fitting for future research to focus on other institutions in South Africa and abroad. This research study did not provide case studies on other tertiary institutions in terms of facilitating the development of entrepreneurs through education, since there is insufficient information on the topic. Therefore, it is recommended that future research on the impact of entrepreneurship education uses this case study when discussing future case studies.

6.4 Conclusion

In this final chapter, the major findings of the study were set out. This chapter also presented recommendations for future research. The findings of this study are significant as they will add to the pool of knowledge and, in addition, shed light on some barriers deterring tertiary students from pursuing self-employment after having gained the necessary entrepreneurial skills at DUT. Moreover, these findings can be used by DUT and other tertiary institutions for improved outcomes.

The sample design, with 274 respondents and including three academic staff members, was satisfactory. The personal delivery of the questionnaire and face-to-face interviews ensured more detailed responses and commitment. The receptiveness of the respondents, as well as the accessibility of DUT's campuses, eased the process of collecting data.

It is hoped that the findings of the research will inspire better synergy amongst the relevant stakeholders, namely, tertiary institutions, business incubators, and government agencies, consequently providing the necessary support and assistance as required by potential (student) entrepreneurs such that they are able to pursue entrepreneurship as a career. It is apparent that having collaborative efforts in the incubation and development of potential entrepreneurs will create an entrepreneurial ecosystem, thus increasing the number of entrepreneurs through tertiary education.

REFERENCES

Abor, J. and Quartey, P. 2010. Issues in SME development in Ghana and South Africa. *International Research Journal of Finance and Economics*, 39(6): 215-228. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Adusei, M. 2016. Does Entrepreneurship promote economic growth in Africa? *African Development Review*, 28(2): 201-214. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Ahmed, T., Chandran, V. G. R., Klobas, J. E., Liñán, F. and Kokkalis, P. 2020. Entrepreneurship education programmes: How learning, inspiration and resources affect intentions for new venture creation in a developing economy. *The International Journal of Management Education*, 18(1): 100-327. Available: https://scholar.google.co.za/ (Accessed 10 May 2021).

Alberti, F., Sciascia, S. and Poli, A. 2004. Entrepreneurship education: notes on an ongoing debate. In: *Proceedings of the 14th Annual International Entrepreneurship Conference, University of Napoli Federico II, Italy*. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Bagheri, A. and Lope Pihie, Z. A. 2013. Role of university entrepreneurship programs in developing students' entrepreneurial leadership competencies: Perspectives from Malaysian undergraduate students. *Journal of Education for Business*, 88(1): 51-61. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Baijnat, N. 2015. SATN Conference 2015: Growing the entrepreneurs. *Mail & Guardian*, 30 October to 5 November 2015. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Banerjee, A., Galiani, S., Levinsohn, J., McLaren, Z. and Woolard, I. 2008. Why has unemployment risen in the New South Africa? *Economics of Transition*, 16: 715-740. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Barba-Sánchez, V. and Atienza-Sahuquillo, C. Entrepreneurial motivation and self-employment: Evidence from expectancy theory. *Int. Entrep. Manag. J.*, 2017(13): 1097-1115. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Bell, R. 2016. Unpacking the link between entrepreneurialism and employability: An assessment of the relationship between entrepreneurial attitudes and likelihood of graduate employment in a professional field. *Education and Training*, 58(1): 2-17. Available: https://scholar.google.co.za/ (Accessed 10 May 2021).

Bell, R. 2021. Underpinning the entrepreneurship educator's toolkit: conceptualising the influence of educational philosophies and theory. *Entrepreneurship Education*, 1-18. Available: https://scholar.google.co.za/ (Accessed 13 May 2020).

Bernhofer, L. B. and Li, J. 2014. Understanding the entrepreneurial intention of Chinese students:The preliminary findings of the China Project of "Global university entrepreneurial spirits students survey"(GUESSS). *Journal of Entrepreneurship in Emerging Economies Journal of Entrepreneurship in Emerging Economies*, 6(1): 21-37.Available: https://scholar.google.co.za/ (Accessed 20 June 2016).

Boldureanu, G., Ionescu, A. M., Bercu, A. M., Bedrule-Grigoruță, M. V. and Boldureanu, D. 2020. Entrepreneurship education through successful entrepreneurial models in higher education institutions. *Sustainability*, 12(3): 1267. Available: https://scholar.google.co.za/ (Accessed 20 March 2020).

Bosma, N. S. and Levie, J. 2010. *Global Entrepreneurship Monitor 2009 Executive Report*. Available: https://scholar.google.co.za/ (Accessed 16 May 2014).

Brace, I. 2008. *Questionnaire Design: How to Plan, Structure and Write Survey Material for Effective Market Research*. London: Kogan Page. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Brijlal, P. 2011. Entrepreneurial perceptions and knowledge: A survey of final year university students. *African Journal of Business Management*, 5(3): 818-825. Available: https://scholar.google.co.za/ (Accessed 10 April 2015).

Bryman, A. and Bell, E. 2007. *Business research methods*. 2nd ed. Oxford: Oxford University Press.

Burger, L., Mahadea, D. and O'Neill, C. 2004. Perceptions of entrepreneurship as a career option in South Africa: An exploratory study among grade 12 learners. *South African Journal of Economic and Management Sciences*, 7(2): 187-205. Available: https://scholar.google.co.za/ (Accessed 15 May 2016).

