Exploring the Implementation of Entrepreneurship Education in the UAE's Higher Education Institutions: Perspectives of Faculty Members, Academic Leaders and Policymakers

استقصاء تطبيق تعليم ريادة الأعمال في مؤسسات التعليم العالي في دولة الإمارات العربية المتحدة: وجهات نظر أعضاء هيئة التدريس والقادة الأكاديميين وصانعي السياسات

by

REEM THANI

A thesis submitted in fulfilment

of the requirements for the degree of

Doctor of Philosophy

at

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Professor Abdulai Abukari
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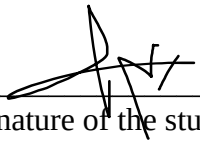

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ABSTRACT

Supporting entrepreneurship has recently become one of the most prominent national policies in the UAE in order to promote economic development. Consequently, entrepreneurship education is gaining more and more attention from the government, and higher education institutions are being called upon to play a vital role in promoting entrepreneurship. The purpose of this study is to examine the views of entrepreneurship faculty members, higher education institutions' academic leaders and government policy makers about the implementation of entrepreneurship education in higher education institutions in the UAE. The theoretical framework on which the study was based includes three components: human capital theory, the entrepreneurship education teaching model and experiential learning. The main data collection methods used for this qualitative study were semi-structured interviews and document analysis. Interviews were held with policy makers, higher education institutions' entrepreneurship faculty and academic leaders, as well as analysis of documents from the UAE government and participating higher education institutions, including the Stanford University programme in the US that trained UAE faculty members in entrepreneurship. A qualitative thematic data analysis approach was conducted to answer the research questions.

The findings of the study support the research in suggesting that entrepreneurship needs to be infused across the curricula of all undergraduate programmes in the UAE as a key competency. The findings also highlight the importance of creating entrepreneurship courses and programmes that are suitable for Emirati students through contexualisation and localisation of content and teaching methods. Based on the findings, the study recommends that the Ministry of Education in the UAE lead the development of

comprehensive national entrepreneurship education policies, as well as oversee the development of similar policies within higher education institutions. The study also recommends creating an environment in higher education institutions that is more conducive for entrepreneurship, including by offering various on-campus support services and by developing productive partnerships with industry and the community.

ملخص

تحظى ريادة الأعمال بدعم كبير من خلال السياسات الوطنية في دولة الإمارات وذلك لدورها المحوري في تعزيز التنمية الاقتصادية. لذلك يحظى تعليم ريادة الأعمال باهتمام حكومي متزايد، وبالأخص من خلال مؤسسات التعليم العالي التي يمكنها أن تؤدي دوراً حيوياً في تعزيز روح ريادة الأعمال بين الطلبة. الغرض من هذا البحث هو دراسة وجهات نظر أعضاء هيئة تدريس ريادة الأعمال والقادة الأكاديميين في مؤسسات التعليم العالي، وصنّاع السياسات الحكومية، حول تطبيق تعليم ريادة الأعمال في مؤسسات التعليم العالي في دولة الإمارات العربية المتحدة. يقوم البحث على إطار نظري مكون من ثلاثة عناصر هي: نظرية رأس المال البشري، ونموذج تدريس تعليم ريادة الأعمال، ونظرية التعلّم التجريبي. تم جمع البيانات في هذه الدراسة النوعية بأسلوبين رئيسيين هما: المقابلات شبه المنظمة، وتحليل الوثائق. وفي هذا الصدد، تم إجراء مقابلات مع صنّاع السياسات التعليمية، والقادة الأكاديميين وأعضاء هيئة تدريس ريادة الأعمال في مؤسسات التعليم العالي. كما تم تحليل عدد من الوثائق الحكومية، ووثائق مؤسسات التعليم العالي المشارِكة، بما في ذلك برنامج جامعة ستانفورد في الولايات المتحدة الأمريكية والذي من خلاله تم تدريب أعضاء هيئات التدريس في الإمارات على ريادة الأعمال. تم استخدام المنهج الكمي في تحليل البيانات عن طريق تحليل البيانات الموضوعي للإجابة على أسئلة البحث.

تدعم نتائج الدراسة مُقترح البحث والذي يقضي بوجوب إدخال ريادة الأعمال في المناهج الدراسية لكافة تخصصات مرحلة البكالوريوس في دولة الإمارات بكونها إحدى الكفاءات الرئيسية. كما تسلط النتائج الضوء على أهمية تقديم برامج ومساقات في ريادة الأعمال ملائمة للطلاب الإماراتيين، من خلال توطين محتوى وأساليب تدريس هذه البرامج والمساقات. وبناءً على النتائج التي توصل إليها البحث، توصي الدراسة وزارة التعليم في دولة الإمارات بقيادة عملية تطوير سياسات وطنية شاملة لتعليم ريادة الأعمال، وتوصيها كذلك بالإشراف على تطوير سياسات شبيهة في مؤسسات التعليم العالي. وتوصي الدراسة أيضًا بتهيئة بيئة أكثر ملاءمة لريادة الأعمال في مؤسسات التعليم العالي، من خلال، وعلى سبيل الذكر لا الحصر، تقديم خدمات دعم متنوعة داخل الحرم الجامعي، وتطوير شراكات منتجة مع الجهات المعنية في القطاع والمجتمع ككل.

قال رسول الله -صلى الله عليه وسلم- "إِنَّ اللَّهَ وَمَلاَئِكَتَهُ وَأَهْلَ السَّمَوَاتِ وَالأَرْضِ حَتَّى النَّمْلَةَ فِي جُحْرِهَا وَحَتَّى الْحُوتَ لَيُصَلُّونَ عَلَى مُعَلِّمِ النَّاسِ الْخَيْرَ"

"God, His angels and all those in Heavens and on Earth, even ants in their hills and fish in the water, call down blessings on those who instruct others in beneficial knowledge"

Prophet Mohammad (Peace be Upon Him)

Acknowledgment

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Chapter 1: Introduction

The purpose of this chapter is to introduce the state of integrating entrepreneurship education in higher education institutions in the United Arab Emirates (UAE). Entrepreneurship education is a means for supporting the UAE government's efforts towards Emiratisation as young Emiratis who receive entrepreneurship education could potentially prepare for careers in industries beyond just the government or private sectors. The chapter presents the study's problem statement, followed by the purpose of the study, objectives, and research question. The significance of the study, as discussed, shows limited research on general entrepreneurship education in the UAE. This chapter also includes the contextual background of the UAE and its educational system and policies. The chapter ends with definitions of the terms used in the dissertation.

1.1 Introduction and Background

Higher education students prepare to become productive citizens (Chan 2016; Quinlan 2011). According to Wiseman and Anderson (2014), recent discussions in the UAE show the shift from an economy reliant on natural resources, such as oil and gas, to a knowledge economy. Due to rapid socio-economic changes and the issues associated with the new knowledge economy, university educators have the challenging responsibility of preparing young people to perform in an uncertain, ever-changing economy (Casares et al. 2012; Ibrahim 2011; Kamel 2014; Wiseman, Alromi & Alshumarani 2014). The Emirates Competitiveness Council (2014) indicated that higher education is the "lifeblood of knowledge economies" (p. 1). Members of the higher education sector are considered essential active partners in the development of any nation's entrepreneurship processes (Erogul 2014). On the other hand, there is a worldwide consensus that entrepreneurship is central to societies' well-being (Kuratko 2005; Matlay 2005; Oosterbeek, van Praag & Ijsselstein 2008). Specifically, entrepreneurship is a driving force for

innovation, economic growth, and job creation in both developed and developing nations (Lackéus 2015). In light of this, policymakers around the globe emphasise and foster entrepreneurship in citizens.

In the UAE, governmental leaders have focused heavily on entrepreneurship. Policymakers are continuously improving policies and conditions to foster entrepreneurial activities (Erogul 2014). The UAE Vision 2021 (2010), for example, indicates that the nation will become a world leader in innovation, driven by entrepreneurship. According to the UAE's National Innovation Strategy, developing a national culture of innovation and entrepreneurship is a key strategy for producing innovative individuals in a knowledge economy (UAE National Innovation Strategy 2015). The nationwide entrepreneurial focus is manifested in a mandate on the integration of entrepreneurship education into the curricula of all disciplines in all UAE universities.

Ninety-eight percent of Emiratis have government jobs (Khalifa Fund 2013). In light of this state of affairs, Al-waqfi and Forstenlechner (2012) argued that the already oversaturated government sector cannot provide sufficient productive job opportunities for the growing numbers of Emirati university graduates. One result of such oversaturation is an Emirati unemployment rate of 14% (Khalifa Fund 2013). Over-dependency on government jobs requires solutions for sustainable employment and careers for the growing numbers of university graduates. Entrepreneurship is a viable solution to youth unemployment and over-dependency on government jobs (Awais, Tipu & Ryan 2016). Entrepreneurship can occur through investments made by the federal and local governments. Policymakers can provide financial support and promote and nourish entrepreneurial activity through government-owned establishments and start-up incubators (Thomson & Minhas 2017). As of 2019, the UAE has

17 accelerator programmes and 12 incubators (Dubai Start-up Hub 2019). The Global Entrepreneurship Monitor (GEM) indicated that UAE government leaders could build a strong entrepreneurship ecosystem through "extensive government support, a safe living environment, dynamic business culture, a strong start-up community and low taxes" (Bosma & Kelley 2018, p. 111). Erogul (2014) claimed that despite government efforts to encourage a culture of entrepreneurship, the entrepreneurial activity of Emirati youth is still "not at the desired state due to the high salaries and benefits provided by public-sector employment" (p. 195). Compared to benchmark countries, the UAE has the lowest rate of adult involvement in early-stage entrepreneurial activity, at 5.7% (Chabrak et al. 2016). Since Emiratis prefer to work in government jobs, their extreme underrepresentation in entrepreneurial-related activities is a challenge for the government's Emiratisation efforts (Awais, Tipu & Ryan 2016).

Focused development of entrepreneurship in citizens, especially in younger citizens, aligns with the global trend of integrating entrepreneurship education into the educational system. Two theoretical frameworks have been used extensively to support the focus of developing entrepreneurs (van Ewijk & Al-Aomar 2016). The first framework is Ajzen's (1991, 2014) theory of planned behaviour, which indicates that entrepreneurial intentions correlate with the increased probability of entrepreneurial behaviour. The second framework is Shapero-Krueger's model of entrepreneurial intentions (Krueger, Reilly & Carsrud 2000), which indicates that entrepreneurial intentions increase with entrepreneurship education (Krueger, Reilly & Carsrud 2000; Liñán, Rodríguez-Cohard & Rueda-Cantuche 2011; Nabi et al. 2017), which, in turn, justifies the integration of entrepreneurship education into the curricula of schools and universities. Researchers have extensively used and empirically tested both Ajzen's and Shapero-Krueger's frameworks in the field of entrepreneurship (Krueger, Reilly & Carsrud 2000; Lanero et al. 2011; Liñán 2004; Liñán et al. 2011; Oosterbeek, van Praag &

Ijsselstein 2008; Van Gelderen, van Praag & Brand 2008; Tsordia & Papadimitriou 2015; Farhangmehr, Gonçalves & Sarmento 2016).

Educators at higher education institutions usually integrate entrepreneurship education into business-school curricula; however, there is a growing interest in incorporating entrepreneurship education into other disciplines, such as the arts, sciences, humanities, and social sciences (Roberts et al. 2014). Some of the top industry start-ups in the UAE operate in media, social enterprise, food and beverage, education and educational technology, healthcare, and hospitality (Dubai Startup Hub 2019). Entrepreneurs play a role in many aspects of society, including business, science, sports, politics, and education (Lindner 2018). Entrepreneurship education is the means for stimulating students' entrepreneurial, creative, and innovative skills, irrespective of the subject of their major (Welsh, Tullar & Nemati 2017). In the context of this study, entrepreneurship education is important for higher education students in all disciplines.

1.2 Problem Statement

Entrepreneurship education has seen significant growth in the last 20 years (Deveci & Seikkula-Leino 2018; Manimala & Thomas 2012; Panigrahi 2016; Roberts et al. 2014). A positive correlation exists between entrepreneurship education and students' intentions and motivations to become entrepreneurs (Sánchez 2011; Støren 2014; Van Gelderen, van Praag & Brand 2008). Lorz (2011) conducted a systematic review of 41 research papers and found that the majority (33) showed that entrepreneurship education has a positive influence on students' entrepreneurial intentions and attitudes. Similarly, Nabi et al. (2017) found that, out of 81 articles in a systematic review of entrepreneurship education impact studies, 75% showed a positive impact on students' entrepreneurial intentions. However, because entrepreneurship education is an emerging field (Albornoz 2011; Lackéus 2015; van Ewijk 2018), ideas about what constitutes entrepreneurship education in terms of curricula content and teaching methods

are still under development (Blenker et al. 2011; Fayolle & Gailly 2008; Hannon 2007; Kirby 2004; Mwasalwiba 2010). Furthermore, different stakeholders are perplexed about the practice and implementation of entrepreneurship education (Lackéus 2015) because entrepreneurship as a phenomenon means different things to different people (Kuratko & Morris 2018). Whereas for some, entrepreneurship is about starting new businesses; others believe that entrepreneurship is about possessing skills such as creativity and proactivity in addition to the skills necessary to create new ventures. As a consequence, educators use one view or the other to design entrepreneurship courses, which results in inconsistent curricula.

Emiratisation of the workforce is a top priority for the UAE government (UAE government Portal 2019a). In August 2019, Vice President and Prime Minister Sheikh Mohammed bin Rashid Al Maktoum, ruler of the Emirate of Dubai, released a "Letter of the New Season" to UAE ministers, government officials, and the general public (The National 2019b). The letter included six messages, one of which was a renewed assurance of further Emiratisation. In the letter, Sheikh Mohammed bin Rashid Al Maktoum specifically mentions that "providing jobs for Emiratis was and will remain a top priority. Like other states in the East and West, we will closely follow up this issue and will hold accountable those negligent, and there will be new decisions as well" (*Gulf News* 2019a, para. 4). Leaders of the Ministry of State for Youth Affairs also launched the Youth Station to help young UAE citizens start their businesses (*Gulf News* 2019b). In addition to governmental efforts, educators must make changes to prepare young Emiratis for an ever-changing world and encourage them to look beyond government jobs (Malek 2018). Economic changes due to declining oil and gas resources, communication and information technology advancements, and the shift to knowledge economies (Ibrahim 2011) require higher educators to prepare students to maintain pace with the changing world and lead in various sectors.

Entrepreneurship is one of the most promising means for enabling future generations (Lackéus 2015); therefore, the UAE's government leaders continuously encourage higher educators to integrate entrepreneurship into their programmes (Eid et al. 2019). However, although government leaders emphasise the integration of entrepreneurship into education, a clear policy on university implementation guidelines and procedures does not exist. In an attempt to understand and analyse university entrepreneurship education, the researcher contacted the UAE's Ministry of Education (MoE) to obtain a copy of a policy on entrepreneurship education in higher education; the response, however, was that such a policy does not exist. Hamdan (2019) studied the relationship between entrepreneurship and economic growth in the UAE and found that the UAE experienced growth in the gross domestic product (GDP) and the non-oil sector during periods of entrepreneurial growth. Entrepreneurs create jobs, and job creation leads to economic development; therefore, entrepreneurship education policies must closely link to national economic and social development policies (Panigrahi 2016).

Entrepreneurial activity among Emirati youth is low not only when compared to youth of other nationalities living in the UAE but also in comparison with other countries (Khalifa Fund 2013). A potential reason for low entrepreneurial activity among this population is the limited integration of entrepreneurship education into higher education curricula in the UAE (Khalifa Fund 2013). A gap exists between entrepreneurial desire and entrepreneurial preparedness in UAE undergraduate students (Ashour 2016). Although entrepreneurship was the first career choice for young people in the UAE, many of them have not attended any entrepreneurship courses in school or college (Jabeen, Faisal & Katsioloudes 2017). Education, skills, and training are the most important factors for the development of female Emirati entrepreneurs (Al Matroushi et al. 2020). According to Hamdan (2019), a moderate percentage of Emiratis believe they have the required skills and knowledge to start new businesses. Jabeen et al. (2017)

asserted that there is a pressing need to integrate entrepreneurship into the UAE's educational system, starting from elementary school. Hamdan (2019) contended that all schools should provide entrepreneurship education at all educational levels and that faculty members who are entrepreneurs or have engaged in entrepreneurship should deliver the curriculum. In the same vein, Eid et al. (2019) suggested that educators design entrepreneurship programmes to change students' attitudes about entrepreneurship as a career choice. In addition, Erogul (2014) stated that beyond developing policies, the challenge is to facilitate innovative educational programmes to encourage young Emiratis to consider entrepreneurship as a career option.

Post-secondary entrepreneurship education can increase the quality and quantity of youth entrepreneurship activity (Chabrak et al. 2016; Nasiri & Hamelin 2018; Pauceanu et al. 2018). Studying stakeholders' views and understanding of any discipline could provide useful insights into the challenges and opportunities specific to that discipline. This study was a contribution to the research on entrepreneurship education through an examination of the views of entrepreneurship faculty members, university academic leaders, and policymakers in entrepreneurship education implementation in universities. As Fayolle (2013) stated, there exists a need for critical reflection on current entrepreneurship education practices to improve the field. Understanding participants' perspectives could provide ways of improving the implementation of entrepreneurship education in UAE universities.

1.3 Main Aim of the Study

The purpose of this study was to examine the views of entrepreneurship education faculty members, university academic leaders, and policymakers on the implementation of entrepreneurship education in the UAE's higher education institutions.

1.4 Objectives of the Study

The sub-objectives of this study were the following:

Objective 1: To explore how entrepreneurship faculty members, university academic leaders, and policymakers in the UAE understand entrepreneurship.

Objective 2: To understand the policy of entrepreneurship education in the UAE's higher education institutions.

Objective 3: To understand the implementation of entrepreneurship education in UAE undergraduate disciplines.

Objective 4: To understand the views of entrepreneurship faculty members, university academic leaders, and policymakers on the implementation of entrepreneurship education in undergraduate disciplines in the UAE.

Objective 5: To identify areas of possible development and recommendations for entrepreneurship education implementation in the UAE.

1.5 Research Questions

The study's main research question was the following: What are the views of entrepreneurship teaching faculty, university academic leaders, and educational policymakers on the implementation of cross-discipline entrepreneurship education in UAE universities? The study also included the following sub-questions:

Q1: How do entrepreneurship faculty members, university academic leaders, and policymakers understand entrepreneurship?

Q2: What is the UAE's entrepreneurship education policy?

Q3: How is entrepreneurship education currently implemented in undergraduate programmes in the UAE's higher education institutions?

Q4: What are the views of entrepreneurship faculty members, university academic leaders, and policymakers on the implementation of entrepreneurship education in undergraduate disciplines in the UAE?

Q5: What could members of the UAE's MoE and higher education institutions develop for improved implementation of undergraduate entrepreneurship education?

1.6 Significance of the Study

The global field of entrepreneurship education is still in its early stages (Farhangmehr et al., 2016; Lackéus 2015); thus, research on entrepreneurship education in the UAE is limited (El-Gohary, Selim & Eid 2016; van Ewijk & Al-Aomar 2016). Understanding the perspectives of stakeholders such as faculty members, academic leaders, and policymakers is essential as they can influence decisions about the delivery and implementation of entrepreneurship education in universities (Kilasi 2013). A comprehensive review of the literature on entrepreneurship education in the UAE indicates three major research gaps.

First, there is limited research on entrepreneurship education in higher education and on the views and understanding of faculty members and other stakeholders (Ashour 2016, Jabeen et al. 2017). Most researchers measured students' entrepreneurial intentions before and after enrolment in a university-level entrepreneurship module (Al Saiqal 2017; Bahrami 2014; Dutot & Horne 2015; Majumdar & Varadarajan 2013; Teh, Al-Dhaafri & Isakovic 2015) or undergraduate students' perceptions of entrepreneurship (Majumdar, Gallant & Varadarajan 2010; Sowmya, Majumdar & Gallant 2010). The majority of the research was quantitative. Leitch, Hill, and Harrison (2010) argued that the amount of quantitative research was the result of calls for more objective research on entrepreneurship after the tendency towards positivism in the management disciplines in the 20th century.

Second, the majority of research has focused on the integration of entrepreneurship education into business, economics, engineering, and information technology and innovation majors (Bataineh & Maamar 2016; El-gohary, Selim & Eid 2016; Majumdar, Gallant & Varadarajan 2010; Sowmya, Majumdar & Gallant 2010). There is limited research on entrepreneurship education in the other disciplines offered in UAE higher education institutions, such as the social sciences (Bahrami 2014; Jabeen, Faisal & I. Katsioloudes 2017; Teh, Al-Dhaafri & Isakovic 2015), or on how entrepreneurship education is integrated or could be integrated into other disciplines.

Third, most researchers have utilised quantitative methods, provided numerical results, and demonstrated causal relationships for in-depth insights. There exists a need for "more and better interpretivist research in entrepreneurship" (Leitch, Hill & Harrison 2010, p. 80). Leitch et al. (2010) argued that researchers should use improved interpretivist methodologies because entrepreneurship is a complex social phenomenon bounded and affected by contextual factors. Thus, researchers should adopt methods suitable for in-depth and context-specific investigations (Molina-Azorı et al. 2012). Researchers should choose their research methodologies by considering the research settings and participants' contextual factors because entrepreneurship is a practice-based discipline inseparable from its context (Leitch et al. 2010). Although both quantitative and qualitative research has its strengths and weaknesses, scholars can use qualitative research for an in-depth exploration of participants' views of and personal meanings derived from a phenomenon, which results in rich, in-depth information (Molina-Azorı et al. 2012).

This study fills the three aforementioned research gaps. It presents the views of entrepreneurship faculty members, university academic leaders, and policymakers on the

implementation of entrepreneurship education in UAE universities. The study also presents the participants' views on entrepreneurship education in majors beyond business, engineering, and information technology. UAE government leaders aim to develop the entrepreneurial skills of all undergraduate students, regardless of their fields of study: accordingly, scholars should study the perspectives of participants in disciplines other than business, engineering, and information technology. A qualitative design was appropriate for an in-depth investigation of the research problem to address the methodological gap. Stakeholders could use the results of this study to foster the development of a model for cross-discipline entrepreneurship education in UAE higher education institutions.

There is limited research on entrepreneurship education in the UAE. This study provides additional information on entrepreneurship education by filling the identified gaps in the literature on entrepreneurship education in the UAE. Therefore, policymakers, curriculum developers, and educators in higher education can use the study for improved integration of cross-discipline entrepreneurship education in the UAE.