Bux, S. 2016. The effect of entrepreneurship education programmes on the mind-set of South African youth. Doctoral dissertation, University of Pretoria. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Byabashaija, W. and Katono, I. 2011. The impact of college entrepreneurial education on entrepreneurial attitudes and intention to start a business in Uganda. *Journal of Developmental Entrepreneurship*, 16(01):127-144. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Carrier, C. 1999. Teaching creativity, innovation and entrepreneurship: on the necessity for new pedagogical paradigms. *Proceedings of the 44th Conference of the International Council for Small Business (ICSB)*. Naples, 3-20 June 1999, 1-25. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Cathy, A. 2003. *The Consortium for Entrepreneurship Education*. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Charney, A. and Libecap, G. D. 2000. *The impact of entrepreneurship education: an evaluation of the Berger Entrepreneurship Program at the University of Arizona, 1985-1999*. Available: https://scholar.google.co.za/ (Accessed 10 May 2015).

Chimucheka, T. 2012. *The Impact of Entrepreneurship Education on the Performance of Small, Micro and Medium Enterprises in the Buffalo City Metropolitan Municipality.* University of Fort Hare. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Co, M. J. and Mitchell, B. 2006. Entrepreneurship education in South Africa: a nationwide survey.*EducationandTraining*,48(5):348359.Available:http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Collet, H. 2013. Entrepreneurship education in Higher Education: are policy makers expecting too much? *Education and Training*, 55(8): 836-848. Available: https://scholar.google.co.za/ (Accessed 10 May 2015).

Crossman, A. 2016. *Quota Sample*. Available: http://sociology.aout.com/od/Types-of Samples/a/Quota-Sample.htm (Accessed 6 June 2016).

Dakung, R. J., Orobia, L., Munene, J. C. and Balunywa, W. 2017. The role of entrepreneurship education in shaping entrepreneurial action of disabled students in Nigeria. *Journal of Small Business & Entrepreneurship*, 29(4): 293-311. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Dana, L-P. 2018. *African Entrepreneurship Challenges and Opportunities for Doing Business*. Palgrave Macmillan. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Davey, T., Rossano, S. and van der Sijde, P. 2016. Does context matter in academic entrepreneurship? The role of barriers and drivers in the regional and national context. *The Journal of Technology Transfer*, 41(6): 1457-1482. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

De Lannoy, A., Graham, L., Patel, L. and Leibbrandt, M. 2018. *What drives youth unemployment and what interventions help? A Systematic Overview of the Evidence and a Theory of Change. High-level Overview Report*. Johannesburg, South Africa: Poverty & Inequality Initiative, University of Cape Town, & Centre for Social Development in Africa at the University of Johannesburg. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

DeTienne, D. R. and Chandler, G. N. 2004. Opportunity identification and its role in the entrepreneurial classroom: a pedagogical approach and empirical test. *Academy of Management Learning & Education*, 3(3): 242-257. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Devins, D., Johnson, S. and Sutherland, J. 2004. Employer characteristics and employee training outcomes in UK SMEs: a multivariate analysis. *Journal of Small Business and Enterprise Development*, 11(4): 449-457. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Dhliwayo, S. 2008. Experiential learning in entrepreneurship education: a prospective model for South African tertiary institutions. *Education and Training*, 50(4): 329-340. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Douglas, K. A., and Purzer, S,. 2015. Validity: Meaning and relevancy in assessment for engineering education research. *Journal of Engineering Education* 104 (2): 108–118. (Online) Available: https://scholar.google.co.za (Accessed 10 September 2022)

Driver, A., Wood, E., Segal, N. and Herrington, M. 2001. *Global Entrepreneurship Monitor: South African Executive Report*. Available: http://www.gemconsortium.org/document/download/1204207433925/GEM%202001 0/020SouthAfrica%20report.pdf (Accessed 22 March 2015).

Du Toit, A. 2018. Developing a framework for the effective structuring and implementation of entrepreneurship education in Consumer Studies. Doctoral dissertation, University of South Africa, Pretoria. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Duval-Couetil, N. 2013. Assessing the impact of entrepreneurship education programs: challenges and approaches. *Journal of Small Business Management*, 51(3): 394-409. Available: https://scholar.google.co.za/ (Accessed April 2015).

Eaton, J., Kortum, S., Nieman, B. and Ramalis, J. 2011. *Trade and Global Recession* .National Bureau of Economic Research. Available: http://www.nber.org/papers/wl6666 (Accessed 29 April 2019).

Ebewo, P. E. and Shambare, R. 2012. The reason business plans of start-up ventures are rejected by South African financiers: Evidence from SIFE-TUT harmony fashion design business challenge. In: *Emerging Markets Conference of the International Management Research Academy (IMRA)*. London, 17-18. Available: https://scholar.google.co.za/ (Accessed 10 June 2017).

Edwards, L. J. and Muir, E. J. 2005. Promoting entrepreneurship at the University of Glamorgan through formal and informal learning. *Journal of Small Business and Enterprise Development*, 12(4): 613-626. Available: https://scholar.google.co.za/ (Accessed 10 June 2017).

European Survey of Higher Education Institutions. 2008. *Survey of Entrepreneurship in Higher Education in Europe*. Available: http://ec.europa.eu/enterprise/entrepreneurship/supportmeasures/trainingeducation/higheducsurvey.pdf (Accessed 25 January 2014).

Facebook.com. 2012. *History of Facebook*. Available: http://www.facebook.com/pages/History-of-Facebook/105185536206799 (Accessed 20 April 2018).

Falkäng, J. and Alberti, F. 2000. The assessment of entrepreneurship education. *Industry and Higher Education*, 14(2): 101-108. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2014).

Farani, A. Y., Karimi, S. and Motaghed, M. 2017. The role of entrepreneurial knowledge as a competence in shaping Iranian students' career intentions to start a new digital business.*European Journal of Training and Development*.41(1):83-100 Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Farrington, S., Gray, B. and Sharp, G. 2011. Perceptions of an entrepreneurial career: Do small business owners and university students concur? *Management Dynamics: Journal of the Southern African Institute for Management Scientists*, 20(2):1-17. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Fatoki, O. O. 2010. Graduate Entrepreneurial Intention in South Africa: Motivations and Obstacles. *International Journal of Business and Management*, 5(9): 87-98. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Fatoki, O. 2014. The entrepreneurial intention of undergraduate students in South Africa: The influences of entrepreneurship education and previous work experience. *Mediterranean Journal of Social Sciences*,5(7):294.Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Fatoki, O. and Chindoga, L. 2011. An investigation into the obstacles to youth entrepreneurship in South Africa. *Journal of International Business Research*, 4(2)161-169 Available: http://www.ccsenet.org/ibr.intemationalbusinessresearch (Accessed on 19 May 2016).

Fayolle, A. and Gailly, B. 2008. From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, 32(7): 569-593. Available: http://www.onlinelibrary.wiley.com (Accessed 15 November 2015).

Fayolle, A. and Gailly, B. 2015. The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, 53(1): 75-93. Available: https://scholar.google.co.za/ (Accessed 10 May 2021).

Goedhuys, M. and Sleuwaegen, L. 2000. Entrepreneurship and growth of entrepreneurial firms in Cote d'Ivoire. *The Journal of Development Studies*, 36(3): 123-145. Available: http://www.ccsenet.org/ibr.intemationalbusinessresearch (Accessed 19 May 2016).

Greater Good South Africa. 2007. *South Africa Alive with Possibility*. Available: http://www.greatergoodsa.co.za (Accessed 26 March 2014).

Guerrero, M., Cunningham, J. A. and Urbano, D. 2015. Economic impact of entrepreneurial universities' activities: An exploratory study of the United Kingdom. *Research Policy*, 44(3): 748-764. Available: http://www.ccsenet.org/ibr.internationalbusinessresearch (Accessed 19 May 2016).

Gwija, S. A., Eresia-Eke, C. and Iwu, C. G. 2014. Assessing the impact of support structures and initiatives to youth entrepreneurship development in a selected Township in the Western Cape Province of South Africa. *Mediterranean Journal of Social Sciences*, 5(l): 61. Available: http://scholar.google.co.za/ (Accessed 13 May 2014).

Hameed, I. and Irfan, Z. 2019. Entrepreneurship education: a review of challenges, characteristics and opportunities. *Entrepreneurship Education*, 2(3): 135-148. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Henley, A. 2007. From entrepreneurial aspiration and transition to business start-up: evidence from British longitudinal data. *Entrepreneurship and Regional Development*, 19(3):253280.Available:http://citeseerx.1St.spu.edu./viewdoc/download?=doi=10.1.1470.9400&rep (Accessed 26 March 2014).

Henry, C. and Lewis, K. 2018. A review of entrepreneurship education research: Exploring the contribution of the Education + Training special issues. *Education and Training*,60(3):263-268. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Herrington, M. 2008. Entrepreneurship: enhancement through education: entrepreneurship. *Management Today*, 24(8): 44-46. Available: http://www.sabinet.com/ (Accessed 10 February 2014).

Herrington, M., Kew, P. and Mwanga, A. 2017. *South African Report*. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Hisrich, R. D., Peter, M. P. and Shepherd, D. A. 2008. *Entrepreneurship*. 7th ed. New York: McGraw-Hill Irwin. Available: https://scholar.google.co.za/ (Accessed 10 May 2015).

Horn, G. 2006. Educational solutions to improve the employability of senior high school learners. *South African Journal of Education*, 26(1): 113-128. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Hytti, U. and O'Gorman, C. 2004. What is "enterprise education"? An analysis of the objectives and methods of enterprise education programmes in four European countries. *Education and Training*, 46(1): 11-23. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Jones, B. and Iredale, N. 2016. Case study: international development in Ukraine. *Journal of Enterprising Communities: People and Places in the Global Economy*, 2(4): 387-401. Available: https://scholar.google.co.za/ (Accessed 10 March 2018).

Kabongo, J. D. and Okpara, J. O. 2009. Are higher education institutions in sub-Saharan Africa seeking to make students more enterprising? *African Journal of Business and Economic Research*, 4(1): 57-72. Available: https://scholar.google.co.za/ (Accessed 10 February 2012).