1.7 Contextual Background – The United Arab Emirates

1.7.1 Formation of the UAE

The UAE is a relatively young nation. The UAE is a constitutional federation formed in 1971 between seven emirates (previously called Trucial Sheikhdoms, the Trucial States, or Trucial Coast): Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah, and Fujairah. Before the declaration of the union and since 1820, leaders of the Trucial States signed agreements with the British with requirements for the sheiks to keep coastal peace by refraining from building large ships and causing hostilities along the coast (UAE government Portal 2019b). Several agreements signed in 1892 were means to prevent Trucial State leaders from disposing of any of their territories or entering agreements with other governments without the

United Kingdom's consent (UAE government Portal 2019b). In exchange, the British provided protection against any attacks along the Trucial States' coastline and land (Crown Prince Court n.d.). In 1966, the late Sheikh Zayed bin Sultan Al Nahyan, then-ruler of Abu Dhabi, emphasised the importance of union and cooperation with other emirates (*National Archives* n.d.) and started a mission of bringing together the emirates to form a union. In 1968, the British announced their intention to cancel all agreements with the Trucial States and to withdraw British forces by the end of 1971 (*National Archives* n.d.; UAE Government Portal 2019b). This decision helped facilitate ongoing emirate unification efforts (*National Archives* n.d.).

The first move towards uniting the emirates occurred on February 18, 1968, when Sheikh Zayed and Sheikh Rashid bin Saeed Al Maktoum, then-ruler of Dubai, met to form a union between the two emirates in the Union Accord. The two sheiks then invited five other emirates, as well as Bahrain and Qatar, to join the new union in negotiations (*National Archives* n.d.). For the next three years, the leaders of the nine states negotiated to form the Federation of the Arab Emirates (UAE government Portal 2019b). In 1971, Bahrain and Qatar became independent and withdrew from the negotiations. With British withdrawal approaching by the end of the year, the remaining six emirates of Abu Dhabi, Dubai, Sharjah, Ajman, Um Al Quwain and Fujairah became the United Arab Emirates in July 1971 (*National Archives* n.d.), formally proclaiming independence on December 2, 1971. In February 1972, Ras Al Khaimah, the seventh of the former Trucial States, joined the union. Sheikh Zayed bin Sultan Al Nahyan was elected by his fellow rulers to serve as UAE president, with Sheikh Rashid bin Saeed Al Maktoum elected vice president. The rulers of the seven emirates joined to create the Federal Supreme Council of the UAE. The federal authorities in the UAE are (a) the Federal Supreme Council, (b) the president and the vice president, (c) the Cabinet or the Council of Ministers, (d) the Federal National Council, and (e) the Federal Judiciary. Since the discovery of oil in

the 1950s, the UAE underwent considerable economic growth, which indicated other trends, such as the development of human capital and the involvement of citizens in the country's advancement. As of 2018, the UAE's estimated population was more than 9.7 million (Central Intelligence Agency 2019). The official language of the UAE is Arabic and Islam is the official and most-practised religion.

1.7.2 Economy

Before the discovery of oil, the UAE's economy was mainly dependent on agriculture, fishing, and pearl diving (Crown Prince Court n.d.). In 2017, 48 years after its formation, the UAE was one of the wealthiest countries in the Middle East and the world, with a GDP of 1.422 trillion dirhams (UAE Ministry of Economy 2018). As of 2018, the UAE had a share of 8.2% of the world's reserve of crude oil (OPEC 2019), which is the seventh-largest reserve of crude oil in the world (Kamal 2018). The UAE's economy is the second-largest economy in the Gulf Corporation Council (GCC) after Saudi Arabia (Khan 2019). The UAE has one of the top-performing global economies, with economic growth forecast at three percent in 2020 (World Bank Group 2019). In 2015, UAE government leaders implemented the Emirates Science, Technology and Innovation Higher Policy with a 300-billion-dirham investment. The policy includes 100 national initiatives in sectors such as education, health, and energy for the transformation of the UAE into a knowledge economy (WAM 2015).

In 2010, the government launched UAE Vision 2021 and the National Agenda, both a nationwide vision and strategy with four overarching pillars: United in Prosperity, United in Knowledge, United in Destiny, and United in Responsibility. The four components include plans for the creation of a sustainable environment and infrastructure, world-class healthcare, a first-rate educational system, a competitive knowledge economy, public safety, a fair

judiciary, a cohesive society, and preserved identity. The development of a competitive knowledge economy is one of the main strategies of UAE Vision 2021 (2010). To achieve this goal, the National Agenda incorporates 12 indicators, including the share of "knowledge workers" in the labour force, the share of UAE nationals in the workforce, non-oil real GDP growth, the Global Competitiveness Index, and the Global Entrepreneurship and Development Index (UAE government 2010).

The UAE labour force mainly consists of foreign nationals or expatriates, who make up around 90% of the country's population (Kamal 2018). According to the United Nations, the UAE has the sixth-largest migrant stock in the world (United Nations 2017). Similar to other GCCs such as Kuwait and Qatar, the UAE is a "national-minatory state" (Koji 2011). This demographic imbalance is a result of the national development and state-building process that started in the 1970s when large numbers of expatriates came to the UAE because of the lack of skilled Emirati workers (Koji 2011). The growing number of expatriates and their increased employment in the UAE's various emerging sectors resulted in a high Emirati unemployment rate. The situation was multifaceted, and factors such as quality of education and training may have been contributors. More than 40 years later, the UAE faces the dilemma of unemployed UAE nationals, despite Emiratisation policies and initiatives. In September 2019, the prime minister and vice president launched 10 strategic resolutions to support Emiratisation. In addition to providing specialised training programmes for unemployed Emiratis, the resolutions include the amendment of labour and pension rules and exceptional incentives for employers who facilitate Emirati employment (Khaleej Times 2019a).

1.7.3 Education System

The UAE acknowledged the importance of education early on. One of the challenges faced is the education and development of nationals (Al-Shaiba 2014). When the UAE began in 1971, there was no internal educational infrastructure, and the majority of people were illiterate (Burden-Leahy 2009). Before the introduction of the UAE's modern education system, earlier forms of education took place in a *kuttab*, a school where youth learned the Holy Quran, Islamic teachings, reading, writing, and basic maths (Alhebsi, Pettaway & Waller 2015). The *Al Mutawa*, or the imam (speaker) of the masjid (mosque), taught in the *kuttab*. Emiratis educated abroad taught the first established formal schools in the early 20th century, as did Arab expatriates with Arab-imported curricula (Davidson 2008). In the 1950s, the first Kuwaiti educational mission school opened in the Emirate of Sharjah (Al Qasimi Foundation 2013). Kuwait, as one of the most civilised Arab countries at the time, provided support in opening, financing, and staffing eight schools across the Trucial States between the 1950s and 1970s (Davidson 2008). The curricula used in those schools were also from Kuwait, except for science education (Davidson 2008).

Following the discovery of oil, it has become critical for the UAE's national workers to develop in order to meet the rapidly growing economy (Al-Mulla 2018). Members of the MoE, established in 1971, faced the need to accommodate a large number of children, especially girls, outside the formal education system because of inadequate schools (Davidson 2008). The literacy rates in 1971 were less than 50% and 30% for males and females, respectively, over the age of 16 years (Davidson 2008). The ministry was successful in its efforts to increase the number of state schools from 129 in 1972 to 383 by the end of the 1970s (Davidson 2008). Primary education became mandatory for all Emirati boys and girls (Alhebsi, Pettaway & Waller 2015). The country's adult literacy rate, as of 2019, was close to 95% (Khaleej Times

2019b). In 1985, the first standardised national curriculum reform occurred and education became compulsory through Grade 12 for all Emirati boys and girls (Al Qasimi Foundation 2013). The latest curriculum reform launched in 2017 when members of the MoE significantly changed the programme to align with the strategic plan to prepare students for the future (UAE Government Portal 2019c). Today, public and private schools in the UAE provide 17 curricula for the country's diverse population (Kumar 2017). As of 2020, there are 619 public schools and 643 private schools: 288,794 students are in public schools and 810,537 students are in private schools (MoE 2020a). In May 2019, members of the UAE Cabinet approved the Advanced Skills National Programme to "ensure that Emiratis are fully prepared for an ever-changing society" (The National 2019a). The program includes several initiatives for imparting the skills required for Emiratis to advance the UAE's competitiveness in the global economy.

Providing a first-rate educational system is one of the pillars of the UAE Vision 2021 (UAE government 2010). As part of a federal government restructure in 2016, the MoE and the Ministry of Higher Education and Scientific Research merged into one ministry. Members of the new MoE oversee all levels of learning, from nurseries to higher education (The National 2016). Ministry members are responsible for the strategic supervision of education at the federal level and for increasing the educational system's productivity to achieve sustainable development for the UAE's society (UAE Cabinet n.d.). In 2017, ministry members launched the 2017 to 2021 strategy with the goal of "an innovative education system for building a knowledgeable and globally competitive society" (UAE Government Portal 2019c). The strategic plan has six foundational values: citizenship and responsibility; the principles and values of Islam; commitment and transparency; equality and justice; participation and accountability; and science, technology, and innovation (MoE 2017).

In addition to the ministry, local educational bodies provide co-supervision of private education in several emirates. Local educational bodies include the Abu Dhabi Department of Education and Knowledge, the Knowledge and Human Development Authority in Dubai, and the Sharjah Private Education Authority. Members of these entities are primarily concerned with the formation and implementation of regulation and inspection systems for private schools, technical and vocational education, training centres, and, in some cases, private higher education institutions in their respective emirates. Established in 2010, the National Qualifications Authority (NQA) was a means "to cope with the dramatic changes [the] UAE is witnessing at all levels, including changes within the economic and education and training sectors" (NQA n.d.). Members of the NQA implement a standardised national system of qualifications provided by various UAE educational institutions. In 2012, members of the NQA launched the National Qualifications Framework *QFEmirates*, which outlines the qualifications in the UAE and the requirements for those qualifications to compare to similar foreign qualifications (NQA 2012).

1.7.4 Higher Education

After the formation of the UAE, four policy decisions in the 1970s helped to advance higher education:

- The UAE would build and operate its own universities.
- Qualified faculty members who meet international standards would be employed.
- Instruction would be predominantly in English.
- Education was to be for all qualified Emiratis and would include women. (Ministry of Higher Education and Scientific Research 2007, p. 11)

The country's higher education landscape has grown tremendously since the 1970 establishment of the United Arab Emirates University (UAEU), the UAE's first federal

university. The Ministry of Higher Education and Scientific Research (now the MoE) was established in 1992 with the objectives of improving the performance and standards of higher education, improving the effectiveness of private higher education, supporting scientific research, and assisting UAE national students in joining the world's top universities (Al-Shaiba 2014). In 2017, members of the MoE launched the National Higher Education Strategy 2030 to build a knowledge economy through quality professional and academic education (MoE 2017). The strategy consists of four pillars:

1. Quality: Applying high-quality accreditation standards and providing incentives for institutions and distinguished teaching staff to enhance competitiveness and increase global rankings.
2. Efficiency: Achieving optimal productivity in higher education institutions and increasing the student completion rate. Effective funding mechanisms will also be put in place to ensure proper implementation of the strategy.
3. Innovation: Creating an educational environment that fosters scientific research and provides competitive funding in order to increase research outputs that contribute to the advancement of a knowledge-based economy.
4. Harmonisation: Preparing a generation of qualified graduates to compete in the labour market in both the public and private sectors by building partnerships with the private sector in key areas such as curriculum design and training. (*Gulf News* 2017, para. 8).

The four pillars will provide future generations with the skills necessary for developing a knowledge economy and thriving in the public and private sectors through the advancement of research and entrepreneurship (MoE 2017). The Commission for Academic Accreditation (CAA) of the MoE is the federal government's quality assurance agency providing licences to higher education institutions and quality assurance in university education programmes. As of 2020, the UAE has more than 75 accredited higher education institutions in the seven Emirates

with programmes ranging from one-year diplomas to doctoral degrees. These higher education institutions include federal institutions primarily for UAE nationals; technologically oriented institutions, such as the Masdar Institute of Science and Technology; branch campuses of international institutions; and locally established private institutions (Altbach 2014). Federal higher education in the UAE is free for Emirati students who graduate from high school. The three largest federal universities, UAEU, Zayed University, and the Higher Colleges of Technology, provide education to more than half of the UAE's national body of undergraduate students. The other half of Emirati high school graduates attend semi-private or private institutions or study aboard. According to 2017 United Nations Educational, Scientific and Cultural Organization (UNESCO) statistics, more than 11,000 Emirati students study abroad in different countries, including the US, the UK, Canada, and Australia (UNESCO 2017), either through government-funded scholarships or personal funding. For eligibility to join a federal higher institution or to receive government-study-abroad scholarships, Grade 12 Emirati students are required to take the Emirates Standardised Test (EmSAT; UAE Government Portal 2019). Students who take the EmSAT test their proficiency in Arabic, English, mathematics, physics, chemistry, biology, and computer science (MoE 2020b). Individual federal higher education institutions have specific EmSAT results as part of their admission requirements.

Around 140,000 students are enrolled in higher education institutions in the UAE, 40% of whom study in Dubai universities and colleges (Ernst & Young 2015). Seventy percent of students are enrolled in private higher education institutions, and most of those students are non-Emiratis (Kamal 2018). Most students pursue business, economics, engineering, and education degrees (Kamal 2018). Emirati female students outnumber male students in federal tertiary education enrolment. Female students comprise between 80% and 90% of the students at Zayed University and UAE University, respectively (Pennington 2017). Figure 1 shows the

enrolment numbers by gender for the academic year 2016–2017 in the three federal higher education institutions. One reason for the gender imbalance is that young Emirati men can more easily find employment with the police or military after graduating from high school (Kamal 2018; Pennington 2017).

Private institutions provide the majority of higher education in the UAE, with more than 70% of these institutions in Abu Dhabi and Dubai (Kamal 2018). The UAE has the highest number of international branch campuses, representing 13% of the international branch campuses worldwide (Ashour & Fatima 2016). The semi-independent status of each of the seven emirates allows them to provide free zones in which universities and colleges are exempted from federal regulations (Ashour & Fatima 2016). Some of these institutions are not MoE-accredited but are internationally recognised and quality assured. In Dubai, for example, there are 62 higher education institutions and 39 institutions operate in Dubai's various free zones, such as the Dubai International Academic City, Dubai Knowledge Park, Dubai Internet City, Dubai Healthcare City, and others (Knowledge and Human Development Authority 2017). Around 60,310 students from 167 different nationalities were enrolled in private institutions in Dubai in the 2016–2017 academic year, 37.5% of whom were UAE nationals (Knowledge and Human Development Authority 2017).

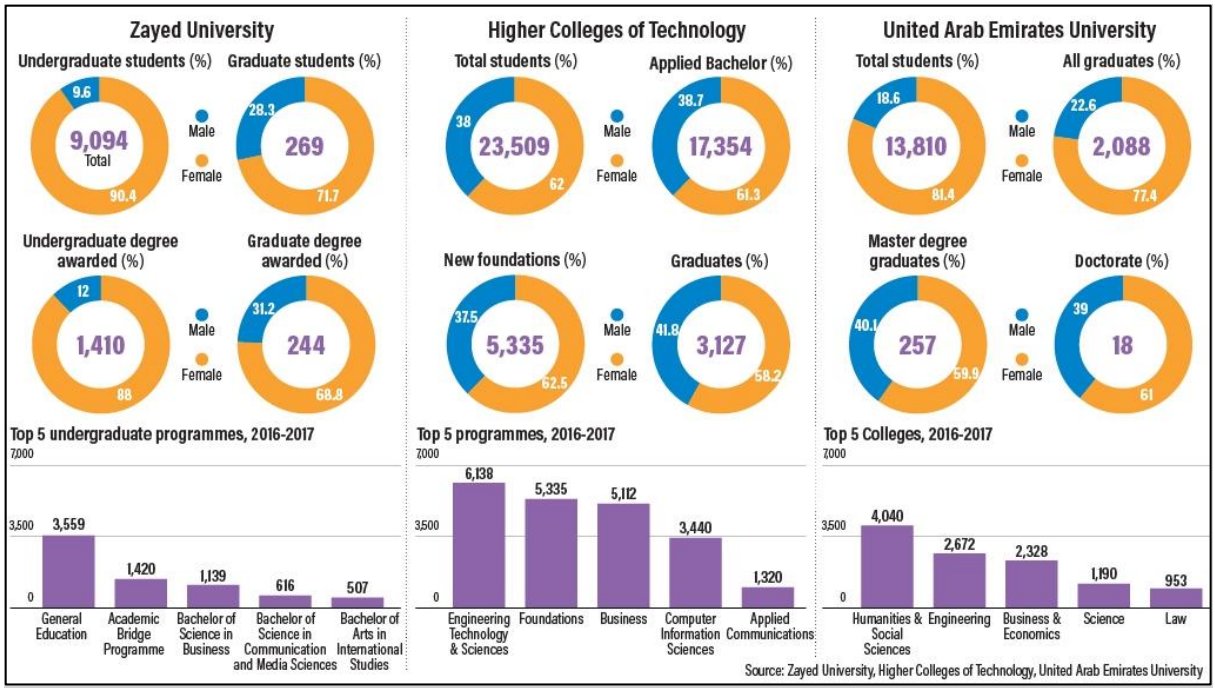

Figure 1: Number of Emirati male and female students in federal higher education in the academic year 2016–2017 (Adapted from Pennington 2017)

Higher education in the UAE is key for the creation of a competitive knowledge economy and the achievement of national sustainable development goals (National Committee on Sustainable Development Goals 2018). According to Chakravarti (2017), "A prosperous entrepreneurial ecosystem cannot sustain without robust education" (p. 131). The leaders of the UAE acknowledge the importance of knowledge institutions, including universities, in achieving the country's vision and goals (National Committee on Sustainable Development Goals, 2018). As a result, the government makes large investments each year into the development of the educational sector to ensure the development of human capital, diversification of the economy and a competitive knowledge-based economy (Ashour & Fatima 2016). In 2019, 17% (10.25 billion dirhams) of the federal budget was allocated to education. According to the MoE, one of the challenges in the federal higher education system is the high cost of education per student. Federal higher education in the UAE costs 10% more per student compared to in European countries (MoE 2017 – note: national strategy for higher

education document). Other challenges include the low expenditure on research, graduates' skills gaps, and the quality of the education offered (MoE 2017).

1.7.5 Entrepreneurship Education in the UAE

Instilling a culture of entrepreneurship and education is an essential pillar in the UAE's Vision 2021 and the National Agenda. The role of education in promoting a culture of entrepreneurship is well recognised in UAE's vision and strategy plans. The National Agenda for example emphasises the role of education in fostering a culture of entrepreneurship among young Emiratis. In 2017, The MoE launched the Emirati School Model to unify the educational system in government schools and private schools offering MoE curriculum across the seven Emirates starting from the academic year 2018-2019. The curriculum delivers business and entrepreneurship as new practical subjects. The National Strategy for Higher Education 2030 aims to develop Emirati generations' technical and practical skills that will enable them to sustain growth in fields such as entrepreneurship. To achieve this goal a growing number of higher education institutions offer a mandatory entrepreneurship and education course as a general education requirement following a government mandate to integrate entrepreneurship education across all undergraduate disciplines. Few other universities offer entrepreneurship majors or entrepreneurship courses as part of their business programmes (Ashour 2016).

1.9 Structure of the Thesis

The study has six chapters:

Chapter 1 provides background and contextual information about the study, a summary of the research problem and the objectives, the research questions, and the significance of the study.

Chapter 2 presents a review of the literature on entrepreneurship education in higher education. The chapter includes definitions as well as the various understandings of entrepreneurship and entrepreneurship education in different disciplines. It also presents literature that correlates

entrepreneurship to socioeconomic development, particularly in the UAE. The literature review further provides an overview of entrepreneurship education's history and growth and the topics of entrepreneurship education research, with particular attention to impact studies. Several tensions in the literature are the teachability of entrepreneurship and the place of entrepreneurship education in universities.

Chapter 3 presents the research design and methodology used to answer the research questions and the rationale for choosing a qualitative design. The chapter includes the research methods used as well as the sampling and data collection procedures.

Chapter 4 presents the study's findings and data analysis procedures. The chapter includes the results of the thematic analysis of the data from the interviews and documents.

Chapter 5 provides summaries, interpretations, and a discussion of the findings in the context of the reviewed literature and the study's theoretical framework.

Chapter 6 presents a discussion of the practical implications of the results and provides concluding remarks and recommendations for future research.

1.10 Summary

This chapter presents the purpose and importance of the study along with the contextual background and factors that indicated the choice of the research problem and questions. With an overview of some of the recent research on entrepreneurship education in the UAE, the chapter showed the need for more research on the views and perspectives of stakeholders involved in the process of strategising and designing entrepreneurship education in UAE

universities. The next chapter presents a synthesis of the literature on the various concepts included in the study.

Chapter 2: Literature Review and Theoretical Framework

This chapter will present the literature on entrepreneurship and entrepreneurship education in higher education, as well as on the role of entrepreneurship in economic and social development worldwide and in the UAE. The literature review includes the conceptual analysis of terms used in the thesis, the history and development of entrepreneurship education, including its placement in university curricula and its potential positive impact on students' entrepreneurial motivations. The chapter presents the debate on whether or not entrepreneurship education is teachable and how educators should teach the topic. A discussion is included of the elements of entrepreneurship education in the curricula of programmes in higher education. This chapter also discusses entrepreneurship education policy in different contexts, includes a background of the implementation of entrepreneurship education in UAE universities, and describes the gaps in entrepreneurship education research in the UAE. Chapter 2 ends with a discussion on the theoretical underpinnings of the study.

2.1 Conceptual Analysis

This section provides conceptual definitions of the terms used in this thesis. In the context of this thesis the terms entrepreneurship, entrepreneurship education, entrepreneurship teaching faculty and university academic leaders are be defined as follows:

Entrepreneurship: To act "upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, or social" (Moberg et al. 2014, p. 14).

Entrepreneurship education: “Content, methods, and activities that support the development of motivation, skill, and experience, which make it possible to be entrepreneurial, and to manage and participate in value-creating processes” (Moberg et al. 2014, p. 14).

Entrepreneurship teaching faculty: faculty members who teach core entrepreneurship courses either as general education courses or as required or elective courses for a major study plan. Examples of classes include Fundamentals of Entrepreneurship, Fundamentals of Innovation and Entrepreneurship, and Entrepreneurship in Information Technology.

University academic leaders: University employees who hold essential management positions, such as provosts, deans, assistant deans, associate deans, and programme and department chairs.

2.2 The Concept of Entrepreneurship

According to Drucker (1985), “Entrepreneurship is neither a science nor an art; it is a practice” (pp. viii). Entrepreneurship is more than the mere creation of a business (Kuratko 2005). Despite the broad and sometimes loose use of entrepreneurship as a concept, a universally accepted definition is still a work in progress (Ahmad & Hoffman 2008; Lackéus 2015; Liñán 2004; Matlay 2005; Mokaya, Namusonge & Sikalieh 2012; Outcalt 2000). The lack of an agreed-upon definition is partly due to the breadth of different academic areas that use the term, including the social sciences, economics, business, and management (Ahmad & Hoffman 2008; Ahmad & Seymour 2008; Carland, Carland & Carland 2015; Peneder 2009; Leitch, Hill & Harrison 2010). Mokaya et al. (2012) wrote “The garden of entrepreneurship is ready for a variety of seeds from many different disciplines and perspectives” (p. 134). According to Audretsch, Kuratko and Link (2015), the concept of entrepreneurship means different things to different people, to include innovation, creativity, discovery and economic growth.

Entrepreneurship is connected to several essential skills in the entrepreneurial process, such as risk-taking, bearing uncertainty, seeking new opportunities and creating and executing innovative ideas (Piperopoulos 2012). Defining entrepreneurship is necessary for understanding entrepreneurship education. The following section presents the different definitions of entrepreneurship.

Entrepreneurship does not exist in a vacuum; it is the result of interacting factors such as economy, culture, education, and government policies (Green 2009). The field of entrepreneurship is criticised for having an "ill-defined paradigm, too many stakeholders with conflicting agendas and interests, and scarceness of stable researchers" (Welsch 2010, p. 40). Entrepreneurship is a complex domain that includes different views and beliefs (Seikkula-Leino 2008), and this complexity may obstruct efforts to exhaustively define entrepreneurship. Despite this variety in its definitions, there is general agreement that entrepreneurship includes the creation of something new (Kilasi 2013). The Irish-French economist Richard Cantillon made the earliest known attempt to define entrepreneurship as a theoretical concept in the 1700s. Cantillon viewed entrepreneurship as an economic activity that involved risk-taking, as entrepreneurs buy goods at known prices in the present but sell goods at unknown prices in the future (Ahmad & Seymour 2008; Brown & Thornton 2013; Mokaya et al. 2012; Piperopoulos 2012).

Jean-Baptiste Say coined the term "entrepreneur" in the 1800s as a person who undertakes a task (Hoppe 2016b; Ricketts 2009). Entrepreneurship, according to Say's definition, had a broad meaning of people with energy who achieve their objectives (Green 2009). Entrepreneurs are individuals who are capable of creating, which may also mean that they challenge the status quo and act as agents of change (Kirby 2004). Following Say's definition,

several prominent scholars offered their definitions of entrepreneurship, including Adam Smith, Frank Knight, Joseph A. Schumpeter, David C. McClelland, Peter Drucker, and others.

Many scholars have attempted to define entrepreneurship in ways that they believed made it different than other business or management acts (Mokaya et al. 2012). Many of those definitions are based either on the process of starting a venture or the characteristics and behaviours of a person who is called an entrepreneur (Ramayah, Ahmad & Fei 2012). Whereas scholars such as Cantillon and Knight viewed entrepreneurs as bearers of price uncertainty and market dynamics (Ahmad & Seymour 2008), Schumpeter stressed "creative destruction" (Green 2009, p. 17) in which entrepreneurs bring new insights, products, or services to their societies and economies to change the status quo. Shane and Venkataraman (2000) and Ahmad and Seymour (2008) viewed entrepreneurship as the process of discovery and exploitation of economic opportunities. Drucker (1985), on the other hand, described entrepreneurship as an act of innovation "involving endowing existing resources with new wealth-producing capacity" (Welsch 2010, p. 39). Timmons (1989) deemed entrepreneurship to be "the ability to create and build something from practically nothing; it is initiating, doing, achieving, and building an enterprise or organisation, rather than just watching, analysing or describing one" (p. 1).

Shane and Venkataraman (2000) affirmed that a definition of entrepreneurship should include the dimensions of the availability of opportunities: ways of discovering, evaluating, and exploiting opportunities; and the characteristics of the individual performing those actions. The authors endorsed that the field of entrepreneurship is the "study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them" (Shane & Venkataraman (2000, p. 218).

Likewise, Ahmad and Seymour (2008) defined entrepreneurship as the process of being entrepreneurial—the identification of new opportunities that result in the generation of value through economic activities. Kuratko (2005) proposed a similar definition and described entrepreneurship as follows:

> [Entrepreneurship is] more than the mere creation of business. Although that is certainly an important facet, it is not the complete picture. The characteristics of seeking opportunities, taking risks beyond security, and having the tenacity to push an idea through to reality combine into a special perspective that permeates entrepreneurs (p. 578).

Mokaya et al. (2012) analysed the literature to construct a universal definition of entrepreneurship. The researchers struggled to find a universally accepted definition because entrepreneurship is a field that is relevant to and affected by many different disciplines and perspectives. To contribute to the many previous attempts, however, Mokaya et al. (2012) defined entrepreneurship as "the individual motivation and willingness to take risk, create and sustain a growth-oriented and profit-making enterprise" (p. 134). The GEM's (2017) definition included the environment and indicated that entrepreneurship is the interaction between the proactivity, innovation, and risk responsiveness of individuals on one side and their environments on the other. Table 1 (which is adapted from Ahmad & Seymour 2008) shows some of the most prominent definitions of entrepreneurship in the literature.

Essence of definition	***Publication***
Entrepreneurs buy at certain prices in the present and sell at uncertain prices in the future. The entrepreneur is a bearer of uncertainty.	(Cantillon 1755/1931)
Entrepreneurs are "projectors".	(Defoe 1887/2001)
Entrepreneurs attempt to predict and act upon change within markets. The entrepreneur bears the uncertainty of market dynamics.	(Knight 1942, 1921)
The entrepreneur is the person who maintains immunity from control of rational bureaucratic knowledge.	(Weber 1947)

Essence of definition	*Publication*
The entrepreneur is the innovator who implements change within markets through the carrying out of new combinations. These can take several forms: . the introduction of a new good or quality thereof . the introduction of a new method of production . the opening of a new market . the conquest of a new source of supply of new materials or parts . the carrying out of the new organisation of any industry	(Schumpeter 1934)
The entrepreneur is always a speculator. He deals with the uncertain conditions of the future. His success or failure depends on the correctness of his anticipation of uncertain events. If he fails in his understanding of things to come, he is doomed …	(von Mises 1949/1996)
The entrepreneur is coordinator and arbitrageur.	(Walras 1954)
Entrepreneurial activity involves identifying opportunities within the economic system.	(Penrose 1959/1980)
The entrepreneur recognises and acts upon profit opportunities and is essentially an arbitrageur.	(Kirzner 1973)
Entrepreneurship is the act of innovation involving endowing existing resources with new wealth-producing capacity.	(Drucker 1985)
The essential act of entrepreneurship is new entry. New entry can be accomplished by entering new or established markets with new or existing goods or services. New entry is the act of launching a new venture, either through a start-up firm, through an existing firm, or via "internal corporate venturing".	(Lumpkin & Dess 1996)
The field of entrepreneurship involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them.	(Shane & Venkataraman, 2000)
Entrepreneurship is a context-dependent social process through which individuals and teams create wealth by bringing together unique packages of resources to exploit marketplace opportunities.	(Ireland, Hitt & Sirmon 2003)
Entrepreneurship is the mindset and process involved in creating and developing economic activity by blending risk-taking, creativity, and/or innovation with sound management within a new or an existing organisation.	(Commission of the European Community, 2003)

Table 1: Definitions of entrepreneurship (Adapted from Ahmad & Seymour 2008, p. 7)

The diversity of entrepreneurship definitions indicates the need to distinguish between broad and narrow views. Whereas the narrow view indicates new venture creation and growth and business planning (Gibb & Hannon 2006), the broad view shows that teaching students to endorse an entrepreneurial mindset results in economic and social benefits. The broad view includes the improvement of pedagogies for the development of entrepreneurial skills, attitudes, and values, as well as real-world experiential experiences (Gibb & Hannon 2006). Cherwitz (2005) argued that "creating material wealth is only one expression of entrepreneurship. Entrepreneurship isn't a synonym of business. It is an attitude for engaging the world—a process of cultural innovation" (para. 3).

Choosing a narrow or a wide definition for entrepreneurship has a significant effect on the selection of objectives, audiences, content, teaching methods, and assessment practices (Gautam & Singh 2017; Lindner 2018; Mwasalwiba 2010). Students should receive education on either broadly relevant entrepreneurial skills, such as creativity, autonomy, and flexibility, or on specific venture-creation skills (Torrance 2013). For example, courses that correspond to the narrow perspective of entrepreneurship include content on idea generation, business plans, and marketing. The most common teaching methods incorporate business simulations, business-plan writing, and venture setting, whereas the broad perspective of entrepreneurship includes content on skills such as creativity, innovation, and initiative. The focus is on entrepreneurial activities with goals and values other than pure economic gains (Hoppe 2016b). Anderson (2015) said "Entrepreneurs capture or produce change so that entrepreneurship is the manifestation of change and change is the entrepreneurial milieu" (p. 146). Advocates of the broad entrepreneurship approach usually adapt teaching strategies such as project-based and problem-based learning. The broader definition of entrepreneurship is perhaps more valuable and beneficial to individuals, societies, and economies because people can apply the skills and knowledge developed through this perspective in many areas of their lives (European Commission 2011).

The literature shows that entrepreneurship has multiple definitions. This section presents the broad and narrow views of entrepreneurship in the literature. In the context of this study, entrepreneurship was defined as the skills and mindset that result in the generation of economic or social value through starting and sustaining a venture. This view indicates that all students should receive opportunities to learn about entrepreneurship (Hindle 2007; Volkmann & Audretsch 2017). According to Gibb and Price (2014), this approach "has greater acceptance within the education system and has led to international exploration of how to support the

development of the individual as an entrepreneur (whether in a business, social, or personal context)" (p. 6). UAE policymakers have implemented directions to educate Emirati youth from all disciplines about becoming entrepreneurs (Emirates News Agency 2015). An example is the instruction to transform the largest federal higher education institute, the Higher Colleges of Technology, into an "economic zone" in which all students will have the chance of receiving educational and financial support to start new ventures (Al Shurafa 2019). According to Hamdan (2019), the UAE needs a national strategy for an educational infrastructure that provides entrepreneurial training at all educational levels. In light of this approach, the broader definition of entrepreneurship was appropriate for this study.

2.3 The Concept of Entrepreneurship Education

The different interpretations of entrepreneurship education also show the diversity of entrepreneurship definitions. As mentioned, this diversity results from the interest of different disciplines, such as education, economics, and politics, and their effects on the field of entrepreneurship (Fayolle & Gailly, 2008). Furthermore, different contextual backgrounds and phases of education also result in different definitions (European Commission, 2011). However, despite the differences in how scholars and educators define entrepreneurship education, the common goal is to educate individuals on value creation for better societies (Lindner 2018). The previous section of this literature review presented the broad and narrow definitions of entrepreneurship; what follows outlines the definitions corresponding to these two views.

Scholars who correlate entrepreneurship with economic benefits such as job creation and profit-making define entrepreneurship education as a means to realise those economic benefits. Most scholars who study entrepreneurship education focus on seeking and exploiting business opportunities. For instance, Kourilsky (1995) defined entrepreneurship education as "the

knowledge, skills, and mindset needed to create jobs ("make a job") by conceiving and starting up new businesses" (p. 6). Jones and English (2004) defined entrepreneurship education as "a process of providing individuals with the ability to recognize commercial opportunities and the insight, self-esteem, knowledge and skills to act on them" (p. 2). Hindle's (2007) definition of entrepreneurship education corresponds to Shane and Venkataraman's (2000) definition of it as a research field. Hindle (2007) defined entrepreneurship education as "the transfer of knowledge about how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited" (p. 107).

In addition to the economically driven definitions, entrepreneurship education is a means to transform individuals into entrepreneurs through the development of relevant skills and attitudes so that they can take responsibility for their learning, careers, and lives (Mwasalwiba 2010; Tom Martin & Associates 2016). The Consortium for Entrepreneurship Education (2006) identified entrepreneurship education as "not just about teaching someone to run a business. It is also about encouraging creative thinking and promoting a strong sense of self-worth and accountability" (p. 2). According to El-Kiswani (2013), entrepreneurship education is "about creating an entrepreneurial mindset/culture that fosters innovation, problem-solving, and active citizenship and where individuals have the self-confidence and belief in their ability to succeed in whatever they choose" (p. 1). The entrepreneurial mindset is essential for the general development of graduate employability skills applicable to a wide range of personal and organisational situations (Gibb & Price 2014). In the same vein, Lindner (2018) defined entrepreneurship education as the acquisition of the skills and abilities necessary to create and implement new ideas.

Gautam and Singh (2017) noted that 64% of entrepreneurship education definitions incorporate the development of personal entrepreneurship skills, as well as the enhancement of individuals' attitudes, values, intentions, and behaviours towards entrepreneurship. Gautam and Singh (2017) also observed that 18% of definitions were about starting new businesses, nine percent were about opportunity recognition, and another nine percent were about developing management skills. In general, most entrepreneurship education definitions indicate the development of students' entrepreneurial mindsets. Some scholars substituted enterprise education for entrepreneurship education in the literature. For some scholars, both terms have the same meaning, and the only difference is that scholars in some countries, such as the UK and the US, use enterprise education (Lackéus 2015). Other scholars argued that enterprise education means educating for venture creation, whereas entrepreneurship education means educating for entrepreneurial mindsets and attitudes (Gautam & Singh 2017; Mwasalwiba 2010).

The term "entrepreneurship education" is the most-used phrase in the scientific literature (Haase & Lautenschläger 2011). Entrepreneurial education is another term used interchangeably with enterprise education and entrepreneurship education (Gautam & Singh 2017; QAA 2018). In the context of this study, entrepreneurship education is the "content, methods, and activities that support the development of motivation, skill, and experience, which make it possible to be entrepreneurial, to manage and participate in value-creating processes" (Moberg et al. 2014, p. 14). This definition corresponds with the broader view of entrepreneurship and the idea that entrepreneurship is about creating either financial or non-financial value.

2.4 Entrepreneurship and Economic and Social Development in the UAE

Entrepreneurs are central to the economic development of any country (Smith & Chimucheka 2014). Through entrepreneurship, countries have better chances for sustainable development and prosperity in an ever-changing economic climate (Miniaoui & Schilirò 2017). In the UAE, the contribution of small and medium enterprises (SMEs) to the current national non-oil GDP is 49% (UAE government 2010). Beyond adding to economic growth and job creation, entrepreneurship is key for the development of knowledge economies. The UAE's current economic status shows a combination of a gradually declining oil-based sector and a developing industrial- and service-based sector. The expected deterioration of the natural resource–based economy requires accelerating the necessary efforts to support and expand the development of a knowledge economy.

2.4.1 The Transformation to a Knowledge-based Economy

If left unresolved, the current economic model of oil and gas as the UAE's primary revenue source could present a challenging situation in the future. Knowledge economies provide increased economic growth and competitiveness. As noted by Keeley (2007), the knowledge economy is not only about changing existing businesses but also about creating new businesses. According to the Organisation for Economic Cooperation and Development (1996), knowledge economies are "economies which are directly based on the production, distribution, and use of knowledge and information" (p. 7). The World Bank found that knowledge economies have "close links between academic science and industrial technology, empowered by increased education and lifelong learning, and greater investment in intangibles such as R&D and software" (Ahmed & Alfaki 2013, p. 87). The World Bank presented a framework of the most important elements of knowledge economies for the comparison of courtiers' progress towards them. According to the World Bank, the pillars of the framework are the following:

> An economic and institutional regime that encourages efficient use of knowledge, the flourishing of entrepreneurship, an educated, creative, and skilled population, a well-developed information and communication infrastructure, and an effective innovation system with dynamic interaction between the world of science and technology and the world of business. In addition, a fifth pillar is constituted by the intangible ingredients of a cultural nature that relate to collective trust and vision and determine a society's inner dynamism. (Aubert & Reiffers 2003, p. 2)

Entrepreneurship is one of the main drivers of economic development and diversification in the UAE (Miniaoui & Schilirò 2016). Entrepreneurial activity can also indicate the development and performance of knowledge economies (Thurik 2008; Valliere & Peterson 2009). According to the World Bank, the four pillars of a knowledge-based economy in any country are an economic and institutional regime, education and skills, information and communication infrastructure and an innovation system (World Bank Institute 2009). As part of the economic and institutional regime pillar, countries "must provide incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship" (World Bank Institute 2009, p. 1). The UAE's leaders and policymakers are interested in entrepreneurship (Chakravarti 2017). UAE Vision 2021 includes the transformation of the nation's economy to a knowledge economy (UAE government 2010). The UAE becoming one of the most favourable entrepreneurial countries is one of the Vision's transformational pillars. According to the National Agenda, achieving this mission will entail infusing schools and universities with an entrepreneurial culture so that UAE nationals can become driving forces in the country's economic development. UAE policymakers continue to develop an entrepreneurial environment to "make the economy more dynamic and innovation-oriented" (Erogul 2014, p. 195). The development of an entrepreneurial environment requires the coordination and cooperation of different stakeholders, from ministries and local government

departments to the private sector, which could necessitate the introduction of an entrepreneurship minister (Jarrar, 2018).

2.4.2 Entrepreneurship and Economic Development

Entrepreneurship indicates economic development (Acs, Estrin, Mickiewicz & Szerb 2018). The early writings of Joseph Schumpeter showed that entrepreneurs are critical for economies (Wong, Ho & Autio 2005) and that an increase in entrepreneurs results in economic growth (Faggian, Partridge & Malecki 2016). Schumpeter highlighted how entrepreneurship is the means for transforming ideas into profitable products or services (Hamdan 2019). Israel Kirzner affirmed that the entrepreneur is "the prime mover of progress" (as cited in Bjørnskov & Foss 2016, p. 292) and that progress occurs when entrepreneurs take advantage of the lack of economic stability to improve market deficiencies. With their GEM 2002 survey of 37 countries, Wong et al. (2005) concluded that business creation and innovation are key for the economic growth of developing countries. According to Bosma and Kelley (2018), entrepreneurship creates economic development because entrepreneurship results in "new businesses, and new businesses create jobs, ensure variety in the market, intensify competition, and play a role in increased productivity through technological change" (p. 40). Hamdan (2019) measured the effect of Emiratis' entrepreneurial activity on economic growth and discovered that entrepreneurial activity had a statistically significant effect on the UAE's economic development. Miniaoui and Schilirò (2017) affirmed that entrepreneurship and innovation are important indicators of diversification and economic growth in the Gulf Cooperation countries, including the UAE. The researchers concluded that, compared to the other five countries in the Gulf Cooperation, the UAE has the fastest-changing economy (Miniaoui & Schilirò 2017).

2.4.3 Initiatives to Support the Entrepreneurial Ecosystem

The efforts to support the UAE's national economy are diverse. For example, in 2019, government leaders initiated a new approach for transforming universities into economic zones. Government leaders launched the first economic zone in the Higher Colleges of Technology, the country's largest federal education institution (Al Shurafa 2019). Government leaders approved a total of 100 million dirhams for the support of student entrepreneurs and business creators from these colleges (Al Shurafa 2019).

Previous initiatives to support Emirati entrepreneurship included establishing local funding organisations and programmes (Erogul 2014). In the Emirate of Dubai, for example, local government leaders founded the Mohamed bin Rashid Establishment for Small and Medium Enterprise Development to help national entrepreneurs plan and finance their new ventures (UAE Government Portal 2018). The Dubai Entrepreneurship Academy, the educational arm of the establishment, provides programmes on the development of entrepreneurial abilities and the competencies of national entrepreneurs. Comparable organisations with similar objectives and services are available in other emirates, including the Khalifa Fund for Enterprise Development in the Emirate of Abu Dhabi, the Sharjah Entrepreneurship Centre in the Emirate of Sharjah, and the Saud bin Saqr Programme for Young Business Leaders in the Emirate of Ras Al Khaimah. In addition to public-sector funding and lending, the UAE has private-sector and venture-capital funds, as well as a growing number of incubators, accelerators, and coworking spaces The US-U.A.E. Business Council 2017). Other efforts to enhance the UAE's entrepreneurial ecosystem include the issuance of an SME law in 2014. Under the law, SMEs are exempt from certain obligations such as taxes, federal fees, and bank guarantees, and members of ministries and federal authorities must allocate a percentage of their contracts to SMEs (Albawaba Business 2014). The UAE's entrepreneurial landscape consists of start-ups

in a wide range of fields, such as e-commerce, transportation, healthcare, news, and personal services (Invest UAE 2017). The majority of these start-ups, however, were launched by non-Emirati entrepreneurs living in the UAE (Dubai Start-up Hub 2019).

2.4.4 Entrepreneurial Activity Challenges

In the UAE, entrepreneurship is in its initial stages (Chakravarti 2017). Although the UAE ranks as the seventh-highest country in the Global Entrepreneurship Spirit Index (GEM, 2017), an index with measurements of the health of countries' entrepreneurship ecosystem, this high rank does not indicate actual entrepreneurial activity. According to the UAE GEM report, entrepreneurial activity is low and shows only 1.9% established business ownership (Ismail, Schott, Herrington, Kew & de la vega 2017). This situation could be due to different reasons. Chabrak et al. (2016) pointed out that the UAE's low entrepreneurial rate might result from certain deficiencies in financing, post-secondary entrepreneurship education, and training and bureaucracy. According to Chabrak et al. (2016), the UAE ranks 35th in entrepreneurship education in post-secondary education. In a study of 30 entrepreneurs in the UAE that aimed to understand the factors that indicate or obstruct entrepreneurial activity, Sikdar and Prakash Vel (2011) identified several challenges that UAE entrepreneurs face, including life-family-work balance, difficulties in sourcing the right workforce, a lack of mentoring, and a lack of accessible statistical data. Yaseen (2014) investigated the most critical unanticipated challenges faced by entrepreneurs in the UAE, finding the top three challenges to be lost market share, implicit overhead expenses, and high employee turnover rates. Fear of failure was also an indicator of reduced entrepreneurial activity. In the UAE, 36% of Emiratis do not start their ventures due to fear of failure (Erogul 2014).

2.4.5 Entrepreneurship as a Solution for Unemployment

Brenkert (2010) asserted that entrepreneurship is currently receiving more attention not only because it correlates to job and product creation but also because it corresponds with significant lifestyle changes, the self-control and self-determination that entrepreneurs learn from owning and operating their businesses, and efficacy in meeting people's needs. In 2017, more than 54% of early-stage entrepreneurs created more than six jobs (*GEM UAE: Annual Report 2017/2018* 2018). In this light, entrepreneurship is a viable solution to the problem of growing Emirati youth unemployment rates. Like most Arab nations, the UAE is a young nation. Youth aged 24 years or under comprise about 30% of the UAE's population. It is imperative that young Emiratis actively participate in the transformation of their country's economy. Creating sustainable job opportunities for UAE nationals is an ongoing mission in the UAE (Ahmed & Alfaki 2013; Chakravarti 2017). Federal and local government leaders have launched Emiratisation initiatives to generate job opportunities for UAE nationals, especially in the private sectors (Al-Shaiba 2014). These initiatives include entities such as The National Human Resource Development and Employment Authority, the Human Resources Authority in Abu Dhabi, and the Emirates Nationals Development Programme (Volk 2018).