Karimi, S. 2014. *Analysing and promoting entrepreneurship in Iranian higher education: entrepreneurial attitudes, intentions and opportunity identification*. Wageningen University. Available: https://scholar.google.co.za/ (Accessed 10 February 2015).

Karimi, S., Biemans, H. J., Lans, T., Chizari, M. and Mulder, M. 2016. The impact of entrepreneurship education: a study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management*, 54(1): 187-209. Available: https://scholar.google.co.za/ (Accessed 16 June 2016).

Karimi, S., Chizari, M., Biemans, H. J. and Mulder, M. 2010. Entrepreneurship education in Iranian higher education: The current state and challenges. *European Journal of Scientific Research*, 48(1): 35-50. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kariv, D. 2011. *Entrepreneurship: An international introduction*.Routledge, Taylor & Francis. Available: https://scholar.google.co.za/ (Accessed 10 June 2015).

Kgagara, M. R. 2011. An assessment of the attitude towards entrepreneurship among higher education students in Sedibeng district. Doctoral dissertation, North-West University. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kirby, D. A. 2004. Entrepreneurship education: can business schools meet the challenge? *Education and Training*, 46(8/9): 510-519. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kirby, D. and Ibrahim, N. 2012. An enterprise revolution for Egyptian universities. *Education, Business and Society: Contemporary Middle Eastern Issues*, 5(2): 98-111. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kisubi, M. K., Korir, M. and Bonuke, R. 2021. The Impact of Entrepreneurship Education and Entrepreneurial Attitude on Entrepreneurial Intentions among Undergraduate Students in Uganda. *Business Management Review*, 23(2): 1-15. Available: https://scholar.google.co.za/ (Accessed 7 February 2020).

Knight, M. L. 2018. A Case Study of the Lived Experiences of Individuals: How Experiential Exercises Aid Entrepreneurship Teachers to Understand Intrapreneurship and the Art of Entrepreneurial Thinking. Doctoral dissertation, University of Regina. Available: https://scholar.google.co.za/ (Accessed 18 February 2020).

Kriewall, T. J., and K. Mekemson. 2010. Instilling the entrepreneurial mindset into engineering undergraduates. *Journal of Engineering Entrepreneurship* 1(1):5–19 (online) Available: https://scholar.google.co.za/ (Accessed 10 September 2022)

Kroon, J. and Meyer, S. 2001. The role of entrepreneurship education in career expectations of students. *South African Journal of Higher Education*, 15(1): 47-53.

Kuratko, D. F. 2005. The emergence of entrepreneurship education: development, trends, and challenges. *Entrepreneurship Theory and Practice*, 29(5): 577-598. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kuratko, D. F. and Audretsch, D. B. 2009. Strategic entrepreneurship: exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, 33(1): 1-17. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Kuratko, D. F., Morris, M. H. and Schindehutte, M. 2015. Understanding the dynamics of entrepreneurship through framework approaches. *Small Business Economics*, 45(1): 1-13. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Lackéus, M. 2015. Entrepreneurship in education: What, why, when, how. *Background paper*. Available: https://scholar.google.co.za/ (Accessed 10 June 2017).

Lee, J., Kim, D. and Sung, S. 2019. The effect of entrepreneurship on start-up open innovation: Innovative behavior of university students. *Journal of Open Innovation: Technology, Market, and Complexity*, 5(4): 103. Available: https://scholar.google.co.za/ (Accessed 20 February 2020).

Lee, K., 2019. Assessing the assessment practices in entrepreneurship education in higher education. In *Proceedings of the European Conference on Innovation and Entrepreneurship*, ECIE (1: 581-588). ACPI.(online)Available: https://scholar.google.co.za/ (Accessed 10 September 2022)

Makgosa, R. and Ongori, H. 2012. Perceptions of entrepreneurial behaviour in Botswana. *International Journal of Learning and Development*, 2(3): 247-259. Available: https://scholar.google.co.za/ (Accessed 10 June 2016).

Malebana, M. J. 2017. Knowledge of entrepreneurial support and entrepreneurial intention in the rural provinces of South Africa. *Development Southern Africa*, 34(1): 74-89. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Malebana, M. and Swanepoel, E. 2014. The relationship between exposure to entrepreneurship education and entrepreneurial self-efficacy. *Southern African Business Review*, 18(1): 1-26. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Maresch, D., Harms, R., Kailer, N. and Wimmer-Wurm, B. 2016. The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological Forecasting and Social Change*, 104: 172-179. Available: https://scholar.google.co.za/ (Accessed 18 April 2018).

Margolis, D.N., 2014. By choice and by necessity: Entrepreneurship and self-employment in the developing world. *The European Journal of Development Research*, *26*(4), pp.419-436.Available: https://scholar.google.co.za/ (Accessed 15 April 2016).

Martin, B. C., McNally, J. J. and Kay, M. J. 2013. Examining the formation of human capital in entrepreneurship: a meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, 28(2): 211-224. Available: https://scholar.google.co.za/ (Accessed 10 May 2016).

May, T. 2011. *Social research: Issues, methods and process*. 4th ed. London: McGraw-Hall Education.