A challenge to the UAE's economic development efforts is the overdependence of foreign workers and the underrepresentation of UAE national workers in many sectors. Overdependence on foreign workers is a result of the country's unique situation of having a population of 9.77 million of which UAE nationals comprise only 10% (World Population Review 2020). UAE nationals make up just eight percent of the UAE's total workforce, and the number is expected to drop to three percent by 2030 (Kumar 2018). Among Emirati youth, the unemployment rate is 14% (Khalifa Fund 2013). Youth unemployment has negative consequences on any country (Salem & Mourtada 2012), and the UAE's government leaders

consider overcoming this obstacle a high priority. In addition to being a “third” employment option, entrepreneurship and SMEs are significant job creators (Salem & Mourtada 2012; Smith & Chimucheka 2014). According to the World Economic Forum (2011), government leaders, entrepreneurs, and corporate leaders must work together to create entrepreneurship ecosystems and support economic growth and job creation in the Arab world.

2.4.6 Social Benefits of Entrepreneurship

Though entrepreneurial activity is mainly associated with economic growth, some scholars stress that entrepreneurship is not only an economic activity but also a social phenomenon (Anderson 2015). Morris (2007) argued that, in addition to entrepreneurship’s economic benefits, UAE government leaders could use it as a social policy. Morris contended that female UAE entrepreneurs should receive government support tailored to their unique needs. According to Morris, finding alternatives for women’s employment is a social issue.

The concept of social entrepreneurship is currently receiving more attention from educational institutions around the world. In the US, for example, 40% of universities provide standalone social entrepreneurship courses and 61% provide entrepreneurship education as part of their core entrepreneurship courses (The Ewing Marion Kauffman Foundation 2014). Social entrepreneurship is the creation of social value rather than financial rewards (Ashour 2016). Entrepreneurs, in this case, strive to make a difference in their societies and address problems that employers in the market economy might not be able to solve (Lackéus 2015). Entrepreneurs play a central role in the UAE’s economic transition. The UAE’s governmental leaders focus on benefiting from the effects of entrepreneurship, and the integration of entrepreneurship education into the education system is one of the most promoted strategies (UAE Vision 2021 2010).

2.5 History and Growth of Entrepreneurship Education

The last two decades have shown remarkable growth in entrepreneurship education (Liñán 2004; Lorz, Mueller & Volery 2013; Roberts, Hoy, Katz & Neck 2014; Støren 2014). Entrepreneurship classes have become increasingly popular along with student enrolment in universities (Arasti, Kiani Falavarjani & Imanipour 2012; Carland & Carland 2015). In various parts of the world, including Europe, the US, and the UAE, entrepreneurship education is an important precedent for entrepreneurial activity (Erogul & Mccrohan 2008; Hoppe 2016a; Matlay 2005; Støren 2014), which shows increasing interest in infusing entrepreneurship education into schools at all levels (Kirby 2004) and across disciplines (Roberts et al. 2014). Entrepreneurship education differs from business education and is no longer a preserve of business colleges (Hindle 2007). Though scholars disagree about whether entrepreneurship is teachable, increasing evidence shows that entrepreneurship courses have a positive effect on students' intentions and motivations to start their own ventures (Bae et al. 2014; Hunady, Orviska & Pisar 2018; Martin, McNally & Kay 2013).

2.5.1 The Emergence of Entrepreneurship Education

Entrepreneurship is included as a key competency in the lifelong-learning framework in Europe (Kakouris & Georgiadis 2016) as one of the four strategic goals for universities in the UK (Kirby 2004) and as an important pillar in the future strategies of many countries, including the UAE. Many OECD courtiers also include entrepreneurship education in their national curricula (Consortium for Entrepreneurship Education 2006). According to Kourilsky (1995), the demand for entrepreneurship education indicates its importance: there exists a need for education so that graduates can make jobs for themselves and foster economic growth through job creation. In the 1980s, UK and US politicians made entrepreneurship a buzzword, with the term soon introduced as an alternative model for economic development in those countries and

around the world (Roberts et al. 2014). Politicians' attention to the effects of entrepreneurship on economies led policymakers to pay increasing attention to the factors that support entrepreneurship among citizens (Roberts et al. 2014) and to call upon educators to integrate entrepreneurship education into curricula of programmes in higher education (Kirby 2004).

Professor Myles Mace offered the first entrepreneurship course at Harvard University in 1947 (Arasti, Kiani Falavarjani & Imanipour 2012; Katz 2002; Lorz 2011). Since then, educators have launched entrepreneurship education programmes at universities in the US and around the world (Jones & English 2004). Entrepreneurship education is becoming a core subject in the modern higher education system (Blenker et al. 2014). In his comprehensive chronology of entrepreneurship education in the US, Katz (2002) affirmed that the field is mature within US business schools. However, he suggested there is still room for growth outside of business schools and outside of the US: as such, entrepreneurship education will continue to grow globally as a university major and an academic discipline (Katz 2002). Fayolle (2013) presented several personal views on what is known and what needs to be known based on an analysis of three literature reviews on entrepreneurship education. He affirmed that two major issues need solving for the future of entrepreneurship education:

> First, we need robust theoretical and conceptual foundations, drawing from the fields of entrepreneurship and education to support entrepreneurship programmes and courses. Second, we need to reflect upon our practices and take a more critical stance, breaking away from the far too common 'taken for granted' position. (p. 693)

2.5.2 Research on Entrepreneurship Education

Research on entrepreneurship education has increased over the last decade (Jansen et al. 2015) as a result of the interest and the support of policymakers, academics and students (Mwasalwiba 2010). There exists a need to answer questions on how to provide

entrepreneurship education, who teaches entrepreneurship education, and what the characteristics of the students who pursue entrepreneurship education are (Blenker et al. 2011). Following the 1970s work of Karl Vesper, a pioneer in entrepreneurship education and research, many scholars have studied entrepreneurship education and its pedagogies in higher education (Béchard & Grégoire 2005; Fayolle 2013; Fayolle & Gailly 2008; Gibb & Price 2014; Hägg & Gabrielsson 2019; Jones 2019; Kuratko & Morris 2018).

Research on entrepreneurship education is not a straightforward process (Blenker et al. 2014). Challenges remain, such as the inconsistency in defining entrepreneurship education and the use of sound methodologies (Pittaway & Cope 2007b). Although entrepreneurship education research has different purposes, the primary ones are to measure the effects of entrepreneurship education and understand the dynamics of learning entrepreneurship (Blenker et al. 2014). Numerous scholars have examined the impact of entrepreneurship education using mainly quantitative methods approaches often used to study specific courses or programmes (Blenker et al. 2014).

One issue in entrepreneurship education research is the tendency to focus on quantitative data due to the interest and influence of policymakers (Blenker et al. 2014). Although knowing how many students receive entrepreneurship education in universities is essential, such research may omit several vital aspects of entrepreneurs' lived experiences (Leitch, Hill & Harrison 2010). This deficiency in qualitative research could negatively affect the quality of entrepreneurship education (van Ewijk 2018). More research on the ways real-world entrepreneurs operate is needed to improve how university educators offer entrepreneurship education.

Many scholars have conducted reviews and analyses of entrepreneurship education literature and examined various aspects of entrepreneurship education, such as the use of theory and methodology in empirical studies. For instance, Béchard and Grégoire (2005) conducted a literature analysis of entrepreneurship education research between 1984 and 2001. Their main research question asked, "What are the main education preoccupations anchoring the research on entrepreneurship education at the university level?" (p. 12). They found that most research on entrepreneurship education published in the specified period was primarily on economic and business content, as well as on the design and evaluation of entrepreneurship education programmes. Scholars gave less attention to how entrepreneurship education correlated with educational theories. Similarly, a bibliometric survey pattern conducted by Kakouris and Georgiadis (2016) showed a low connection in the field of entrepreneurship education with learning theories from education sciences. They also found gaps in the literature on the connection between entrepreneurship education and the comprehensive examination of experiential learning, lifelong learning, and career counselling.

A systematic review of entrepreneurship education literature published between 1987 and 2017 showed several research gaps (van Ewijk 2018). Van Ewijk (2018) found shortcomings in some of the discussed subjects, including the objectives, content, instructors, and institutional context of entrepreneurship education. Van Ewijk also identified gaps in the literature in the geographical setting, interdisciplinary approaches, and qualities of the methodologies used. Van Ewijk posited that researchers in the field would benefit from using interdisciplinary research approaches, drawing from the fields of economics, business management, psychology, and education for the basis of their research's conceptual and theoretical groundings. Furthermore, Van Ewijk confirmed that the lack of contextual information and characteristics of samples in previous research studies provided weakened results. This study

served as the means to address those two gaps and includes a rich description of participants' context and characteristics.

2.5.3 Can Entrepreneurship be Taught?

A debate exists on whether entrepreneurship is teachable (Lekoko, Rankhumise & Ras 2012; Mwasalwiba 2010; Raposo & do Paço 2011). Many scholars argue that the debate became obsolete a long time ago (Kuratko 2005); however, some educators still believe that entrepreneurs are "born, not bred" (Kirby 2004) and that entrepreneurship is not teachable (Hindle 2007). Kuratko (2005) noted that entrepreneurship, or certain parts of it, can be taught and "developed and reinforced within student[s]" (Kuratko & Morris 2018, p. 15). Drucker (1985) said that "It is a discipline. And like any discipline, it can be learned" (as cited in Kuratko 2005, p. 580). Gorman et al. (1997) conducted a systematic review of the literature on entrepreneurship education from 1985 to 1994 and found that "most of the empirical studies surveyed indicated that entrepreneurship can be taught, or at least encouraged, by entrepreneurship education" (p. 63).

Hindle (2007) posited that entrepreneurship has a practical, teachable component like other applied disciplines, such as medicine, engineering, and law. He further addressed the question of whether or not entrepreneurship is teachable, among six other questions he believed important to answer before offering entrepreneurship education at universities:

> The first [questions] is: can entrepreneurship be taught at all? There are many strident voices answering 'no'. The second is: if entrepreneurship can be taught at all, is the university an appropriate place to offer this teaching? The 'no' case is strongly advocated by many. Catching up with our paradox, we have a third problem: if the university is an appropriate place to teach entrepreneurship but the business school is the wrong place within the university to house these studies, where should they go? These questions in this order should logically take precedence

> over a fourth important question: 'who should teach entrepreneurship?' and a fifth: 'who should learn?' and a sixth 'how should it be taught?' Finally, we are in a position to ask the ontologically integrational seventh question: 'what should be taught?' (p. 107)

In a survey of American professors, 93% indicated that entrepreneurship is teachable (Vesper as cited in Hynes 1996). Boyles (2012) asserted that the "entrepreneurship mindset" is learnable and developed with practice. In the discussion of the "teachability dilemma" of entrepreneurship, Haase and Lautenschläger (2011) observed that teaching students hard facts about entrepreneurship is relatively easy, whereas teaching them how to become entrepreneurs is less so. The researchers admitted that instilling entrepreneurial skills in students is a difficult task for educators but is the type of education needed to create future entrepreneurs. Studying experienced and acting entrepreneurs and their views on how they shaped their entrepreneurial personalities may provide some indications of the effect of entrepreneurial education. For example, 50% of Emirati entrepreneurs said that entrepreneurship education had a positive impact on the early stages of their entrepreneurship journeys (Kargwell & Inguva 2012).

Entrepreneurship is teachable when creating the right environment (Gibb 2007). The higher the level of education, the more potential the recipient has of becoming an entrepreneur (Chabrak et al. 2016; Haase & Lautenschläger 2011). However, scholars who correlate entrepreneurship education with entrepreneurial activity must be methodologically rigorous. As mentioned in the previous section of this literature review, there is evidence that entrepreneurship is teachable if educators make careful considerations throughout the course or programme design and delivery processes.

2.5.4 Entrepreneurship Education Impact Studies

Although the effect of higher education on entrepreneurship has not yet been proven (Gibb 2002b; Hunady, Orviska & Pisar 2018; Martin, McNally & Kay 2013), many researchers claim that entrepreneurship education is key for increasing the number and quality of entrepreneurs (Ahmad & Hoffman 2008; Lekoko, Rankhumise & Ras 2012; Liñán, Rodríguez-Cohard & Rueda-Cantuche 2011; Matlay 2005). Martin, McNally, and Kay (2013) conducted a meta-analysis of 79 studies that correlated entrepreneurship education to entrepreneurship-related human-capital assets and outcomes. Martin et al. (2013) concluded that entrepreneurship education correlates with the entrepreneurship-related human-capital assets of entrepreneurial knowledge and skills, positive perceptions of entrepreneurship, and positive intentions to start a business.

Bae, Qian, Miao, and Fiet (2014) found an overall positive impact of entrepreneurship education on entrepreneurial intent following a meta-analytic review of 73 studies with an overall sample size of 37,285. In the same vein, Dickson, Solomon, and Weaver (2008) analysed 34 published research studies that correlated general education, including high school and college education, to entrepreneurial selection and success. Dickson et al. (2008) found a significant and positive correlation between entrepreneurship education and entrepreneurial performance. Hunady et al. (2018) examined data from 40 European and non-European courtiers and found that university entrepreneurship education positively correlated with starting a business and succeeding in business. A survey study of 145 participants from North America, South America, Europe, the Middle East, Africa`, and Asia showed that entrepreneurship education ranked high among the factors that indicate successful entrepreneurship (Arthur, Hisrich & Cabrera 2012).

Contrary to the researchers who found a positive impact of entrepreneurship education on entrepreneurial skills, competencies, and outcomes, several scholars have found a negative link. Nabi, Liñán, Fayolle, Krueger, and Walmsley (2017) conducted a systematic literature review of 159 articles published between 2004 and 2016 to examine the impact of entrepreneurship education on several entrepreneurial outcomes, such as entrepreneurial skills and knowledge, entrepreneurial attitude, and entrepreneurial intention. Nabi et al. (2017) argued that the contradictory results of impact studies were the result of a lack of methodological rigour. Lorz, Mueller, and Volery (2013) questioned the methodological rigour of 39 empirical impact studies. They subsequently made several suggestions on how to improve entrepreneurship education impact studies to assess the effect of entrepreneurship education, including measuring action instead of intent and starting a venture. Lorz et al. (2013) further recommended assessing specific pedagogies with entrepreneurial intent, with little presently known about how students feel encouraged to become entrepreneurial after taking entrepreneurship courses (Von Graevenitz, Harhoff & Weber 2010).

Lorz et al. (2013) stressed the importance of increasing methodological rigour and design by borrowing from other fields, such as psychology and pedagogy. Most of the researchers who have correlated entrepreneurship education to student intents conducted cross-sectional research, which may sufficiently indicate a causal link (Jansen et al. 2015). Several longitudinal studies on experimental designs, for example, have shown that entrepreneurship education has a negative impact on students' entrepreneurial intentions (Oosterbeek, Van Praag & Ijsselstein 2009; Von Graevenitz, Harhoff & Weber 2010). However, Von Graevenitz et al. (2010) considered that students' reduced interest in entrepreneurial activity after taking an entrepreneurship course was useful because it indicated that those students might make better

career choices without entrepreneurship. Educators can use entrepreneurship education to demystify career choices and enhance college graduates' employability (QAA 2018).

2.5.5 Place of Entrepreneurship Education in Higher Education

Usually, entrepreneurship is correlated with business schools (Green 2009); however, educators are interested in infusing entrepreneurship into disciplines other than business (Beckman & Cherwitz 2009; Roberts et al. 2014; Turner & Gianiodis 2018). Traditional business education usually presents the requirements needed for running an existing firm rather than the skills needed to start and grow a new venture (Jones 2007; Jones & English 2004; Raposo & do Paço 2011). Therefore, traditional business education does not fulfil the requirements of the current constantly changing and evolving socioeconomic environment (Byun et al. 2018). Although entrepreneurship education requires business management principles (Jones 2007; Jones & English 2004; The Ewing Marion Kauffman Foundation 2014), entrepreneurship education is different from business management because it provides instruction on opportunity recognition, risk-taking, the collation of resources to commercialise an idea, and the knowledge of how to create a new venture (Jones 2007). Hindle (2007) claimed that universities should provide entrepreneurship education not only for a specific discipline but "wherever the right mindset prevails" (p. 113). Hindle (2007) further argued that the "business school is entirely the wrong place in which to teach entrepreneurship" (p. 106). Instead, educators should make the university "a central environment that supports collaborative working across different areas" (QAA 2018). A central collaborative environment may require the creation of fundamental units in which educators from all departments facilitate cross-disciplinary interaction for the creation and development of entrepreneurship education programmes (QAA 2018). University educators adapting this approach disseminate entrepreneurship education programmes throughout different disciplines

and departments and report to a provost or president rather than a particular department head or dean (Torrance 2013). University educators can use this strategy to better respond to students' needs. Many universities use this cross-campus approach (Turner & Gianiodis 2018) in the US and the European Union (Roberts et al. 2014).

According to the European Union Policy, educators should integrate entrepreneurship education at all educational levels and all common curricula (Seikkula-Leino 2008; Volkmann & Audretsch 2017). Educators should make entrepreneurship education a required rather than an optional course and should also integrate entrepreneurship education into the curricula of other courses (European Commission 2009). In the US, there is a growing trend of designing entrepreneurship education programmes for students in non-business disciplines, including art, engineering, and the sciences (The Ewing Marion Kauffman Foundation 2014). Heads of programmes such as public health are incorporating entrepreneurship education to encourage students to propose and execute innovative health-related ideas and solutions. A movement also exists to develop entrepreneurship approaches away from the business paradigm (Gibb & Hannon 2006). The Coleman Foundation, a US-based organisation in support of entrepreneurship education, provides a national faculty fellowship programme in which faculty members from disciplines other than business receive training to infuse entrepreneurship education into non-business subjects (Roberts et al. 2014). Gibb and Hannon (2006) affirmed that funding entrepreneurial development uniquely in business schools was a narrow approach in the US. They argued that allocating funds to non-business disciplines has potentially more desirable benefits. Green (2009) argued that entrepreneurship could become a way of thinking in universities:

> It can be an approach to problems, a habit of mind, a framework for interpretation, and a viewpoint for discernment. We can look at any human activity and ask how entrepreneurial it is. What is the idea, the innovation? Where is the transformation? Where is the enterprise?

> Where is the benefit to others? Where is the value? In short, we in universities can use entrepreneurship as a basic category of understanding and analysis. No programme of education in entrepreneurship can or should promise to make everybody into an entrepreneur. Entrepreneurship would be a fraud if everyone could do it. The point, rather, is to employ entrepreneurship as one primary approach to analysing and apprehending human experience, to use it as a stimulus, a way of asking questions, and a mode of learning. (p. 19)

According to West, Gatewood, and Shaver (2009), introducing entrepreneurship curricula outside of business schools is a natural result of entrepreneurial thinking in the world because not only business students become entrepreneurs. Restricting entrepreneurship education to business schools could result in the loss of promising students and graduates from other disciplines, as some significant innovative ideas come from graduates of non-business disciplines (Turner & Gianiodis 2018). In the European Union, for instance, one of the most recent objectives is the integration of entrepreneurship education into teacher education (Deveci & Seikkula-Leino 2018). Deveci and Seikkula-Leino (2018) conducted a thematic analysis to examine the literature on entrepreneurship education in teacher education in European countries, and they found that many researchers stressed the importance of incorporating entrepreneurship into teacher training. Seikkula-Leino et al. (2012) also recommended the integration of entrepreneurship education into teacher education in Finland through curricula reform to align with the national strategy of developing entrepreneurship education in teacher universities and vocational teacher education. Since university educators are responsible for preparing graduates with entrepreneurial skills, entrepreneurship education has passed the boundaries of business schools and is a curriculum component across disciplines and to students from different educational backgrounds (Blenker et al. 2014).

Bataineh and Maamar (2016) described how to achieve the successful integration of entrepreneurship education into information technology majors' curricula in the UAE. In addition to creating entrepreneurship courses specific to information technology students, they recommended introducing general entrepreneurship courses that all students should take as part of their general education plans and before their selection of majors. Teaching entrepreneurship as a competence is more valuable to students than its presentation as a business-specific topic (European Commission 2011).

In the UAE, educators mainly offer entrepreneurship courses in business programmes. Some universities also provide specialised programmes on entrepreneurship and innovation, both at the undergraduate and graduate levels. Members of the MoE have implemented a government directive to include introductory entrepreneurship courses as part of the general education curricula of all federal and private university and college undergraduate programmes in the UAE. The UAE's Vision 2021 and the National Agenda indicate that the creation of an entrepreneurship ecosystem is one of the main goals for the future. The mission is to include entrepreneur education in the educational system (WAM 2015) as educators who provide entrepreneurship education develop students' entrepreneurial mindset, knowledge, and skills (Sirelkhatim & Yagoub 2015). Because students must learn about entrepreneurship at an early stage of their academic journeys, it is questionable if one course is enough. Although many universities have entrepreneurship development offices and incubators, these may or may not be useful for students depending on their backgrounds and may not be effectively incorporated into the holistic strategies of promoting the entrepreneurial mindset across the entire student body.

2.6 Entrepreneurship Education in the Curriculum

Kuratko and Morris (2018) affirmed that the purpose of entrepreneurship education differs from one institutional context to the other. According to Kuratko and Morris (2018), educators should provide entrepreneurship education in service of the following aims:

- Teach students the principles and tools necessary to start a successful business.
- Fill a gap in the business-school curricula by addressing start-up and small-business contexts.
- Advance our knowledge and understanding of entrepreneurial behaviour.
- Foster entrepreneurial activity and economic development in the community.
- Play a contributing role in the spread of entrepreneurship across campus, the development of entrepreneurial ecosystems within a university, and/or the emergence of an entrepreneurial university. (pp. 14-15)

Educators who provide entrepreneurship education cover a wide variety of objectives, audiences, contents, and teaching methods (Fayolle & Gailly 2008). According to constructive alignment theory (Biggs 1996), designing a course requires the careful alignment of learning outcomes, teaching and learning activities, and assessments. Few researchers have correlated the goals of entrepreneurship courses in higher education with entrepreneurship course design and implementation (van Ewijk 2018). Fayolle (2013) argued that entrepreneurship educators lack the required knowledge of how to combine objectives, content, and teaching methods to address the needs of specific audiences, such as university students, aspiring entrepreneurs, and established entrepreneurs. Entrepreneurship educators face an expectation of complete knowledge about a wide variety of fields (Neck & Greene 2011). A systematic literature review of entrepreneurship education teaching methods and curricula content in 129 studies showed that teaching methods and curricula content varied considerably because of the different objectives of entrepreneurship courses (Sirelkhatim & Yagoub 2015). Arasti et al. (2012) asserted that designing entrepreneurship programmes requires identifying students' needs and the most suitable teaching methods for those needs.

2.6.1 Entrepreneurship Education Objectives

Entrepreneurship education must provide ways to fulfil a country's socio-economic goals. The main implicit and explicit aims of entrepreneurship education are increased entrepreneurial activity (van Ewijk 2018) and the creation of quality entrepreneurs: the most-wanted outcome (Mwasalwiba 2010). A survey of entrepreneurship educators' most-used objectives showed the top two to be increased awareness of entrepreneurship as a career and increased understanding of the process of creating a business (Hills 1988). Entrepreneurship education often falls into three categories based on the desired objectives (Mwasalwiba 2010; Raposo & do Paço 2011), which indicate what educators and students want to achieve, and the use of suitable pedagogies (Mwasalwiba 2010). Most entrepreneurship educators teach *about* entrepreneurship, *for* entrepreneurship or *through* entrepreneurship. Haase and Lautenschläger (2011) described this classification in another manner, stating that educators base entrepreneurship education on the "know-what" (hard facts), "know-why" (soft facts), and "know-how" (conviction). Some educators base their entrepreneurship programmes on a combination of some or all of these objectives. For university courses, an ideal situation would include education *about* and *for* entrepreneurship (QAA 2018). Educators in the field often discuss and debate teaching *for* and *through* entrepreneurship (Moberg et al. 2014). Although each of the three objectives is useful in the right context, educators must make their selected objectives clear, as their choice of content, teaching methods, and assessments are largely dependent on the chosen objectives.

Teaching *about* entrepreneurship provides students with theoretical knowledge and a general understanding of the different aspects of entrepreneurship, the effect of entrepreneurship, or the effect of other phenomena on entrepreneurship. Entrepreneurship education includes topics such as theories about entrepreneurs, the economic effects of entrepreneurship, and the indicators of the success or failure of an enterprise (Haase & Lautenschläger 2011). Traditional

education mainly presents the theoretical side of entrepreneurship (Nakagawa et al. 2017). Many educators teach *about* entrepreneurship, although they usually base their courses on teaching *for* entrepreneurship (Mwasalwiba 2012). Educators who teach *about* entrepreneurship often use traditional teaching methods, such as lectures and text, to explore the theoretical underpinnings of entrepreneurship. Their main goal is to raise awareness about entrepreneurship as a discipline and enhance students' understanding of entrepreneurship. According to Mwasalwiba (2010), teaching *about* entrepreneurship is the most common objective used to design entrepreneurship courses in higher education. To teach *about* entrepreneurship, Fiet (2000) argued that educators need to increase the theoretical content in entrepreneurship courses to develop students' cognitive skills for improved entrepreneurial decisions. According to Fiet (2000), students can use theories as precedents to later build their practical and experiential entrepreneurship knowledge.

Educators who teach *for* entrepreneurship strive to prepare students to become future entrepreneurs and encourage them to start new ventures. Educators who teach *for* entrepreneurship use entrepreneurship as a teaching method (Moberg et al. 2014). Courses taught with this objective usually provide experiential-learning experiences and meaningful context in which students think creatively and visualise opportunities (QAA 2018). Students mainly engage in practical experiences of setting up, managing, and growing a business. Business planning is the most-used teaching method in this approach, and educators gradually take students through all aspects of starting up new ventures.

Educators who teach *through* entrepreneurship engage students in experiential, process-based learning, either through the imitation of real business scenarios or by contributing to the creation of a real venture. This is also a suitable approach for educating established

entrepreneurs who want to develop their capabilities of successfully managing and growing their businesses. Teaching *through* entrepreneurship usually occurs in venture-creation programmes, business incubators, and accelerators (QAA 2018). According to Lackéus (2015), an educator who teaches *through* entrepreneurship "often leans on the wider definition of entrepreneurship .. [that] can be integrated into other subjects in general education, connecting entrepreneurial characteristics, processes and experiences to the core subject" (p. 10). This approach is appropriate for students in all educational levels and all disciplines (Lackéus 2015).

2.6.2 Entrepreneurship Education Audience

According to Fayolle (2008), there are three target groups for entrepreneurship education. The first group includes individuals who want to become entrepreneurial and who possess entrepreneurial attitudes and mindsets. The second group includes individuals who want to become entrepreneurs by learning practical venture-creation skills. The third group includes individuals who want to become entrepreneurship academics (teachers and researchers) and learn entrepreneurship theories and methods of teaching and learning. Fayolle (2013) argued that entrepreneurship educators still lack knowledge on how to account for the unique characteristics of entrepreneurship education–targeted audiences when designing entrepreneurship courses. Educators should consider students' psychological and socioeconomic backgrounds and disciplines to shape the design and delivery of courses. Lindner (2018) stated that entrepreneurship educators should categorise students in their target audiences into seven groups, ranging from individuals without entrepreneurial ideas or intentions to entrepreneurship educators who support others in idea implementation. According to Lindner (2018), educators can make the categorisation according to four criteria: ideas, intentions or motivation, competence, and resources. The specification of target groups naturally results in the different designs of different programmes for each group. According to

this categorisation, educators can design entrepreneurship programmes for awareness and development (education *about*), specification (education *for*), or implementation (education *through*).

2.6.3 Entrepreneurship Education Content

The objectives and target audiences of an entrepreneurship programme indicate what educators should teach in those programmes. The content of entrepreneurship programmes, or in other words "what" should be taught in those programmes, is still an area of inconsistency that needs more attention from educators (Sirelkhatim & Yagoub 2015). To close the gap between what educators teach about entrepreneurship and what active entrepreneurs do, it is advised that the educator chooses content that resembles *education for* and *education through* entrepreneurship (Fayolle 2013). Since the entrepreneurial mind is seen as essential to a wide range of personal and organisational contexts, content that includes topics such as opportunity-seeking and the pursuit of entrepreneurial behaviours in any context is as important as business planning (Gibb & Price 2014). Aziz and Hariri (2018) observed that educators in Saudi Arabia use business plans, market research, and fund resources as well as the theoretical aspects of entrepreneurship. Mwasalwiba (2010) found that entrepreneurship programme content varied considerably, with the most-used subjects to be financing, marketing, idea generation, business planning, team-building, new venture creation, growth management and risk and rationality. The list shows that educators mainly base content on business planning and venture creation (Fayolle 2013); however, they should also include "softer" skills, such as entrepreneurial mindsets and learning from failure, in the content of entrepreneurship courses (Fayolle, 2013).

2.6.4 Entrepreneurship Education Teaching Methods

Teaching methods, the approaches used to deliver course content to students and achieve particular lesson goals and objectives, can be either traditional or innovative (Mwasalwiba 2010). The traditional teaching method is mostly teacher-centred, single subject–focused and reliant on lecturing and writing texts, with students mainly passive learners. In contrast, innovative teaching methods are active, collaborative, experiential, and process-based, and students are at the centre of the learning process. Aziz and Hariri (2018) stated that educators should view entrepreneurship courses as being different than other courses and use experiential teaching approaches in order to engage students and involve them in the learning process as much as possible. Entrepreneurship education is widely associated with experiential learning, or "learning by doing" (Kakouris & Georgiadis 2016; Pittaway & Cope 2007a). According to Jones and English (2004), educators should offer entrepreneurship education in action-oriented, experiential-learning, project-based, and problem-solving environments. This idea echoed by Gautam and Singh (2017), who mentioned that since entrepreneurship education is about developing students' behaviours and attitudes, teaching methods should be centred around practical and real-world experiences. Sirelkhatim & Yagoub (2015) found that the most teaching methods used to teach *about entrepreneurship* were lectures, guest speakers, and case studies adapted from textbooks. For teaching *for entrepreneurship,* they found that the most-used teaching methods were self-directed activities, mentoring, and networking with entrepreneurs; while teaching *through entrepreneurship* used business simulations, internships, and collaborations with real businesspeople. Lekoko, Rankhumise and Ras (2012) recommended that teaching methods focus more on practical activities such as requiring students to write business plans later assessed by institutions that would financially reward high quality business plans. The nature of entrepreneurship and the fact that is gaining

increasing attention requires that educators constantly develop new teaching methods (Henry 2013).

2.6.5 Entrepreneurship Education Assessments

Assessing students' learning in entrepreneurship courses should align with the objectives and learning outcomes of the course: something referred to in the education sciences as constructive alignment (Biggs 2014). Constructive alignment is a means to support the development of a successful strategy for building an entrepreneurial mindset (Gibb & Price 2014). Designing assessments for entrepreneurship courses requires educators to consider that (a) educating *about* entrepreneurship is usually assessed through essay writing and examinations, (b) educating *for* entrepreneurship requires practical assessments in which educators measure students' understanding through activities, and (c) and educating *through* entrepreneurship usually requires students to engage in activities and reflect on their performance in those activities to assess their development and learning (QAA 2018). Educators can design assessments in several ways to measure students' understanding of entrepreneurship and their attainment of entrepreneurial skills. Educators should design student assessments based on allowing students to learn from mistakes, building their confidence and motivation, encouraging problem-solving, and growing their commitment to improvement (Gibb & Price 2014). Henry (2013) argued that assessing students learning in entrepreneurship education is difficult because it is practice and future oriented: thus, students would have to graduate to demonstrate the learned skills.

2.6.6 Entrepreneurship Education Evaluation

Evaluating entrepreneurship education programmes is a difficult and subjective task (Neck & Greene 2011). According to Farnell, Heder, and Ljubić (2016), none of the member states in

the European Union collects or publishes data on how entrepreneurship education is evaluated for impact, which shows that impact assessment and evaluation is probably a challenging task. Similarly, most universities in China, for example, do not have an established system for evaluating entrepreneurship education, even after implementing it for more than ten years (Weiming, Chunyan & Xiaohua, Du 2016). Seikkula-Leino et al. (2013) argued that this is related to the difficulty of evaluating teaching practices in general and of predicting entrepreneurial activities of students in the future. Numerous studies have evaluated entrepreneurship education by measuring student's entrepreneurial intentions (Krueger, Reilly & Carsrud 2000; Lanero et al. 2011; Liñán 2004; Liñán et al. 2011; Oosterbeek, van Praag & Ijsselstein 2008; Van Gelderen, van Praag & Brand 2008; Tsordia & Papadimitriou 2015; Farhangmehr, Gonçalves & Sarmento 2016). However, it is unclear whether students' intentions immediately after completing an entrepreneurship programme accurately predict their behaviour in the future, such as starting a new venture or becoming entrepreneurial employees.

Generally, there is a lack of longitudinal studies on entrepreneurship education evaluations and how graduates who receive such education find themselves encouraged to start and successfully manage new ventures (Lorz, Mueller & Volery 2013; Mwasalwiba 2010; van Ewijk 2018). Longitudinal studies are usually difficult to execute and manage (QAA 2018). Some graduates may start businesses long after graduation; therefore, measuring the immediate impact of entrepreneurship courses may not provide a complete view. Roberts et al. (2014) argued that researchers who assess the impact of entrepreneurship education should consider outcomes beyond the number of graduate start-ups. Instead, scholars should assess three outcome levels: the improvement in students' entrepreneurial mindsets, students' encouragement levels for creating innovative start-ups, and the general improvement of

entrepreneurs' economic and societal roles. Henry (2013), in contrast, contended that evaluating entrepreneurship courses based on students' attainment of skills such as leadership, creativity, self-confidence, and other skills is a complex task.

2.7 Entrepreneurship Education Policy

Entrepreneurship education is usually regarded as an important facilitator of entrepreneurship for economic growth and is therefore included in national policies and strategies to promote entrepreneurial activity in many countries. Governments have the role of ensuring that entrepreneurship education has a consistent objective and that its purpose and orientation is closely monitored (O'connor 2013). The United Nations Conference of Trade and Development (UNCTAD; 2012) considers the enhancement of entrepreneurship education and development of skills as one of the pillars of a holistic entrepreneurship policy framework for developing countries and countries with economies in transition. Entrepreneurship education policy objectives, according to UNCTAD (2012), can include embedding entrepreneurship in formal and informal education, developing effective entrepreneurship curricula, training teachers, and partnering with the private sector. In the EU, the policy for entrepreneurship education is usually driven by both a political agenda to advance the economy and an aspiration to advance individual skills related to taking initiative in the solving of complex problems through education (Hoppe 2016). The European Union Entrepreneurship 2020 Action Plan mentions three areas for immediate intervention, of which the first is entrepreneurial education and training to support growth and business creation. According to the plan, one of the highest returns on investment the European countries can make can be achieved by investing in entrepreneurship education (European Commission 2013). The role of higher education in the plan is specifically highlighted in developing knowledge, skills, and attitudes; participating in creating entrepreneurial ecosystems; and building fruitful partnerships with industry. The related policies to support entrepreneurship education include embedding entrepreneurship into

school, vocational, higher, and adult education curricula and ensure that students receive the opportunity to participate in at least one practical entrepreneurial experience before leaving compulsory education. Well-designed strategy at the policy level remains one of the key issues and challenges for entrepreneurship education in the EU (European Commission 2020).

In China, the ministry of education outlines four goals for entrepreneurship education:

> 1) expose students to the challenging prospect for employment and raise their entrepreneurship awareness, 2) lay a solid foundation of knowledge about entrepreneurship, 3) improve college students' entrepreneurial skills and abilities through both classroom learning and other activities, and 4) reduce entrepreneurial risks among college students (Greene, Brush, Eisenman, Neck, Perkins 2015, p. 23).

In 2012, entrepreneurship education in China was made compulsory at the higher education level (Greene, et al. 2015). Other policies to support entrepreneurship education at the higher education level have been put in place by national and local governments. These policies support college students in several ways, such as allowing them to preserve their enrolled-student status while suspending their studies to pursue an entrepreneurial activity, reducing taxes for college student entrepreneurs, and offering students easier access to loans (Weiming, Chunyan & Xiaohua 2016). These policies, while aiming at encouraging students to become entrepreneurs, do not directly support entrepreneurship education or serve the entire student body (Weiming, Chunyan & Xiaohua 2016).

In 2009, Entrepreneurship Education in the Arab States was launched. The project is a joint effort between UNESCO and the StartREAL Foundation in the UK and included two phases: 1) collecting, synthesising, and disseminating successful experiences of entrepreneurship

education from different countries of the region, and 2) providing assistance in developing strategic plans to integrate entrepreneurship education in the educational systems of the participating Arab States. The first phase provided an assessment of the situation of entrepreneurship education in a number of Arab States. In the second phase, UNESCO provided technical support in policy recommendation, teacher training, curriculum development, and networking to four countries: Jordan, Oman, Tunisia, and Morocco. Although the four countries participated in several activities, such as reviewing policies and curricula and making plans for teacher training, records of such policies and plans were not found by the researcher or there was no evidence of their implementation in the education systems in those countries. In Jordan, for instance, the Ministry of Education Strategic Plan 2018–2022 lists entrepreneurship as one of its sustainable values (Jordanian Ministry of Education 2018); however, there is no mention of entrepreneurship education integration or promotion anywhere else in the strategic plan. Compared with scores of countries in the GEM reports, Jordan is below global and regional averages in basic and post-school entrepreneurial education and training, which warrants an urgent need to develop this sector (Arabiyat, Sandri & Alkhatib 2017). One recent initiative to integrate entrepreneurship in Jordanian schools was launched by the Goethe-Institut Jordan and the German Institute for Economic Education at the University of Oldenburg in cooperation with the German-Jordanian University and five Jordanian schools (The Jordan Times 2019). The project "Entrepreneurship in school practices in Jordan", which started with five schools as a pilot phase, aims to lay the foundation for teacher-training and curriculum development to advance entrepreneurial learning in the participating schools (The Jordan Times 2019). The project is funded by the German Federal Foreign Office and the German-Arab Transformational Partnership Programme.

Entrepreneurship education in GCC countries is still underdeveloped and requires action from policymakers and stakeholders to enhance it (Tok 2018). According to Miniaoui and Schilirò (2017), GCC governments should invest in and support entrepreneurship education at high-school and college levels. In Saudi Arabia for instance, one of the Vision 2030 programmes is the National Character Enrichment Programme, which is aimed to develop Saudi youth. According to this program, policies will be created to strengthen values such as hard work, ambition, and entrepreneurship (Vision 2030 2017). An analysis of the state of innovation and entrepreneurship, however, revealed that there are still gaps that need to be addressed through higher education in particular (Yusuf & Atassi 2016). Entrepreneurship courses, for example, are optional and only offered to students in business programmes, and few universities have specialised centres for entrepreneurship (Aziz & Hariri 2018). To fill the gap, Aziz and Hariri (2018) suggested introducing a number of policy actions that can support the promotion of entrepreneurial culture in Saudi Arabia. Their suggestions included embedding entrepreneurship in schools, in vocational education, and in all disciplines within universities and establishing entrepreneurship development centres at all higher education institutions.

2.8 Entrepreneurship Education in UAE Higher Education

Higher education institutions exist to serve societies (Sánchez et al. 2017). Entrepreneurship education is also intended for service in society, which means that it must provide for the needs of different stakeholders, such as students, families, and organisations (Fayolle 2013). Traditionally, universities provided their services through teaching and research. In addition to teaching and research, universities must fill new roles: a responsibility often referred to as the "third mission" of higher education (Haase & Lautenschläger 2011). This "third mission" includes contributing to economic well-being through enterprise creation (Sánchez et al. 2017), showing the increasing importance of universities in socioeconomic development (Etzkowitz 2002, 2003; Ranga & Etzkowitz 2013). Guerrero, Urbano, Fayolle, and Mian (2016) asserted

that “the role of universities in promoting entrepreneurship and innovation has been the focus of attention of policymakers and academics from different disciplines (i.e., economics, psychology, and sociology) and perspectives (i.e., individual, organizational, and contextual)” (p. 553). Education is integral for building a competitive economy and an entrepreneurial ecosystem (Chakravarti 2017; Jansen et al. 2015; Trivedi 2016; Woollard 2010). The positive economic effects of education could be partially mediated through higher education’s impact on entrepreneurship (Hunady, Orviska & Pisar 2018). University educators must instil and encourage an entrepreneurial mindset in students and increase awareness of business opportunities (Haase & Lautenschläger 2011).

Universities usually offer entrepreneurship courses as part of business-school study plans or majors, yet only a few UAE universities provide entrepreneurship courses in their business programmes (Ashour 2016). A survey of entrepreneurship courses in UAE universities showed that the majority of UAE universities offer entrepreneurship courses, often including a mandatory course on entrepreneurship and innovation for students in all majors (Saji & Nair 2018). A government directive required an introductory course on innovation and entrepreneurship in the study plans of all UAE undergraduate programmes. The prime minister introduced the policy in 2015 and ordered all federal and private universities in the UAE to include innovation and entrepreneurship education in the curriculum (*Emirates News Agency* 2015). The initiative included launching a partnership with Stanford University in the US, one of the leading universities in the field of entrepreneurship education. The scope of the partnership included the development of the curriculum, the training of university faculty members to teach the entrepreneurship courses, and workshops to raise university professors’ awareness about the programme (*Gulf News* 2015). The Emirate of Dubai further developed and endorsed this strategy in 2019. In 2019, government leaders approved a new strategy for

graduate entrepreneurs that included the creation of creative and economic free zones in universities to support student education, research and funding (Khaleej Times 2019c). According to Gibb (2002a), creating conducive learning environments for entrepreneurship is as important as developing entrepreneurship programmes and courses. In this light, many university educators have also launched innovation and entrepreneurship centres as part of their plans to foster and promote an entrepreneurial culture among students.

2.9 Gaps in Entrepreneurship Education Research in UAE Higher Education

Research on entrepreneurship education in the UAE is still in its early stages (Jabeen, Faisal & Marios 2017; Van Ewijk & Al-Aomar 2016). Thus, little research has been done on how the individuals involved in the process of implementing entrepreneurship education in the UAE perceive entrepreneurship education. A literature search of entrepreneurship education in UAE higher education showed that a majority of researchers had examined students' entrepreneurial intentions as a dependent variable that correlates with several independent variables, including the different components of the theory of planned behaviour (Al Saiqal 2017; Al Saiqal, Ryan & Parcero 2018; Eid et al. 2019; Thomson & Minhas 2017), multidimensional work ethics (Awais, Tipu & Ryan 2016), cultural and socioeconomic variables (Bahrami 2014; Tipu, Zeffane & Ryan 2011), and demographical variables such as age and gender (Majumdar & Varadarajan 2013; Pauceanu et al. 2018). Many scholars did not examine entrepreneurship education as a phenomenon but focused on subjects somewhat related to entrepreneurship education. A smaller number of researchers included entrepreneurship education as an independent or a moderating variable (El-gohary, Selim & Eid 2016; Teh, Al-Dhaafri & Isakovic 2015). Many scholars examined the entrepreneurial intentions of business, economics, and engineering majors (Al Saiqal 2017; Bataineh & Maamar 2016; Majumdar & Varadarajan

2013). The majority of researchers used quantitative research designs and approaches, often with Likert-scale questionnaires.

Few researchers on entrepreneurship education in UAE higher education provided an in-depth account of the views and experiences of entrepreneurship education stakeholders, such as students and educators (Ghafar 2020; Kargwell & Inguva 2012; Mohd Zulkifli Che Omar et al. 2013; Saji & Nair 2018; Zamberi Ahmad 2015). Kargwell and Inguva (2012), for example, used semi-structured interviews to investigate young Emirati entrepreneurs' perceptions of their entrepreneurial journeys after graduating from their universities. Fifty percent of participants agreed that entrepreneurship education had a positive impact on early-stage entrepreneurs. Saji and Nair (2018) conducted interviews with faculty members as part of their mixed-methods research to understand the syllabi and course delivery of entrepreneurship education courses. Similarly, Van Ewijk and Al-Aomar (2016) interviewed faculty members to explore how they taught entrepreneurship education courses. Participants' responses showed that they used an equal mix of traditional and innovative teaching methods and thought that students responded well to this teaching style. Zamberi Ahmad (2015) adapted a rigorous mixed-methods design using interviews, focus groups, observations, and questionnaires to investigate entrepreneurship education in tourism and hospitality programmes in UAE universities. Zamberi Ahmad (2015) highlighted the importance of offering entrepreneurship education courses in an integrated manner with different approaches, such as project work and business simulations. Ghafar (2020) interviewed 12 students and members of one focus group to understand how educators used entrepreneurship education to support their development of 21st-century skills. Students felt that entrepreneurship courses provided them with the opportunity to learn and practice empowerment more than other courses.

The majority of researchers of entrepreneurship education in the UAE have focused on examining Emirati students' intentions and desires to become entrepreneurs, finding that the majority of students enrolled in entrepreneurship education programmes intended to start businesses (Erogul 2014; Majumdar & Varadarajan 2013; Mohammed 2019; Pauceanu et al. 2018; Saji & Nair 2018; Thomson & Minhas 2017). Pauceanu et al. (2018) reported that 74.5% of Emirati male and female students from business and economics programmes in 10 UAE universities said that they intended to start businesses after graduation. Mohammed (2019) found that 58% of male and female graduating business and engineering students from the Al Dhafra region in Abu Dhabi said that they intended to start their own businesses after graduation. Mohammed (2019) also indicated that students feel encouraged to become entrepreneurs based on the entrepreneurship education they receive. Thomson and Minhas (2017) found a high degree of entrepreneurial intentions among third-year female business students at the Higher Colleges of Technology (Sharjah Women's College). Ashour (2016) reported similar results and concluded that 60.6% of male and female students in a variety of disciplines at 14 UAE universities desired to become entrepreneurs. Erogul (2014) reported that approximately 44% and 58.6% of female and male Emiratis, respectively, aged 18 and above saw opportunities for starting ventures in the next six months. The findings from these scholars matched the numbers from the 2016 GEM: UAE Annual Report, which indicated that 49.3% of adults in the UAE intended to start businesses in the next three years (Chabrak et al., 2016). Despite the high entrepreneurial intentions rates, only 5.7% of the population engaged in early-stage entrepreneurial activity in 2016 (Chabrak et al. 2016).