Mbele, K.G.P., 2016. *Factors affecting young prospective entrepreneurs in the Umdoni Local Municipal Area* (Doctoral dissertation) Durban University of Technology. Available: https://scholar.google.co.za/ (Accessed 16 June 2018).

Miranda, C., Goñi, J., Berhane, B. and Carberry, A., 2020. Seven challenges in conceptualizing and assessing entrepreneurial skills or mindsets in engineering entrepreneurship education. *Education Sciences* 10(11): 309. (online) Available: https://scholar.google.co.za/ (Accessed 10 September 2022)

Morris, M. H. and Liguori, E. 2016. Preface: Teaching reason and the unreasonable. In: *Annals of entrepreneurship education and pedagogy–2016*. Edward Elgar Publishing. Available: https://scholar.google.co.za/ (Accessed 18 March 2018).

Mosey, S. and Binks, M. 2011. Developing opportunity-identification capabilities in the classroom: visual evidence for changing mental frames. *Academy of Management Learning & Education*, 10(2): 277-295.

Mudaly, S. 2013. A research model to improve understanding of the extent of the usage of enterprise resource planning systems in a University. M-Tech, Durban University of Technology. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Musetsho, T. R. and Lethoko, M. X. 2017. An evaluative study on the effect of entrepreneurial education curriculum on students at the University of Venda, South Africa. *The Independent Journal of Teaching and Learning*, 12(1): 74-89. Available: https://scholar.google.co.za/ (Accessed 10 February 2019).

Mwasalwiba, E. S. 2010. Entrepreneurship education: a review of its objectives, teaching methods, and impact indicators. *Education and Training*, 52(1): 20-47. Available: https://scholar.google.co.za/ (Accessed 10 February 2016).

Nabi, G., Holden, R. and Walmsley, A. 2010. Entrepreneurial intentions among students: towards a re-focused research agenda. *Journal of Small Business and Enterprise Development*, 17(4): 537-551. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Nabi, G., Liñán, F., Fayolle, A., Krueger, N. and Walmsley, A. 2017. The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, 16(2): 277-299. Available: https://scholar.google.co.za/ (Accessed 18 February 2019).

Nanda, R. and Sørensen, J. B. 2010. Workplace peers and entrepreneurship. *Management Science*, 56(7): 1116-1126.

Naong, M. N. 2019. Attitudes of academics towards mandatory inclusion of entrepreneurship within academic programmes, a South African case-study. *Journal of Contemporary Management*, 16(1): 225-254. Available: https://scholar.google.co.za/ (Accessed 20 June 2020).

Naudé, W. 2010. Entrepreneurship, developing countries, and development economics: new approaches and insights. *Small Business Economics*, 34(1): 1. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Nchu, R. M. 2015. The effectiveness of entrepreneurship education in selected high schools in the Cape Town metropolitan. Doctoral dissertation, Cape Peninsula University ofTechnology.Available:http://etd.cput.ac.za/bitstream/handle/20.500.11838/2102/213092638_Nchu_RM_MTech_Entrep_Bus_2016.pdf?sequence=1 (Accessed 30 May 2017).

Ndedi, A. 2009. Entrepreneurship training and job creation in South Africa: are tertiary institutions filling the gap? *Journal of Contemporary Management*, 6(1): 441-462.

Neck, H. M. and Corbett, A. C. 2018. The scholarship of teaching and learning entrepreneurship. *Entrepreneurship Education and Pedagogy*, 1(1): 8-41. Available: https://scholar.google.co.za/ (Accessed 16 December 2018).

Neergaard, H. and Christensen, D. 2017. Breaking the waves: Routines and rituals in entrepreneurship education. *Industry and Higher Education*, 31(2): 90-100. Available: https://scholar.google.co.za/ (Accessed 10 May 2018).

Neergaard, H., Gartner, W. B., Hytti, U., Politis, D. and Rae, D. 2020. Editorial. *International Journal of Entrepreneurial Behavior & Research*, 26(5): 817-828. Available: https://scholar.google.co.za/ (Accessed 10 May 2021).

Nicholson, O. ed. 2018. *The Oxford dictionary of late Antiquity*.Great Claredon Street,Oxford. Oxford University Press.

Nieman, G. 2001. Training entrepreneurs and small business enterprises in South Africa: a situational analysis. *Education and Training*, 43(8/9): 445-450.

North, E. 2002. A decade of entrepreneurship education in South Africa. *South African Journal of Education*, 22(1): 24-27.

O'Brien, E., Cooney, T. M. and Blenker, P. 2019. Expanding university entrepreneurial ecosystems to under-represented communities. *Journal of Entrepreneurship and Public Policy*, 8(3): 384-407. Available: https://scholar.google.co.za/ (Accessed 10 February 2019).

Oguntimehin, Y. A. 2018. The relationship between entrepreneurship education and students' entrepreneurial intentions in Ogun State-Owned Universities, Nigeria. *KIU Journal of Humanities*, 3(2): 285-294. Available: https://scholar.google.co.za/ (Accessed 15 May 2020).

Oliver, P. 2003. *The student's guide to research ethics*. Maidenhead: Open University Press.