Of the scholars who examined students' entrepreneurial intentions, some highlighted the correlation between those intentions and entrepreneurship education in UAE higher education. Though most researchers supported the proposition that entrepreneurship education had a

positive impact on Emirati students' desires to choose entrepreneurship as a career (Hameed et al. 2016; Pauceanu et al. 2018; Saji & Nair 2018), some reported contradictory findings (Van Ewijk & Al-Aomar 2016). For example, Saji and Nair (2018) noted that efficacy in entrepreneurship courses, as well as course activities and resources, had a positive effect on local business students' entrepreneurial intentions. Likewise, Hameed et al. (2016) investigated the impact of entrepreneurial confidence attained through entrepreneurship education in graduate and undergraduate students in different disciplines as well as students' attitudes and motivation to become entrepreneurs. Hameed et al. (2016) confirmed the positive impact of entrepreneurial confidence on students' entrepreneurial attitudes and motivations. In the same vein, Pauceanu et al. (2018) noted that entrepreneurial confidence had a positive impact on Emirati business and economics students' entrepreneurial intentions. The authors suggested that entrepreneurial confidence was potentially a subconscious effect of the entrepreneurship education courses the students took as part of their programmes. In contrast, Van Ewijk and Al-Aomar (2016) concluded that entrepreneurship education did not have a significant impact on students' intentions for entrepreneurial activity. They reported that participation in entrepreneurship education courses might have resulted in decreased student motivation to become entrepreneurs. Several scholars around the world have produced work that supports the findings of Van Ewijk and Al-Aomar (2016), including Nabi et al. (2017) and Von Graevenitz, Harhoff, and Weber (2010); however, most scholars have found that entrepreneurship education has a positive impact on students' motivation to become entrepreneurs (Bae et al. 2014).

Most scholars of entrepreneurship education in the UAE have applied quantitative research methods. For instance, researchers have frequently used quantitative causational cross-sectional surveys with Likert-scale questionnaires to measure students' entrepreneurial

intentions (Al Saiqal et al. 2018; Awais et al. 2016, El-Gohary, Selim & Eid 2016; Hameed et al. 2016; Teh et al. 2015; Thomson & Minhas 2017; Zeffane 2013). In addition to Likert-scale questionnaires, some scholars used interpretive structural modelling (Jabeen et al. 2017) and structural equation modelling (Eid et al. 2019; Hameed et al. 2016). Several researchers have applied quantitative descriptive cross-sectional surveys to provide descriptive accounts of students' entrepreneurial intentions (Ashour 2016; Majumdar, Gallant & Varadarajan 2010; Majumdar & Varadarajan 2013). Mixed-methods studies of entrepreneurship education in the UAE have mainly been exploratory, with a mix of interviews and questionnaires, focus groups, and observations to solicit students' and faculty members' views (Zamberi Ahmad 2015; Saji & Nair 2018; Van Ewijk & Al-Aomar 2016). The literature search yielded one qualitative study using structured interviews with young Emirati entrepreneurs to explore their perceptions and possible success factors, including entrepreneurship education (Kargwell & Inguva 2012).

It is evident from the preceding literature review that there is a need for qualitative studies on entrepreneurship education in UAE higher education institutions. Little research has been performed on the experiences of the individuals involved in the delivery and implementation of entrepreneurship education courses.

2.10 Study's Theoretical Framework

Theory is defined as "an organized body of interrelated constructs and generalizations that systematically explains and predicts some observed phenomena" (Lunenburg 2011, p. 2). A theoretical framework is thus the "the application of a theory, or a set of concepts … to offer an explanation of an event, or shed some light on a particular phenomenon or research problem" (Imenda 2014, p. 189). A theoretical framework is the "blueprint" of a dissertation study (Grant & Osanloo 2014) which serves as a foundation of how the research is constructed (Adom, Hussein & Agyem 2018). The theoretical framework provides a way for researchers

to define their research philosophy, epistemology, methodology, and analysis plan (Grant & Osanloo 2014). The theoretical framework guides the findings of the study, in which the researcher should verify, modify, or extend the theories that were selected for the study (Adom, Hussein & Agyem 2018). Fayolle (2013) suggested that entrepreneurship education "needs robust theoretical and conceptual foundations, drawing from the fields of entrepreneurship and education to support entrepreneurship programmes and courses" (p. 693). Since this study looks at the implementation of entrepreneurship education and its role in preparing Emirati undergraduates to become future entrepreneurs, human-capital theory (HCT; Becker 1962; Schultz 1961), the entrepreneurship teaching model (Fayolle & Gailly 2008), and experiential-learning theory (Kolb 1984) are logical theories to bring together to serve as the framework for the study.

2.9.1 Human Capital Theory

HCT has its origins in the ideas of US Chicago School economists Theodore Schultz (1961) and Gary Becker (1962). The two elements to the theory are that education is to be seen as an investment rather than a consumption and that wage or income can be linked to education (Gillies 2011). HCT posits that the skills and knowledge an individual possesses are directly correlated with the individual's opportunities for economic development (Tan 2014). HCT also indicates that the varying knowledge and skills that people possess have an effect on their national economies (Marvel, Davis & Sproul 2016). Therefore, HCT has implications beyond the individual level: the economic vitality of the entire nation depends on developing rich human resources. The HCT enables an understanding of the value of education and experience for the economic well-being of nations.

HCT is one of the most influential theories used to inform educational policies worldwide (Gillies 2011, 2015). The growing concept of the knowledge economy has also lent its strength

to HCT because it explains the connection between education and economic development (Gillies 2011). According to Becker (1993), education and training are two of the most important investments in the formation of human capital at the individual and national levels. The effectiveness of any educational system influences the skills acquired by individuals (Burgess 2015). For instance, countries that have more schooling years see more growth and productivity (Klös & Plünnecke 2003). Thus, many nations around the world invest substantial amounts of money in the development of their educational systems to improve the knowledge and skills of their citizens (Olaniyan & Okemakinde 2008). In the UAE, the budget allocated to education for the year 2020 was 10.4 billion dirhams, to ensure the sustainability of educational development programmes (Abbas 2019).

Scholars of entrepreneurship widely apply HCT to their research, showing that successful entrepreneurial activity relies on pre-existing human capital in the form of knowledge and skills (Marvel, Davis & Sproul 2016; Volery et al. 2013). Entrepreneurship-related human capital assets may include 1) personality traits such as entrepreneurial self-efficacy, 2) beliefs such as perceived desirability and feasibility, 3) entrepreneurial knowledge, and 4) entrepreneurial competencies (Volery et al. 2013). HCT indicates that when new and profitable economic opportunities exist, individuals with higher-quality education should have the chance to act upon those opportunities to create economic prosperity. Moreover, human capital is one of the most important selection criteria used by venture capitalists when evaluating investment opportunities (Marvel, Davis & Sproul 2016). Martin, McNally and Kay (2013) emphasized this point by stating that the formation of human capital through entrepreneurship education has positive effects on the creation of entrepreneurial opportunities, the acquisition of financial resources for new ventures, and the accumulation of new knowledge beneficial to new firms. Governments around the world have shown increasing interest in the formation of human

capital through entrepreneurship and have increasingly provided students with entrepreneurship education and training programmes (Martin, McNally & Kay 2013).

It is particularly important for the UAE to develop its local human capital because of the challenges posed by its population imbalances (MBR Knowledge Foundation, 2014). Accessibility to higher education in the UAE is complimentary for all Emirati high-school graduates through federally funded institutions. The government is also making efforts to encourage entrepreneurial values in its citizens in order to promote economic development (Vision 2021 2010). The current study shows that the knowledge and skills acquired through higher education are essential for the formation of human capital, specifically for entrepreneurship (Davidsson & Honig 2003).

2.10.2 Entrepreneurship Teaching Model

The second part of this study's theoretical framework is the entrepreneurship teaching model (ETM). The concept of teaching models in education is not new but rarely appears in entrepreneurship education (Fayolle 2013). According to Béchard and Grégoire (2005), "teaching models form a bridge between educators' knowledge, conceptions and beliefs about teaching, and their teaching behaviour per se" (p. 264). Fayolle and Gailly's (2008) ETM is one of the four most prominent contributions to ETMs, along with the ideas of Béchard and Grégoire (2005), Kyrö (2008). The models created by Béchard and Grégoire (2005), Fayolle and Gailly (2008), and Kyrö (2008) all try to explain entrepreneurship education from an ontological point of view and link it to the teaching and learning practices thus guiding faculty members to better reflect on their teaching practices. (Kyrö 2008).

One of the most controversial topics in the entrepreneurship education field is how educators should teach entrepreneurship (Blenker et al. 2011; Fayolle 2013). Unified and theory-based

pedagogical approaches to entrepreneurship education are still lacking (Fayolle & Gailly 2008). Although there is no specific pedagogy for entrepreneurship education, any educator considering a teaching model for entrepreneurship education should depend on the enforced objectives, audiences, content, and restrictions of the institutional context (Arasti, Kiani Falavarjani & Imanipour 2012). The basis of Fayolle and Gailly's (2008) model is the acknowledgement of the diversity of the definitions, contexts, and methods found in entrepreneurship programmes. Simply put, their theory is an answer to the "key questions every educator should ask: What? For whom? Why? How? For which results?" (Fayolle & Gailly 2008, p. 571). Fayolle and Gailly (2008) designed their ETM to provide educators with a useful theoretical and practical framework for developing entrepreneurship programmes. The model is based on seven propositions as follows:

P1. Each entrepreneurship education programme should be based on a clear conception of entrepreneurship leading to a non-ambiguous definition of entrepreneurship education.

P2. Educator or teacher should clarify for each entrepreneurship teaching course he or she is in charge his or her philosophical positions concerning key conceptions about teaching, the role of teacher, and the role of students or participants.

P3. Entrepreneurship education course should target clear and comprehensive objectives at the micro (individual, participant) level and at the macro (organisation, society) level.

P4. Entrepreneurship education course should be designed using a thorough understanding of the profile and background of the audience, particularly in terms of prior entrepreneurial exposure.

P5. In line with the objectives and the audience characteristics, the identification of the relevant evaluation criteria, mainly at the learning level of the Kirkpatrick's approach, and their effective measurement methods should be defined.

P6. Depending on the objectives and audience profile, the contents of each entrepreneurship course should be explicitly defined through a combination of three dimensions (professional, spiritual, and theoretical).

P7. The selection of the pedagogical methods for each entrepreneurship education course should rely upon their adequacy and a priori efficiency regarding the objectives, the audience characteristics, the contents, and the constraints due to the institutional context.

The ETM discusses entrepreneurship education on the ontological and didactical levels as shown in Figure 2. On the ontological level, Fayolle and Gailly aimed to define the guiding and informational educational concepts for educators and participants. This step includes both a precise definition of entrepreneurship as a teaching field and a definition of what education means for educators and students within the entrepreneurship context. The researchers argued that educators should base entrepreneurship education programmes on a clear understanding of entrepreneurship and clarify their philosophical positions about teaching entrepreneurship. Fayolle and Gailly echo the discussion about entrepreneurship definition presented earlier in Chapter 2 by stating that for most people, entrepreneurship as a concept is still not clear. The authors also mentioned that the definition for some refers to venture creation and for others to the development of skills and attitudes. Fayolle and Gailly do not see the variety of definitions as an issue as long as educators choose a clear definition before designing their entrepreneurship programmes. In terms of defining education in the context of entrepreneurship, Fayolle and Gailly stressed the importance of differentiating between "to teach" and "to educate". This differentiation does not necessarily mean substituting one for the other but is rather to make explicit educators' approaches to entrepreneurship education. They further argued that both notions should be used in entrepreneurship programmes and courses. Teaching, because it implies the transfer of entrepreneurship themes and knowledge; and educating to develop students' minds, awareness, and skills.

On the educational level, the ETM provides five interrelated areas around which entrepreneurship programmes are designed: objectives (why?), contents (what?), methods

(how?), audiences (for whom?), and evaluations (for which results?). The objectives (why?) of entrepreneurship courses, according to the ETM may either be learning objectives or socioeconomic objectives. The learning objectives can be related to raising students' awareness about entrepreneurship, making them consider it as a career option, improving entrepreneurs' image in students' mind by highlighting their socioeconomic roles, and teaching students how to search for opportunities and turn them into economic or social activities. The socioeconomic objectives should be concerned with equipping students with specific techniques and skills that prepare them to act as entrepreneurs in different contexts, including within organisations (intrapreneurship). This may include teaching them topics such as principles of venture creation.

Entrepreneurship education content (what?), according to the ETM, can be categorised into three dimensions: professional, spiritual, and theoretical. The professional dimension is more about practical knowledge that, in turn, is mainly about know-what, know-how and know-who. Know-what is concerned with what actions individuals have to make in certain situations, such as validating an opportunity. Know-how is about ways of dealing with certain situations such as how to deal with risks. Know-who is concerned with identifying useful people, such as venture capitalists. In contrast, the spiritual dimension of entrepreneurship education, according to the ETM, enables individuals "to position themselves in space and time as regards the entrepreneurial phenomenon" (Fayolle & Gailly 2008, p. 578). Positioning in space entails that individuals identify the entrepreneurial situations that most fit them, while positioning in time requires individuals to identify moments in their lives when it is possible and desirable to embark on an entrepreneurial journey. The spiritual dimension focuses on two elements: know-why and know-when. Know-why helps individuals understand what could lead them to do what entrepreneurs do. Know-when assists individuals in knowing when the right time for them

is to start a new entrepreneurial project. Finally, the theoretical dimension concerns the theories and scientific knowledge necessary to understand the entrepreneurial phenomenon. In terms of methods (how?) used to teach entrepreneurship education, Fayolle and Gailly stressed the importance of using methods or pedagogies that best fit the objectives and contents of the course or programme. Teaching methods may include the creation and evaluation of business plans, case studies, role play, and inviting entrepreneurs for interviews or for mentoring or coaching students.

Fayolle and Gailly stated that in the design phase of entrepreneurship courses, educators must understand their audience's (for whom?) backgrounds, their social environments, and their general psychological characteristics. Students in entrepreneurship courses may vary considerably in terms of their intentions, their prior entrepreneurial experiences, and their access to parental role models. Therefore, it is important to explore their characteristics beforehand to customise the courses in order to make them more relevant. The last area that has to be considered when designing entrepreneurship courses according to the ETM is the evaluation (for which results?). Assessing the impact of entrepreneurship courses depends on the evaluation criteria selected on one hand and the measurement tools on the other hand. The selection of evaluation criteria needs to be related to the objectives of the course; therefore, it can be related to knowledge, the development of certain skills, degree of motivation and awareness developed, and so on. Measuring the effectiveness of entrepreneurship courses should consider time and contextual factors. For example, measurement taking place 0–5 years or more after students have attended an entrepreneurship course should consider contextual factors such as personal and environmental factors, which in turn include social status, parental role models, and prior entrepreneurial experiences.

Fayolle and Gailly (2008) posited that the different choices made at each of the ontological and educational levels would result in different learning processes. They grouped the resulting learning processes into three categories: learning to become an enterprising individual, learning to become an entrepreneur, and learning to become an academic in the field of entrepreneurship. Each learning process includes different teaching strategies, as well as the relevant theories and concepts educators could use to create conditions for effective learning. Entrepreneurship faculty members, university academic leaders, and policymakers in the UAE can use the model as an in-depth examination of the different aspects of entrepreneurship programmes and courses and base their programme and course design on its components.

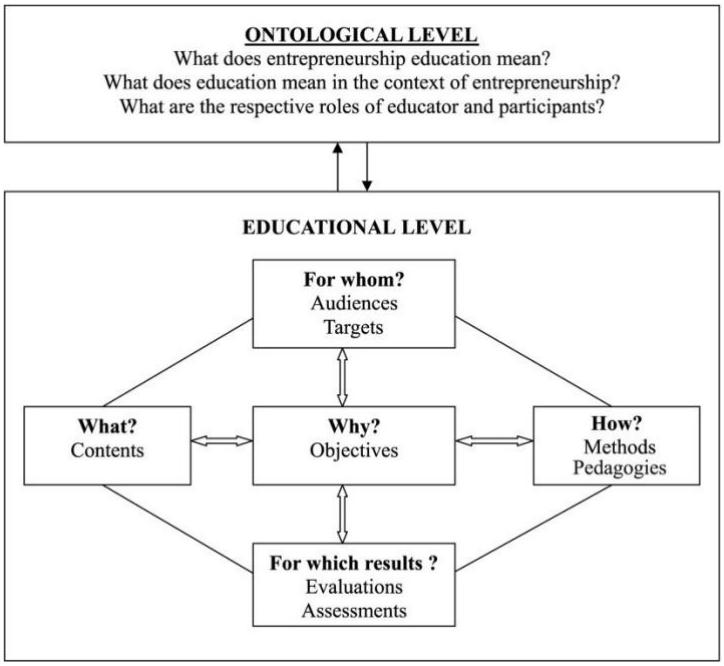

Figure 2: Fayolle and Gailly's generic entrepreneurship teaching model (Adapted from Fayolle & Gailly 2008, p. 572)

2.10.3 Experiential Learning Theory

The third part of the theoretical framework of this study is experiential learning theory (ELT). ELT offers one approach for universities to take when developing their entrepreneurship programmes. Experiential learning, or learning by doing, is the considered one of the best

approaches to teaching entrepreneurship (Canziani et al. 2015; Kuratko 2005; Lackéus 2015). Experiential learning stems from the constructivism learning paradigm. Constructivism is the dominant pedagogical theory in recent educational practices (Ertmer & Newby 2013; Krahenbuhl 2016). According to constructivism, individuals are responsible for their learning processes (Kay & Kibble 2016; Kozlinska 2016), and prior experiences and information are the foundation for new knowledge-building (Krahenbuhl 2016). Ertmer and Newby (2013) stated that a student in a constructivist classroom is far from passive and is "likely [to] be immersed in an apprenticeship experience." Furthermore, constructivism as a learning theory "seems to provide a better explanation of how knowledge is created within the complex, chaotic, and unpredictable context of entrepreneurship" (Mueller & Anderson 2014, p. 505). Learning by experience is described with different terminologies, such as "learning by doing" and "experience-based learning". ELT is different from these concepts since experience is the most important tool in the learning process. ELT is different from cognitive learning theories because cognition is based on the cost of effect. ELT also differs from behavioural learning theories as experience in learning is not neglected (Kolb, Boyatzis & Mainemelis 2000). The teaching methods most used in experiential learning are group assignments, field projects, live cases, and internships.

One of the most widely used experiential theories in the field of adult learning is David Kolb's (1984) ELT (Bergsteiner, Avery & Neumann 2010; Kinesiology et al. 2017). Kolb developed a holistic framework of the experiential learning process (Kolb & Kolb 2005) that provides an understanding of the "relation between learning, work and the creation of knowledge itself" (Tete et al. 2014, p. 432). Kolb defined learning as "the process whereby knowledge is created through the transformation of experience" (1984, p. 41). Kolb (2014) asserted that people learn from experience rather than from just given instructions (Bergsteiner et al. 2010).

According to Kolb and Kolb (2005), the ELT has six concepts shared by experiential learning scholars: "(a) learning is best conceived as a process, not an outcome, (b) all learning is relearning, (c) learning requires conflict resolution between dialectically opposed modes of adaptation to the world, (d) learning is a holistic process of adaptation, (e) learning results from synergetic transactions between the person and the environment and (f) learning is the process of creating knowledge" (pp. 43-44). Kolb (1984) suggested a cyclic model with four stages. Two of the stages indicate the modes of grasping experience (i.e., concrete experience and abstract conceptualisation) and two indicate transformative experiences (i.e., reflective observation and active experimentation). The model also indicates the four learning styles associated with the different learning approaches, namely diverging, assimilating, converging, and accommodating (Kolb & Kolb, 2005). Experiential learning provides students with opportunities to actively participate in their learning processes for deeper knowledge.

According to Politis (2005), "Much of the learning that takes place within an entrepreneurial context is experiential in nature" (p. 339). An increasing number of entrepreneurship educators have adapted the experiential learning practices that are most relevant to real-life entrepreneurship (Kakouris & Georgiadis 2016). Many researchers have also concluded that experiential learning approaches increase students' intentions to become entrepreneurs as well as recognising their entrepreneurial abilities (Canziani et al. 2015). Robinson et al. (2016) postulated that entrepreneurship educators should focus more on student-centred experiential learning practices than instructor-led approaches. Educators who use traditional pedagogical methods, such as lectures, struggle to convey what entrepreneurship means to students (Pittaway & Cope 2007a). Pittaway and Cope (2007a) argued that a successful learning environment is one that provides students with "freedom and responsibility to take action, make decisions and actually do something—the result being that in doing they learn" (p. 229).

Similarly, Potter (2008) stressed that educators could best teach entrepreneurship through "a series of more interactive, reality-based and experiential approaches" (p. 315). Pittaway and Edwards (2012) also conveyed that teaching *through* entrepreneurship has more positive results than teaching *about* or *for* entrepreneurship. Educators who foster experiential learning allow students to develop their entrepreneurial knowledge and skills (Canziani et al. 2015); thus, experiential learning is one of the most efficient and effective learning approaches for developing pedagogies for entrepreneurship education.

Taken together, HCT, the ETM and ELT serve as the framework for this study. HCT contextualises the formation of knowledge, skills, competencies, and aptitudes in entrepreneurship programmes in higher education institutions in the UAE. Once it has been established that human capital formation is the goal of entrepreneurship education. ETM explains how entrepreneurship courses and programmes can be designed ontologically and didactically by educators in higher education institutions to best serve their students. ELT then describes the optimal way for students to acquire their entrepreneurial skills which allows the researcher to explore the various aspects of the university experience, taking into account the teaching, curriculum, and learning activities that form part of the programme. Participants' viewpoints and experiences about entrepreneurship education in UAE universities underwent examination using these three components of the theoretical framework. Creation of the interview questions and criteria for choosing documents for analysis was achieved by using the concepts adapted from the theoretical framework of this study.

2.11 Summary

This chapter provides a synopsis of the literature on entrepreneurship education as well as an overview of entrepreneurship and the definitions of entrepreneurship education. The reviewed literature shows two distinct definitions of entrepreneurship. According to the first definition,

entrepreneurship involves an individual in a business-creation endeavour who is mainly concerned with the knowledge and skills used to create and grow financially rewarding ventures. The other perspective presents entrepreneurship as a value creation process, with new business creation not being the only outcome of entrepreneurial activity. Following the latter view, university educators need to plan their entrepreneurship education offerings to develop the entrepreneurial mindsets and business creation skills of all students, irrespective of their chosen majors.

The chapter also presents entrepreneurship as one of the drivers of socio-economic development. Entrepreneurship is one of the pillars transforming the UAE economy into a knowledge economy based on its potential to provide economic and social value and benefits for societies. Due to the perceived benefits of entrepreneurship, entrepreneurship education is popular in many parts of the world. As a result, the field of entrepreneurship education has grown significantly compared to other academic disciplines. Scholars also debate whether entrepreneurship is teachable and if it belongs to a specific major. These debates have an effect on how and where entrepreneurship education is offered. In this chapter, I propose that university faculty members should treat entrepreneurship education as a campus-wide initiative in which members from academic departments and service departments work together to deliver interdisciplinary entrepreneurship education programmes to promote an entrepreneurship mindset and culture among students.

In the UAE, research on and the implementation of entrepreneurship education are in their early stages. Therefore, more qualitative research on the experiences and viewpoints of those who are involved in the process is required. University educators in the UAE must provide effective entrepreneurship education to advance the country's economic and social status; thus,

more research is required to understand the best practices of entrepreneurship education and how these practices are applicable in the UAE.

The chapter also discussed the three theories used to form the theoretical framework of this study. Together, HCT, the ETM, and ELT served as frameworks in this study. Participants' viewpoints on and experiences of entrepreneurship education in UAE higher education institutions, as well as of documentary analysis, underwent examination using these components. Creation of the interview questions and criteria for choosing documents for analysis was guided by the concepts adapted from the theoretical framework of this study.

Chapter 3: Methodology

This chapter presents the methodology used for the study. It begins by discussing the overall approach to the research and the justification for using a qualitative, multiple-methods study based on interviews and documentary analysis. It then presents the philosophical and paradigmatic foundations of the study, which are based on interpretivism and constructivism. The following sections describe the processes of sampling, data collection, and analysis. First, the target population is identified, the sampling method is discussed and the size and characteristics of the interview sample are set out. The two methods of data collection are presented and these are justified in terms of the objectives and research questions of the study and contrasted with other methods. The processes of data analysis are then described, which consist of thematic analysis of both the interviews and the documentary evidence. The next section discusses the actions taken to ensure the trustworthiness or overall quality of the study, based on Lincoln and Guba's (1985) framework for establishing trustworthiness in qualitative research. The steps taken to address ethical considerations when conducting the study are then set out, and the limitations of the research are highlighted.

3.1 Research Design

A research design is informed by a researcher's selected research paradigm or philosophy, which reflects their ontological and epistemological perspective and influences their choice of methodology. A research design should also reflect the research questions of a study and the types of information that are needed to answer these research questions. Byrne (2001) argues that a research design links a particular philosophy to the appropriate research methods and strategies. The selected research paradigm and methodological approach used in the current study are discussed in the following sections.

3.2 Philosophical and Paradigmatic Foundations

Identifying research philosophical basis is essential. According to Leitch et al. (2010), "Undertaking credible social research requires that the questions asked, and the designs employed are shaped by the researcher's underlying ontological and epistemological assumptions" (p. 69). Ontology relates to the assumptions that are made about the nature of social reality: in particular, whether the social world has an objective reality outside the experiences of individuals (in the same way as the natural world) or has no objective reality and is socially constructed in the minds of those who experience it (Bryman, 2001). Epistemology refers to the interrelated beliefs that are held about how social phenomena can be investigated: for example whether these can be measured and investigated objectively using similar techniques to those used in the natural sciences or whether they can only be understood through the perspectives of individuals who have experience of them. The ontological and epistemological perspectives of the researcher will shape the research paradigm of the study. The two dominant paradigms that are respectively associated with each of the main ontological and epistemological perspectives are positivism, interpretivism and constructivism. The positivist research paradigm assumes that there is an objective reality to the social world and that it can be investigated and measured using statistical techniques (Newell & Burnard, 2011).

In contrast, both the interpretivist and constructivist paradigms were considered appropriate for the present study. Interpretivism asserts that reality is subjective and that there are as many realities as there are individuals (Krauss 2005; Scotland 2012). According to interpretivism, "investigation of the social world is not, and cannot be, the pursuit of detached objective truth" (Leitch et al. 2010, p. 69). Interpretivism also presents that scholars must situate individuals' views and understandings about a phenomenon in the cultural and historical contexts of that phenomenon (Ritchie & Lewis 2003; Scotland 2012). Constructivism (Glesne 2011) or social

constructivism (Creswell & Poth 2018) indicates that reality is a human social construct that cannot exist without people's perceptions (Tubey et al. 2015). The goal of the study was to draw on participants' views of a specific situation taking into consideration their contextual background (Creswell & Poth 2018), thus both Interpretivism and Constructivism were considered appropriate

Because entrepreneurship is a complex phenomenon, educating students to become entrepreneurial is similarly complex. As indicated in the literature review, previous scholars of entrepreneurship education in the UAE have mostly used a positivist paradigm with quantitative data collection methods and analysis. The goal of the study was to demystify the complexity of entrepreneurship education by investigating participants' perspectives. The study fills the gap in the literature by presenting the experiences of participants involved in the process of entrepreneurship education implementation. The experiences of entrepreneurship faculty members, university academic leaders, and policymakers underwent exploration to gain an in-depth understanding of their accounts of entrepreneurship education implementation in the UAE and among Emirati students. The small amount of research on entrepreneurship education in the UAE indicated that an interpretivist/constructivist viewpoint was appropriate for the interpretation of participants' views and provided rich and thick descriptions of how to improve entrepreneurship education implementation in the UAE. The interpretivist/constructivist approaches were useful for in-depth investigation and important insights that practitioners and policymakers can use to improve entrepreneurship education.

3.3 Methodological Approach

The purpose of the study was to examine the views of entrepreneurship faculty members, university academic leaders, and policymakers on entrepreneurship education implementation in UAE higher education institutions. These objectives and the use of the

interpretivist/constructivist research paradigm discussed above led to the selection of qualitative research methods, which are closely aligned with this paradigm as they involve exploring social phenomena from the perspective of individuals who have personal experience of it (Creswell & Poth 2018; Glesne 2011; Marshall & Rossman 2006).

Qualitative methods are appropriate when the objective is to understand a phenomenon in depth based on information from individuals who have direct experience or knowledge of it. Scholars have widely used qualitative research methods since the late 19th century (Ritchie & Lewis 2003) to facilitate the understanding of a phenomenon through the exploration of individuals' perspectives about the phenomenon (Creswell 2009; Glesne 2011; Krauss 2005; Merriam 2009; Scotland 2012). Unlike quantitative research, scholars using the qualitative approach often seek to understand and uncover meanings rather than explain or determine causes and effects (Mack 2010; Merriam 2009). Cohen et al. (2007) said that scholars use qualitative research to "demystify social reality through the eyes of different participants" (p. 17), as attempted in this study. Qualitative research methods focus on understanding how individuals make sense of and interpret their social reality, rather than assuming that this can be investigated directly outside the experiences of individuals (Bryman, 2001). While quantitative research does provide a certain amount of information about a broad population or category, qualitative research is concerned with providing as much detail or depth as possible about a specific phenomenon or a small selected group of individuals (Borland, 2001). Qualitative research was seen as appropriate in the current study for learning how educators perceived, understood, acted upon, and applied entrepreneurship education in the UAE.

Scholars also conduct qualitative research when there is little prior literature to understand or explore a phenomenon or to develop indicators of a phenomenon for use in quantitative research (Creswell 2009; Marshall & Rossman 2006). According to Creswell (2009):

> Qualitative research is especially useful when the researcher does not know the important variables to examine. This type of approach may be needed because the topic is new, the subject has never been addressed with a certain sample or group of people, and existing theories do not apply with the particular sample or group under study. (p. 20)

Because of an absence of prior study of the research problem, much was unknown about what variables or concepts existed relating to entrepreneurial education in UAE universities. The lack of studies on UAE stakeholders' views and understanding of entrepreneurship education therefore further justifies the use of a qualitative research design (Glesne 2011; Leitch, Hill & Harrison 2010; Mack 2010; Merriam 2009; Ritchie & Lewis 2003; Tubey et al. 2015). Due to the research questions, the lack of research on the topic, and the unavailability of constructs for a quantitative instrument, qualitative research was determined to be the most appropriate means of achieving the study's objectives.

As a researcher, I understand the debate on the usefulness of qualitative research to educational policy. It is known and established that policymakers prefer quantitative studies to assess the process of scientific, research-driven policymaking. However, the focus on quantifying reality and representing phenomena in numbers should not overpower the need for rich and detailed accounts scholars can use to contribute to the development and validation of theories, which form the basis of any educational research. Lingard (2010) contended that education researchers need various methods and theoretical approaches to deal with the complexity of educational problems. According to Lingard (2010), "There needs to be the opportunity, in my view, for education researchers generally and specifically in relation to research on education

policy, to 'make' their research problems and to choose the appropriate methodological and theoretical framework" (p. 386). Leitch, Hill and Harrison (2010) argued that scholars should use more and better-designed interpretivist methodologies because entrepreneurship is a complex social phenomenon bounded and affected by contextual factors.

3.4 Use of Multiple Methods and Data Triangulation

The use of multiple methods can be a valuable means of triangulation, a term used to refer to the process of using different research methods, sources, or types of data to examine a phenomenon. If the chosen methods show consistent or compatible findings, this helps enhance the trustworthiness of the resulting findings. As described by Denscombe (2003), triangulation involves locating a true position by referring to two or more other coordinates" (p. 133). The benefits of triangulation include providing an improved understanding of the phenomenon being studied and improving its credibility and validity (Olsen, 2004). The drawbacks are that it increases the time and cost involved in conducting research (Patton, 1999). Triangulation can take the form of combining quantitative and qualitative research—methodological triangulation—or it can consist of combining different forms of data such as primary interview data and secondary sources, in an approach known as data triangulation (Cohen & Manion, 1986; Olsen, 2004). Other forms include investigator triangulation—the use of multiple researchers in a study, and theoretical triangulation—using multiple theoretical frameworks to interpret the data (Turner & Turner, 2009).

In the present study, the original plan had been to conduct a mixed-methods study combining quantitative and qualitative data collection. However, it proved impractical to develop a quantitative instrument, such as a questionnaire, when not much literature was available to support the development of a sound and a valid instrument. Additionally, the objective was to develop an in-depth and comprehensive picture of the implementation of entrepreneurship

education in the UAE, which would not have been possible using quantitative methods. Therefore, a qualitative approach was seen as most suitable for generating concepts and meanings through participants' experiences and their perspectives on what they thought important or not important about the research problem. The in-depth nature of the qualitative approach enabled the identification of the possible problems of and opportunities for entrepreneurship education implementation.

Within the qualitative approach, however, data triangulation was used based on primary data collection from interviews and an analysis of relevant documentation. This was intended to ensure that the study captured the official position on entrepreneurship education in the UAE as well as participants' descriptions of the state of entrepreneurship education in UAE's higher education in practice. This approach was intended to enhance understanding of the current practices in the field and where there are gaps between policy and practice.

3.5 Sampling and Participant Selection

In qualitative research, sampling is "the selection of specific data sources from which data are collected to address the research objectives" (Gentles et al. 2015, p. 1775). Purposive sampling is a nonprobability sampling technique in which scholars deliberately choose participants who possess certain qualities or characteristics (Etikan, Abubakar Musa & Sunusi Alkassim 2016; Ritchie & Lewis 2003). The technique contrasts with the probability sampling techniques that are necessary in quantitative research to enable estimation of the extent to which findings based on a sample can be generalised to the wider population from which this sample is drawn (Denscombe, 2003). Researchers use nonprobability sampling in qualitative research (Oppong 2013; Teddlie & Yu 2007) to select participants with the potential of providing the study with rich and relevant information (Etikan et al. 2016). Purposive sampling is appropriate when a scholar aims to develop theories and concepts by understanding participants' experiences

(Devers & Frankel 2000). Because the study presented the experiences of a specific group of participants, purposive sampling was apt to choose individuals who could provide rich and relevant information, thus achieving the study's objectives. Scholars use typical-case sampling to select from the larger population participants who will most likely represent "average" or "typical" behaviour (Devers & Frankel 2000; Onwuegbuzie & Collins 2007; Ritchie & Lewis 2003), as was the case in this study. The study also included the use of snowball sampling, which involves asking the initial sample members to identify other potential research participants known to them who are likely to have the types of experience or knowledge required to address the research questions. Snowball sampling is often an efficient way to generate a sample or help a researcher make contact with suitable research participants, especially within groups that might otherwise be hard to identify or make contact with by other means (Trochim, 2006). This applied, for example, to some faculty members included in this study.

There can be a risk of sampling bias in purposive sampling if the process is used to select only the most easily accessible or cooperative participants (Creswell, 2007). However, this risk can be reduced by the use of maximum diversity, in which the researcher tries to ensure that the sample includes individuals who are diverse as much as possible within the inclusion criteria sampling (Patton, 1990; Morse, 1994). In the case of this study, this was addressed by including participants from a range of different institutions in the UAE.

In this study, the population from which the sample was derived was higher education institutions (a) accredited by the MoE-Higher Education Affairs, (b) with a UAE national undergraduate student population of 50% or higher, (c) established and in operation for at least 10 years, and (d) that included both male and female students. Entrepreneurship faculty members and university academic leaders were selected based on the four mentioned criteria.

These criteria ensured that participants had the resources and the knowledge required to provide well-informed answers for the research questions. Recruitment of policymakers from government entities was based on their roles and involvement in the implementation of entrepreneurship education in UAE universities. In addition to participants form higher education institutions, the study included policymakers from MoE and the Knowledge and Human Development Authority (KHDA). Table 2 below shows the number of participants according to the type of institution. In total, there were 16 participants from seven higher education institutions across the UAE and two government entities (MoE and KHDA).

Type of Institution	Number of Participants
Government Universities	Six entrepreneurship faculty Four academic leaders
Private Universities	Three entrepreneurship faculty One academic leader
Government Entity	Two government officials (policymakers)

Table 2: Number of participants according to the type of organisation or institution

3.6 Data Collection Methods

The data collection methods used in qualitative research are documentation, archival records, interviews, direct observations, participant-observation, and physical artefacts. Documentation and semi-structured interviews were the data collection methods in this study.

3.6.1 Documentation

Merriam (2009) postulated that one advantage of using documents in research is that documents are the "products of the context in which they were produced and therefore grounded in the real world" (p. 156). Document analysis is a common component in qualitative research (Bowen 2009). Document analysis is a "systematic procedure for reviewing or

evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material" (Bowen, 2009, p. 27). Both electronic and printed forms underwent analysis to provide contextual data for the study and to corroborate findings from semi-structured interviews (Bowen 2009; Yin 2018). Scholars must understand participants' contextual characteristics to comprehend the effect of these characteristics on participants' experiences (Creswell & Poth 2018). Because some document collection and analysis occurred in the first phase of research, the analysed documents provided information for the interviewing phase by showing the questions the researcher should ask (Bowen 2009).

Institutional, governmental, and personal material collected enabled document review. The institutional documents included course-related documents, such as the syllabi and lesson plans used in the entrepreneurship courses taught by faculty participants. The institutional documents underwent analysis for the content, objectives, assessments, teaching methods, and organisation of the entrepreneurship courses. I also accessed the participating higher education institutions' institutional documents, such as the academic catalogues and annual reports. These institutional documents provided a contextual background, as well as information on the institutional policies of entrepreneurship education implementation within those higher education institutions. Additionally, I requested and accessed documents on the implementation of entrepreneurship education in higher education from government entities to gain a holistic and large-scale understanding of the issue. These governmental documents included policies and other related documents from the UAE Government Portals, the MoE, and the UAE's NQA. Personal documents were collected from entrepreneurship faculty members and these were their curricula vitae.

3.6.1.1 Documents validation method

Selecting and including the documents in the study entailed a three-step protocol: authenticity, credibility and representativeness (Mogalakwe 2006). Authenticity is "whether the evidence is genuine and of reliable and dependable origin" (Mogalakwe 2006, p. 225). All of the documents in this study came from official government websites or reliable individuals. For example, the MoE's strategic plan documents were obtained through communication with MoE officials, whereas faculty participants provided the course syllabi. Credibility refers to "whether the evidence is free from error and distortion" (Mogalakwe 2006, p. 226). The documents included in this study were all produced beforehand and were already published or used by the concerned parties. The choice of documents was based on the information included and whether the information was useful for the study. Representativeness, according to Mogalakwe (2006), refers to "whether the evidence is typical of its kind" (p. 227). The selected documents for the study included as much information as possible on the various aspects of entrepreneurship education implementation in higher education, from both governmental and institutional points of view.

3.6.2 Semi-Structured Interviews

Interviews are one of the most commonly used data collection methods in qualitative research. Researchers use interviews to discover valuable knowledge about how people create meanings in their worlds (Qu & Dumay 2011). Merriam (2009) emphasised the need to ask good questions to obtain good data from interviews.

Two main types of interviews are generally used in qualitative research: semi-structured and unstructured interviews. These contrast with the structured interviews more suited to quantitative research, in which participants are all asked exactly the same pre-determined questions and are required to select from pre-coded response categories. This allows for

comparability of responses between interviewees but does not enable them to contribute additional information based on their own individual experiences (Fontana & Frey 1994), something that is especially important in interpretivist qualitative research. Because the purpose of the present study was to understand participants' views and perceptions, a highly structured interview was not suitable as it would not have provided enough exploration for an in-depth understanding.

In contrast, unstructured and semi-structured interviews include open-ended questions which allow respondents to answer in their own words and contribute any information they perceive to be relevant (Denzin and Lincoln, 2003). Unstructured interviews take the form of a conversation between the interviewer and interviewee and are often used when conducting research on sensitive topics or conducting biographical research in order to gain a high level of participant trust or a full understanding of their individual experiences (Corbin & Morse, 2003). In semi-structured interviews, the same initial questions are asked of all participants, allowing a degree of comparability and also ensuring that they remain focused on the research questions (Patton, 1990). However, in this form of interviewing, the interviewer has the option to vary the specific wording or order of the questions or to use follow-up probes in order to tailor each interview to the participant's own characteristics and experiences and to generate rich, in-depth data which accurately reflects these (Creswell, 2005; Patton, 1990). Semi-structured interviews were selected for the present study in order to explore experiences of implementing entrepreneurship education in the UAE from the individual perspectives of the interview participants while ensuring that the interviews remained focused on generating information that would answer the research questions and allowing for some comparability of the findings between different participants. The use of semi-structured interviews also allowed the researcher to explore individual views and perspectives more fully by probing and seeking

clarification of answers if necessary. Individual interviews were used rather than focus groups— another form of data collection often used in qualitative research. Focus groups can be helpful for generating qualitative data cost-effectively from a number of participants at the same time, and the process of group interaction sometimes encourages them to contribute information that they would not have volunteered in an individual interview (Wood, 2006). However, focus groups can be difficult to organise logistically, and individual interviews are often more practical and convenient for both the participants and the researcher. Further, interviewees may be more prepared to volunteer sensitive information in an individual interview than in a group setting. It can also be easier for the interviewer to engage with and develop a rapport with the research participants in individual interviews (Morgan, 1997).

The interview protocols developed (one for each participant group—entrepreneurship faculty members, university academic leaders and policymakers) were appropriate to ensure each interview was efficient and consistent. Questions were based on the themes investigated with the study's theoretical framework as well as the relevant literature. The first section of each protocol, which corresponded to the first research question, was the same for all respondents and included questions about participants' understanding of national and institutional entrepreneurship education policies in the UAE. In the second section of the interview protocol, participants discussed their personal views on the meaning of entrepreneurship. The remaining questions were about the roles and responsibilities of each participant group, with participants asked for their views and experiences with the implementation of entrepreneurship education in UAE universities.

3.6.2.1 Interviews validation method

Validation of the interview protocol occurred in two steps. First, two subject-matter experts reviewed the interview questions to check for clarity and validity. Second, the questions were

pilot tested by one person in the field of entrepreneurship education using their feedback on clarity and wording considered to revise and fine-tune the questions.

3.6.2.2 Planning and Conducting the Interviews

Upon securing approval for participant access and recruitment from seven higher education institutions, I used those institutions' websites to identify entrepreneurship education faculty members and academic leaders, such as deans and programme and department chairs. These individuals received email requests for participation, including assurance that their participation was voluntary and confidential at all stages of the study. Because interviewees were from different emirates and because it was not possible to travel to these locations during workdays to conduct the interviews, telephone interviews were often the most convenient and practical method of collecting data. Although participants received the option of interviews through an online video-conferencing programme, all preferred interviews by telephone. Although telephone interviews are easier to arrange and more cost-effective, they lack some of the benefits of face-to-face interviews. These offer the potential for providing additional non-verbal data or enabling the researcher to immediately validate some of the responses immediately through observation of body language or facial expressions (Denscombe, 2003). It can also be easier in a face-to-face interview for the researcher to build rapport with the interviewee and secure their trust and cooperation (Denscombe, 2003). However, comparison of interview transcripts in previous studies has revealed no significant differences in the data collected between face-to-face and telephone-based interviews, although the lack of face-to-face contact has also been said to restrict the development of rapport and a natural encounter (Sturges & Hanrahan, 2004; Irvine, Drew & Sainsbury, 2013). In addition to that, there is a greater risk of researcher bias if the interviewee provides the responses they think the researcher wants to hear, based on observation of their reactions to their answers. This can arguably be easier to minimise in a telephone interview by ensuring that verbal reactions to the

interviewees' answers remain neutral. Interviews took place between mid-October and mid-December 2019 and were audio-recorded with participants' approval. Each participant participated in one interview lasting between 35 to 90 minutes. Audio-recording of interviews was with participants' approval, with transcribed interviews securely stored in electronic folders.

Several of the initial interview participants provided referrals to other potential participants, providing the opportunity to interview key academic leaders and faculty members in the field of entrepreneurship education in the UAE. Snowball sampling, as discussed in the previous chapter, is a nonprobability (non-random) sampling method used to find more participants who have the required knowledge and experiences to answer the interview questions. This sampling method involves primary data sources nominating another potential primary data source to be used in the research (Noy 2008). Policymakers from the MoE and KHDA also took part in interviews. Prior to interviews, participants received electronic copies of the informed consent form via email, which they digitally signed or printed and then signed, scanned, and attached to a return email before their interviews. Entrepreneurship faculty members agreed to send their curricula vitae and their course syllabi along with their signed informed consent forms. The interviews began with a brief summary of the research, an overview of the types of questions to expect and a reminder to participants of audio recording and confidentiality.