Oluwajodu, F., Blaauw, D., Greyling, L. and Kleynhans, E. P. J. 2015. Graduate unemployment in South Africa: Perspectives from the banking sector. *SA Journal of HumanResourceManagement*,13(1):19.Available:http://dx.doi.org/10.4102/sajhrm.v13i1.656 (Accessed 10 May 2014).

O'Neill, R.C., 2004. Entrepreneurship as a subject at university. *The South African experience"available at: www. Saber. uca. edu/research/icsb/1995/pdf/19 (accessed 29 May 2015)*.

Orford, J., Wood, E., Fischer, C., Herrington, M. and Segal, L. E. 2003. *Global entrepreneurship monitor, South African Executive Report*. Cape Town, South Africa: UCT Graduate School of Business.

Punch, F. K. 2005. *Introduction to social research: quantitative and qualitative approaches*. 2nd ed. London: Sage Publications Ltd. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Purzer, S., Fila, N. and Nataraja, K., 2016. Evaluation of Current Assessment Methods in Engineering Entrepreneurship Education. *Advances in Engineering Education*, 5(1):1.

Qunlian, H. 2011. The major difficulties and countermeasures of current university graduates' entrepreneurship in China. *Journal of Chinese Entrepreneurship*, 3(3): 228-239. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Racelis, A. D. 2014. Sustainable entrepreneurship in Asia: a proposed theoretical framework based on literature review. *Journal of Management for Global Sustainability*, 2(1): 49-72. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Radipere, S. 2012. South African university entrepreneurship education. *African Journal of Business Management*, 6(44): 11015-11022. Available: https://scholar.google.co.za/ (Accessed 10 May 2019).

Renko, M., Shrader, R. C. and Simon, M. 2012. Perception of entrepreneurial opportunity: a general framework. *Management Decision*, 50(7): 1233-1251. Available: https://scholar.google.co.za/ (Accessed 10 April 2015).

Sadeghi, M., Mohammadi, M., Nosrati, M. and Malekian, K. 2013. The role of entrepreneurial environments in university students entrepreneurial intention. *World Applied Programming*, 3(8): 361-366. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Sadek, T. 2014. Establishing an Entrepreneurial Ecosystem around Mid-Size Traditional Research Universities in Canada. Doctoral dissertation. McMaster University . Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Saks, N. T. and Gaglio, C. M. 2002. Can opportunity identification be taught? *Journal of Enterprising Culture*, 10(04): 313-347. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

San Tan, S. and Ng, C. F. 2006. A problem-based learning approach to entrepreneurship education. *Education and Training*, 48(6): 416-428. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Schmidt, J. J. and Molkentin, K. F. 2015. Building and maintaining a regional inter-university ecosystem for entrepreneurship: Entrepreneurship education consortium. *Journal of Entrepreneurship Education*, 18(1): 157. Available: https://scholar.google.co.za/ (Accessed 10 February 2016).

Sekaran, U. and Bougie, R. 2013. *Research Methods for Business – A skill building Approach*. 6th ed. West Sussex .United Kingdom: John Wiley & Son LTD. Available: https://scholar.google.co.za/ (Accessed 10 May 2015).

Setiawan, J. L. 2014. Examining entrepreneurial self-efficacy among students. *Procedia - Social and Behavioral Sciences*, 115: 235-242. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Shambare, R. 2013. Barriers to student entrepreneurship in South Africa. *Journal of Economics and Behavioral Studies*, 5(7): 449-459. Available: https://scholar.google.co,za/ (Accessed 10 February 2014).

Shapero, A. and Sokol, L. 1982. *The social dimensions of entrepreneurship*. Englewood Cliffs: Prentice-Hall.

Songer, N. B., and M. A. Ruiz-Primo. 2012. Assessment and science education: Our essential new priority? *Journal of Research in Science Teaching* 49 (6):683–690) (online) Available: https://scholar.google.co.za/ (Accessed 10 September 2022)

Tengeh, R. K., Iwu, C. G. and Nchu, R. M. 2015. *The embeddedness of entrepreneurship education in the curricula of non-business university programmes: Preliminary evidence*

from South African Universities of Technology. Available: https://scholar.google.co.za/ (Accessed 10 February 2016).

Turker, D. and Selcuk, S. S. 2009. Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training*, 33(2): 142-159. Available: http://www.emeraldinsight.com/0309-0590.htm (Accessed 10 February 2015).

United Nations Development Programme (UNDP). 2007. *The legal empowerment of the Poor: Informal business*. Cape Town, South Africa: United Nations Development Programme. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Urban, B. and Barreira, J. 2007. Insights into techno-preneurship: Self-employment Perceptions among engineering students. *South African Journal of Higher Education*, 21(5): 568-569. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Urbano, D., Aparicio, S., Guerrero, M., Noguera, M. and Torrent-Sellens, J. 2017. Institutional determinants of student employer entrepreneurs at Catalan universities. *Technological Forecasting and Social Change*, 123: 271-282. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Urbano, D. and Guerrero, M. 2013. Entrepreneurial universities: socioeconomic impacts of academic entrepreneurship in a European region. *Economic Development Quarterly*, 27(1): 40-55. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Van Praag, C., van der Sluis, J. and Vijverberg, W. 2005. Entrepreneurship selection and performance: a meta-analysis of the impact of education in less developed countries. *The World Bank Economic Review*, 19(2): 225-261. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Van Rensburg, L. J. 2010. *National Report into the state of entrepreneurship. Can entrepreneurship be taught and learned?* Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Vesalainen, J. and Pihkala, T. 2000. Entrepreneurial identity, intentions and the effect of the push-factor. *International Journal of Entrepreneurship*, 4: 105. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Vivarelli, M. 2012. Entrepreneurship in advanced and developing countries:A microeconomic perspective.

Von Broembsen, M., Wood, E. and Herrington, M. 2005. *Global entrepreneurship monitor: South African report 2005*. The UCT Centre for Innovation and Entrepreneurship, 14-27. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Wagner, C., Kawulich, B. and Garner, M. 2012. *Doing social research: a Global context*. London: McGraw-Hill Higher Education. Available:https://scholar.google.co.za/ (Accessed 10 February 2014).

Welman, J. C. and Kruger S. J. 1999. *Research Methods for the Business and Administrative Sciences*. Cape Town, South Africa: International Thomson Publishing. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Williams, D. W. and Wood, M. S. 2015. Rule-based reasoning for understanding opportunity evaluation. *Academy of Management Perspectives*, 29(2): 218-236. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Yaghoubi, J. 2010. Study barriers to entrepreneurship promotion in agriculture higher education. *Procedia - Social and Behavioral Sciences*, 2(2): 1901-1905. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

Yam, R. C., Lo, W., Tang, E. P. and Lau, A. K. 2011. Analysis of sources of innovation, technological innovation capabilities, and performance: An empirical study of Hong Kong manufacturing industries. *Research Policy*, 40(3): 391-402. Available: https://scholar.google.co.za/ (Accessed 10 February 2014).

Yin, R. K. 2010. *Qualitative Research from Start to Finish*. New York, NY: Guilford Publications.Zhang, F., Wei, L., Sun, H. and Tung, L. C. 2019. How entrepreneurial learning impacts one's intention towards entrepreneurship: A planned behavior approach. *Chinese Management Studies*, 13(1): 146-170. Available: https://scholar.google.co.za/ (Accessed 10 March 2020).

Zondo, R. W. D. 2016. *Elusive search on the influence of entrepreneurship education in the private institutions of higher learning in South Africa: A paradigm for developing students into innovative thinkers*. Available: https://scholar.google.co.za/ (Accessed 15 February 2016).

APPENDIX A: Permission Letter to Conduct Research at the Durban University of Technology

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946

26th June 2018

Mr Mthokozisi Mzimela
c/o Department of Entrepreneurial Studies and Management
Faculty of Management Sciences
Durban University of Technology

Dear Mr Mzimela

PERMISSION TO CONDUCT RESEARCH AT THE DURBAN UNIVERSITY OF TECHNOLOGY

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research and Innovation Committee (IRIC) has granted full permission for you to conduct your research "The impact of entrepreneurship programmes on students' future career decisions: A case study of the Durban University of Technology" at the Durban University of Technology.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

We would be grateful if a summary of your key research findings can be submitted to the IRIC on completion of your studies.
Kindest regards.
Yours sincerely

_____

PROF CARIN NAPIER

DIRECTOR (ACTING): RESEARCH AND POSTGRADUATE SUPPORT DIRECORATE

APPENDIX B: Informed Letter of Consent to Respondents

Faculty of Arts and Design

Department of Fashion & Textile Studies

Dear Participant

I Mthokozisi Mzimela ID. 8508095676080 I am currently studying towards a Master's degree in Business Administration management, with the area of study being "**The impact of entrepreneurship programmes on students' career decisions at the Durban University of Technology".** I would be delighted and most grateful if you assist by responding to the interview questions.

Your information will be treated as strictly confidential and will only be used for academic purposes. There is no right or wrong answers. Please tick each box that you find most acceptable.

For further information, you are welcome to refer to the following contacts

Student: Mthokozisi Mzimela 074 7985920 mnmzimela@gmail.com

Supervisor / Promoter :Dr.G Chetty 0836416444/0313732662 gchetty@vodamail.co.za

APPENDIX C: Letter of Consent

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, **Mthokozisi Mzimela** about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number:
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, MthoKozisi Mzimela herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	**Date**	**Signature**
_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**
_____	_____	_____

APPENDIX D: Questionnaire

DURBAN UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF MANAGEMENT AND ENTREPRENEURIAL STUDIES
Researcher: Mr Mthokozisi Nkululeko Mzimela (074 7985920)
Supervisor: Dr. G Chetty (031 373 2662)

The purpose of this survey is to solicit information from undergraduate students registered for a module in Entrepreneurship Education at the Durban University of Technology. The main aim of this study is to critically assess the impact of entrepreneurship programs on students' future career decisions, which is to be a job seeker or to establish one's own business. The completion of the survey is voluntary and does not require your name, address, or telephone number. The questionnaire can be completed in less than 15 minutes.

SECTION: A
(Please mark with (X) in the appropriate blocks)
RESPONDENT PERSONAL INFORMATION

BACKGROUND INFORMATION

1. Gender:	
Male	
Female	

2. Tick your age group:	
18-20	
20-30	
31-40	

LEVEL OF EDUCATION

3. Please state the qualification you are studying towards and the level of study (e.g ND:Retail Business Management)	**Level of study (e.g 2nd year)**

SECTION: B

4. What is your understanding of the aim of offering entrepreneurship programme to students at the Durban University of Technology?	**Please mark with (X) the appropriate blocks**
To allow students to become better employees that have good business acumen	

5. Please tick the most appropriate box Statement:	Strongly Agree 1	Agree 2	Disagree 4	Strongly Disagree 5
Entrepreneurship education builds up an understanding among students about what entrepreneurship involves, given that it is very crucial and needed for all segments of society.				
An Enterprise education is about grooming individuals for the business world by teaching students on how to take charge of their careers and personal lives.				
Taking a programme in Entrepreneurial studies has an effect on enhancing my future career direction towards self-employment and a chance to start my business				
Taking a course or a programme in Entrepreneurial studies has improved my business acumen				
With the skills I have obtained from the Entrepreneurship programme, I want to start a business				
To make students realize that entrepreneurship can be made a career of choice				
To equip students with the necessary business skill required when starting and growing a business				

SECTION C:

6.Please tick the most appropriate box Statement :	Strongly Agree 1	Agree 2	Disagree 4	Strongly Disagree 5
I still want to be employed after graduating				
I had no intentions of starting my own business but, now I want to start my own business after graduating				
I prefer to be employed in an organisation that provides stable financial security than starting a business.				

7. Do you see any challenges with the current methods of teaching entrepreneurship education that may restrict you from pursuing self-employment?

Yes No

If yes, please explain

8. Has DUT's entrepreneurship education course developed your entrepreneurial skills and abilities?

Yes No

9. Does the current methods of teaching entrepreneurship education at D.U.T. help trigger business start-up with you?

Yes No

10. Has the entrepreneurship course that you have taken driven you to become an entrepreneur rather than a job seeker?

Yes No

11. Is the above course duration sufficient to equip you with the necessary entrepreneurial skills needed to start your own business?

Yes No

12. Is the Entrepreneurial Programme curriculum offered at DUT in need of any change including learning methodology?

Yes No

13.

Please tick the most appropriate box Statement :	**Strongly agree 1**	**Agree 2**	**Strongly disagree 3**	**Disagree 4**
I prefer the theoretical aspect of teachings in respect of entrepreneurship education				
I prefer the practical teachings in Entrepreneurship Education				
I prefer an equal provision of the theoretical and practical delivery methods of entrepreneurship education				
What is needed is an enabling curriculum that incorporates innovation, technology and commercialisation of students business ideas to develop entrepreneurs.				
Activities to get students involved in the start-up process is what really matters and that is what is missing in the respect of entrepreneurship curricular				
A different approach needs to be developed specifically for the training of entrepreneurs through tertiary institutions				

14. Please tick the most appropriate methods that you feel can trigger business start-ups, amongst students in an entrepreneurship education programme at D.U.T	
Annual business plan competitions	
Annual invitation to research and development companies to cultivate new product development and fresh business ideas from students	
Develop a start-up capital system for students whilst studying	
Business mentorship from business leaders, visible and accessible on campus business incubators	
A specific qualification focusing on business should be designed (e.g. Diploma in Entrepreneurial studies)	

15. Please tick some of the ideas that will enhance the impact of entrepreneurship education on students and trigger business, if they were to be implemented by D.U.T

Please tick the most appropriate box Statement	**Strongly Agree 1**	**Agree 2**	**Disagree 4**	**Strongly Disagree 5**
Students should be assessed on the submission of their plans for business start –ups.				
DUT should set up business incubation facilities for students to test their start-up companies.				
Funding should be sourced from government agencies for student business start-ups.				
Entrepreneurship education should be practically focused which allows students to learn as well as make mistakes.				
Empower D.U.T students across all academic disciplines to be Entrepreneurially active after graduation and not only rely on organizational employment				

Thank you for your participation.

APPENDIX E: Interview Questions

Interview questions

1. From what I gather entrepreneurship education, at DUT is only offered as a module, not as a qualification, can you tell me a bit more about the way your entrepreneurship program is structured?
2. What are the objectives and the anticipated outcomes of entrepreneurship education as a field of study?
3. What skills and capabilities do you want your students to acquire from this module?
4. As compared to other institutions that offer entrepreneurship as a three- year course as opposed to a semester module, in your views does the semester module offering suffice in equipping with the necessary competence?

5. What strategies are used in ensuring advanced ways of teaching entrepreneurship and retaining the demanding academic standards of evaluation?
6. Can you explain how the assessment methods you currently use are matched to the expected learning outcomes?
7. How does DUT go about in insuring and designing assessments which allows students to demonstrate their achievement of the learning outcome?
8. Does the delivery method of entrepreneurship education at DUT, differ from what other institutions of higher learning are using?
9. What is it that makes DUT's Entrepreneurship Education different from other institutions and how does that contribute to real innovation and students' entrepreneurial inclination?
10. What are some of the perceptions that students have about entrepreneurship as a career option? How is your entrepreneurship program structured to change these perceptions?

11. In terms of getting the anticipated results are there any challenges associated with teaching entrepreneurship?
12. Does DUT assess the impact of entrepreneurship education on their students and what indicators do they Use?