Before data collection, I created a secured, password-protected folder on my personal computer with appropriately named folders and subfolders to ensure proper storage and organisation of the collected data. These measures were intended to protect participants' personal details (Kaiser, 2009). Interviews were transcribed using a professional transcription service to save time. A non-disclosure agreement was signed with the transcriber to ensure data

confidentiality. Also, no personal identifications were attached to the audio-recorded files, such as participants' names. As part of the agreement, after each interview was transcribed, the transcriber was asked to destroy all files related to that interview (i.e., audio recording and transcription). Audio-recordings were shared with the transcriber through a secured website that included an encrypted file-sharing service. I checked the word-by-word accuracy of each transcription by listening to the audio-recorded interviews while reading the transcriptions.

3.7 Data Analysis Plan

Merriam (2009) described data analysis as the "process of making sense out of the data" (p. 175). Data analysis in qualitative research includes organising the data for analysis and coding, reducing the data into themes and representing the data in visual figures or a discussion (Creswell & Poth 2018).

The study used the thematic analysis process described by Braun and Clarke (2006) as "identifying, analyzing, and reporting patterns (themes) within data" (p. 81). This approach to qualitative data analysis is well aligned with the interpretivist approach to the study, as it allows for inductive analysis and therefore ensures that the findings represent the experiences of the research participants rather than pre-defined categories. Thematic analysis requires careful, focused reading, rereading, and reviewing of the data (Bowen 2009) and allocating them in a process of "coding" to categories or "themes" relevant to the research questions. Braun and Clarke (2012) and Ryan and Bernard (2003) recommend combining deductive and inductive coding, in which the initial top-level codes or themes are based on the research questions or on what is already known from the literature, and lower-level codes and themes are identified inductively from the data itself. This approach was adopted in the present study.

Yin (2018) mentioned that one of the ways to analyse data is by relying on theoretical propositions. Yin (2018) indicated that researchers should use a clear theoretical foundation to guide the analysis. Because the study had an outlined theoretical framework, the deductive stage of analysis took place within the concepts of this theoretical framework. The remaining stages of analysis consisted of coding data inductively from the interview transcripts. The process involves extracting sections of text from the interview transcripts and documents and allocating them to "codes" which are labelled with the researcher's interpreted meaning of the data. This continues in an iterative way, with all the data being allocated to codes, which are in turn combined to form higher-level codes or themes and are continually revised until the range of codes and sub-codes is felt to most accurately reflect the data itself and the interpretation of it.

The six-phase process by Braun and Clarke (2006) guided the thematic analysis in the study and included (a) becoming familiar with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining themes, and (f) writing up results. NVivo software facilitated data storage and analysis. In qualitative research, the analysis starts as soon as there is some form of data to analyse: thus, data collection and analysis took place concurrently (Baxter & Jack 2008; Glesne 2011; Merriam 2009). Early data analysis outcomes could affect subsequent data-collection phases (Merriam 2009; Yin 2018). Because collection and analysis of several documents in this study occurred before the semi-structured interviews (e.g., Vision 2021 and UAE National Agenda), the contextual information in those documents provided a better understanding of the participants' experiences.

3.8 Trustworthiness

According to Merriam (2009), researchers must conduct studies rigorously for research to have an effect on theory or practice. In the qualitative-research world, different scholars have used

different terminologies to underpin the practices applied to ensure the soundness and robustness of qualitative studies. Qualitative researchers use the term “trustworthiness” to pinpoint and describe the procedures that they use to ensure the quality of their research. Trustworthiness, also referred to as rigour, is the “degree of confidence in data, interpretation, and methods used to ensure the quality of a study” (Pilot & Beck 2014 as cited in Connelly 2016, p. 435). Qualitative researchers use different terminologies than quantitative scholars; however, some qualitative researchers apply the same phrasing, such as validity (internal, external, and construct validity) and reliability, with different connotations (Creswell 2009; Yin 2018). Creswell (2009) referred to quality measures in qualitative research as validity and reliability but defined each term differently from the quantitative tradition. According to Creswell (2009), validity in qualitative research is the use of procedures to check for the accuracy of research findings, and reliability is the consistency of carrying out the research project.

Though scholars have debated what comprises trustworthiness (Connelly 2016), Guba and Lincoln provided one of the most used and accepted frameworks for establishing trustworthiness in qualitative research (Connelly 2016; Shenton 2004; Treharne & Riggs 2015). Guba and Lincoln provided a framework for ensuring the quality of qualitative research with four strategies: credibility, transferability, dependability, and confirmability. Each of these strategies is “parallel” or correspondent to the quantitative measures outlined in Table 3. However, this alignment does not indicate that terms have the same meanings or similar procedures for establishing rigour thereof (Morrow 2005). Creswell and Poth (2018) suggested that qualitative researchers engage in at least two of these strategies. The four strategies applied to ensure the quality and trustworthiness of the study were credibility, transferability, dependability, and confirmability.

Qualitative Strategies	Corresponding Quantitative Strategies
Credibility	Internal validity
Transferability	External validity (generalisability)
Dependability	Reliability
Confirmability	Objectivity

Table 3: Qualitative quality strategies and their corresponding quantitative strategies

3.8.1 Credibility

In qualitative research, credibility is the "question of how research findings match reality" (Merriam 2009, p. 231). Researchers can use several strategies to establish the credibility of qualitative research, including prolonged field experience, triangulation, member checking, peer-debriefing, reflexivity, peer examination, and thick description (Anney 2014; Connelly 2016; Morrow 2005). Triangulation, member checking and reflexivity were ways to maintain credibility in the study.

3.8.1.1 Triangulation

According to Yin (2018), data triangulation is especially important when a researcher seeks to understand participants' unique perspectives on a phenomenon. Researchers use triangulation to ensure that the generated data provides accurate descriptions of participants' perspectives (Yin, 2018). In qualitative studies, researchers can achieve triangulation by using multiple theories, data-collection methods, data sources, and investigators (Merriam 2009). Creswell (2009) asserted that researchers who satisfy the triangulation criteria in qualitative research contribute to the overall validity of their research. The measures taken to conduct triangulation in the current study were discussed in section 3.4.

3.8.1.2 Member Checking

Researchers use member checking to confirm whether participants think that the researchers accurately represented their words and meanings during the data collection and interpretation phases of the research (Shenton 2004). Member checking is a central practice in the process of

qualitative research validation (Anney 2014). To ensure an accurate representation of participants' experiences, member-checking occurred throughout the data collection and transcription phases. Member checking entailed asking follow-up questions and requests for clarification during the interviews. Follow-up emails were another tool to obtain additional clarification after interview transcription and were employed as needed.

3.8.1.3 Reflexivity

Unlike the objective nature of quantitative research, qualitative inquiry is subjective. Researchers must account for subjectivity in qualitative research, including participants' particular experiences and views and the potential for researcher bias. Due to the interpretivist nature of qualitative research, which indicates that truth is subjective to the participants' and researchers' realities, the researcher is a "co-constructor" of meaning (Morrow 2005). Reflexivity is a crucial strategy for ensuring the quality of qualitative research (Berger 2015). Qualitative researchers acknowledge the issue of possible bias and subjectivity and document subjectivity and bias through reflective writing. Reflexivity is "an awareness of the self in the situation of action and of the role of the self in constructing that situation" (Bloor & Wood 2006, p. 147) and is considered one of the main features of qualitative research (Creswell 2009; D'Cruz, Gillingham & Melendez 2007). The term *reflexivity* is sometimes used interchangeably in the literature with reflection, reflectivity, reflective account, and critical reflection (D'Cruz et al. 2007). Researchers can establish reflexivity by using reflective journals throughout the study. In this study, keeping a reflective journal was a means to document and understand personal experiences and views, the effect of those experiences, and views on the research and how they might have influenced certain assumptions or biases (Morrow 2005).

3.8.2 Transferability

Merriam (2009) asserted that transferability, also referred to as external validity, "is concerned with the extent to which the findings of one study can be applied to other situations" (p. 39). In other words, transferability indicates whether or not a study's results are generalisable. Unlike quantitative research, researchers may struggle with generalisable qualitative results due to nonprobability sampling procedures and smaller sample sizes. Qualitative researchers are concerned with generating concepts and themes and generalising results theoretically (Bloor & Wood 2006; Yin 2018). Researchers can use in-depth qualitative research to set the stage for further research. The study does not include generalised results for particular populations or contexts. However, researchers can enhance transferability in qualitative research by providing thick or rich descriptions and by applying purposive sampling (Anney 2014), both techniques used in this study. Researchers can achieve thick description by providing detailed and extensive data on the research methodology and context (Anney 2014). Thick descriptions in this study came from providing a comprehensive account of the research context in the analysis section. The purposive sampling method also incorporated a clear set of participant inclusion criteria.

3.8.3 Dependability

Dependability occurs when other researchers can replicate a study. Researchers establishing dependability must demonstrate that the study's methodology is repeatable and will produce similar results (Rowley 2002). Researchers can establish dependability using an audit trail, which is "a detailed chronology of research activities and processes; influences on the data collection and analysis; emerging themes, categories, or models; and analytic memos" (Morrow 2005, p. 252). The documented processes, decisions, and activities made during data

collection and analysis provide readers with clear and transparent details. The audit trail can also indicate the confirmability of the study (Anney 2014; Shenton 2004).

3.8.4 Confirmability

Establishing confirmability in qualitative research is the parallel strategy of objectivity in quantitative research. Although neither quantitative nor qualitative research is ever fully objective (Morrow 2005; Shenton 2004), researchers can apply strategies to ensure their results are representative of the phenomenon. In qualitative research, confirmability is the extent to which the results reflect the experiences and accounts of the participants and not the researcher's experiences, views, or biases. Confirmability of the study came through reflexivity, thick descriptions, and an audit trail.

3.9 Researcher's Role

The success stories of entrepreneurs around the world have always fascinated me. As I read such stories, I would always ask myself "What are the factors that shaped those entrepreneurs and made them who they are? Why are they so successful despite the challenges and discouragements they all say they faced along the way?" In 2015, I started attending as many workshops, training courses, and conferences as I could about entrepreneurship. I had the goal of starting my business at some point in the future, so I was trying to equip myself with as much knowledge as I could. I noticed that many young Emiratis also attended those workshops and training courses. Many of those young Emiratis had what I thought were brilliant business ideas, but their ideas unfortunately never made it to the outside world. I started wondering "Why?" At the same time, I was reading and watching news stories about successful young entrepreneurs in the UAE who were launching start-ups, raising venture capital, and growing and upscaling their new ventures. The reality was that the majority of those successful entrepreneurs were non-Emiratis, and the same question kept coming up: "Why are there not

many successful Emirati entrepreneurs?" After reading more about the topic and looking up statistics about the entrepreneurial landscape in the UAE, the question persisted.

As a professional who has worked in higher education for more than 15 years, I questioned whether or not higher education, particularly at the undergraduate level, had any part in this situation. I have experienced students in different roles and capacities during my jobs in higher education, from enrolment services and career services to alumni affairs. Recently, I have transitioned to a different role within higher education: teaching. I have always been keen on being part of students' lives, their learning, their development and their success. This passion, however, is something I tried my best to monitor and control during the research process to avoid any effects on the study. Though I am currently an instructor at one of the federal universities, the course that I teach is not about entrepreneurship.

My curiosity and interest in entrepreneurship resulted in me deciding to research it. However, as an instructor myself, I realised that I could somehow understand and relate to other faculty members' experiences, even those faculty members who taught different disciplines. Since I expected participants from various nationalities, I needed to examine how this study would reflect my understanding of their unique perspectives, as they came from different cultures and backgrounds. The participants in my study were from different institutions, including the one at which I teach. In this case, and using purposeful sampling, I included those with whom I did not have close, professional relationships to eliminate participant bias as much as possible. It is important to clarify that I did not teach any entrepreneurship courses at my institution nor was part of any curriculum or course development of such courses. Triangulation of data collection methods and providing thick descriptions in the analysis section of this study were two strategies to ensure the elimination of possible backyard research bias.

As a person with strong listening skills, listening to people talk about their stories was something that I valued and appreciated. I believe that digging deep into the experiences and views of people is a powerful strategy to elucidate concepts and meanings that otherwise might go undiscovered. Thus, my inclination to research this topic was through an interpretivist and constructivist lens and using qualitative methods, using interviews as one of the sub-methods. I understood that, in the process, my views might intersect with those of the participants. However, as a qualitative researcher, I knew that I had the responsibility to clarify any conflict by documenting my thoughts and reflections throughout the process. Though researcher bias is unavoidable in all types of research (Shenton 2004), I followed several strategies to transparently address this issue, as outlined in the trustworthiness section of this document.

3.10 Ethical Considerations

It was essential to address ethical issues at all stages of the research process. Approval to conduct the study came from the respective research sites according to the British University in Dubai's guidelines. Participant protection came from ensuring full disclosure and obtaining their written consent. Each participant learned of the purpose of the study, the purposes for using the data, and who would have access to the data. An informed consent letter and form contained information on participants' rights, acknowledgement of the protection of those rights, and agreement for participation. The informed consent also included assurance of protection of participants' identities and confidentiality and also stated the participants' rights to withdraw from the study without any penalties.

The use of pseudonyms was a means to protect participants' anonymity when transcribing the interviews. Audio-recorded interviews and transcribed data storage was in password-secured computer folders, which existed for one year before being destroyed. The researcher also completed and obtained certificates for the Social and Behavioural Research Course and the

Information Privacy Security Researchers Course online at the Collaborative Institutional Training Initiative.

3.11 Summary

This chapter presents the research design used for the study and the rationale for choosing a qualitative design. The chapter provides a detailed explanation of using the selected design and methods to address the research questions and unpack the experiences and meanings of participants. Also presented and justified are the research methods, as well as the procedures followed for participant selection and the criteria used to select the study's sites. The trustworthiness measures taken also receive detailed discussion, as do the steps and methods completed to enhance the rigour and quality of the research. Chapter 4 will present the qualitative data analysis and the findings from the interviews and documentary analysis.

Chapter 4: Analysis and Findings

The purpose of this study was to examine the views of higher education institutions' entrepreneurship faculty members, academic leaders, and educational policymakers on the implementation of entrepreneurship education in UAE higher education institutions. This chapter presents the data analysis and findings from the documents and semi-structured interviews. The chapter begins with an overview of the research objectives and the research methodology, providing a summary of participants' demographic characteristics along with the means of conducting interviews and collecting documents. The chapter then presents an analysis of the 32 documents and 16 interviews, including the emergent themes drawn from Braun and Clarke's approach (2006; 2013).

4.1 Overview of Research Aims and Methodology

The main objective of this study was to examine how entrepreneurship faculty members, academic leaders and educational policymakers understood and viewed the implementation of entrepreneurship education in UAE higher education institutions. Table 4 shows the research objectives and sources used to answer each objective.

Research Objective	Sources	Type of Analysis
To explore how entrepreneurship faculty members, higher education institution academic leaders, and policymakers in the UAE understand entrepreneurship	Interviews	Thematic analysis
To understand the policy of entrepreneurship education in higher education in the UAE	Literature review Documents: governmental and institutional documents such as Vision 2021 and higher education institution course catalogues Interviews	 Thematic analysis Thematic analysis
To understand how entrepreneurship education is implemented across undergraduate disciplines in the UAE	Literature review Documents: institutional documents such as higher education institution course catalogues and entrepreneurship course syllabi Interviews	 Thematic analysis

Research Objective	Sources	Type of Analysis
To understand the views of entrepreneurship faculty members, higher education institution academic leaders, and policymakers on the implementation of entrepreneurship education across undergraduate disciplines in the UAE	Interviews	Thematic analysis
To identify areas of possible development and recommendations for entrepreneurship education implementation in the UAE	Interviews	Thematic analysis

Table 4: Research objectives and data sources

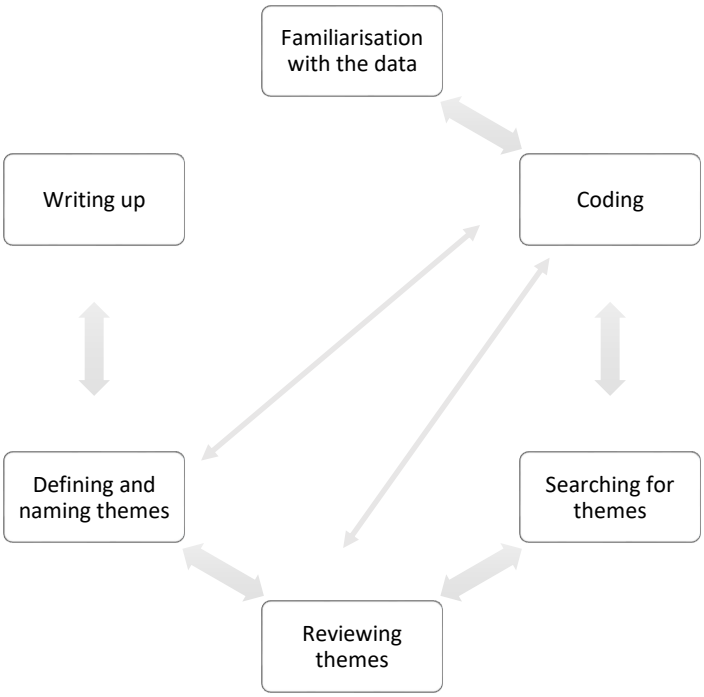

Figure 3: Thematic data analysis process used for the study, following Braun and Clarke's approach (2006; 2013)

4.2 Demographics of Interviewees

Sixteen individuals participated in interviews for this study, including two policymakers from two government entities, five academic leaders, and nine entrepreneurship faculty members from seven higher education institutions. Eleven participants were male and five were female. Thirty-one per cent of participants were Emiratis, 25% were US nationals, and 44% were of Jordanian, British, Pakistani, Canadian, and Irish nationalities.

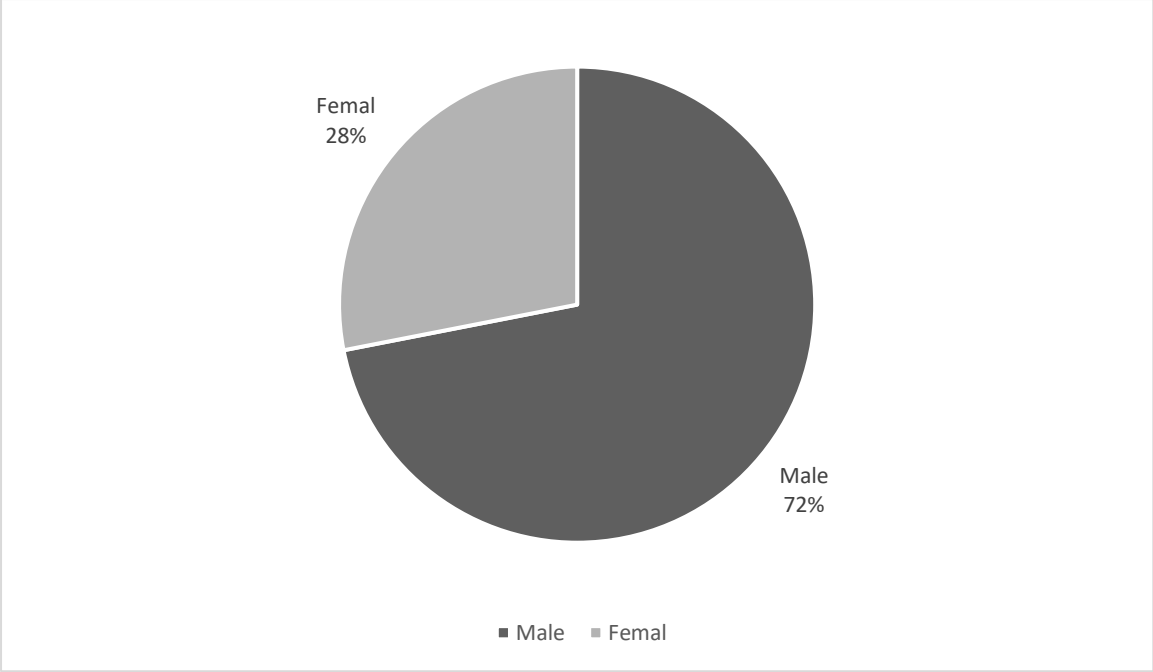

Figure 4: Study participants by gender

#	Pseudonym	Gender	Nationality	Designation	Type of Institutions/ Organisation
1	Participant 1 [AL]	Male	Canadian	Academic Leader	Private Higher Education Institution
2	Participant 2 [PM]	Male	Emirati	Policymaker	Government Entity
3	Participant 3 [PM]	Male	Irish	Policymaker	Government Entity
4	Participant 4 [AL]	Female	US National	Academic Leader	Government higher education institution
5	Participant 5 [AL]	Male	US National	Academic Leader	Government higher education institution
6	Participant 6 [AL]	Male	Emirati	Academic Leader	Government higher education institution
7	Participant 7 [AL]	Male	US National	Academic Leader	Government higher education institution
8	Participant 8 [F]	Female	Jordanian	Faculty	Government higher education institution
9	Participant 9 [F]	Male	US National	Faculty	Government higher education institution
10	Participant 10 [F]	Male	British	Faculty	Private higher education institution
11	Participant 11 [F]	Male	US National	Faculty	Private higher education institution
12	Participant 12 [F]	Female	Australian	Faculty	Government higher education institution
13	Participant 13 [F]	Male	Emirati	Faculty	Government higher education institution
14	Participant 14 [F]	Female	Pakistani	Faculty	Private higher education institution
15	Participant 15 [F]	Female	Emirati	Faculty	Government higher education institution
16	Participant 16 [F]	Male	Emirati	Faculty	Government higher education institution

Table 5: Summary of participant demographics

4.3 Accessing and Collecting Documents

Documents in this study served three purposes: (a) to provide contextual background to the study, (b) to provide information for the interview questions, and (c) to triangulate with the interview data. Several documents were available for public access through government and higher education institutions' websites. The documents accessed through the Internet included the national policy and strategy documents, a number of MoE documents, and the academic catalogues of higher education institutions.

Procuring the National Higher Education Strategy entailed submitting an email request to an official in the ministry. Upon their acceptance to participate in the study, faculty participants agreed to provide their entrepreneurship course syllabi and curricula vitae. A number of faculty members did not provide their curricula vitae and in such cases, I searched for and found their LinkedIn profiles. I saved PDF versions of these documents, also importing them into NVivo and printing them. The 32 documents collected for analysis are listed in appendix E.

4.4 Data Analysis

Data analysis started upon receipt of the first document and progressed with each interview transcript created. The six-phase thematic-analysis approach by Braun and Clarke (Braun & Clarke 2006; Clarke & Braun 2018) served as "an iterative and reflective process that develops over time and involves a constant moving back and forward between phases" (Nowell et al. 2017, p. 4). This iterative process took place between the months of August 2019 and March 2020.

4.4.1 Analysis of Documents And Interviews

Analysis of documents and interviews followed a qualitative thematic analysis approach based on Braun and Clarke's conceptual framework (Braun & Clarke 2006; Clarke & Braun 2017,

2018). Maguire and Delahunt (2017) defined thematic analysis as the "process of identifying patterns or themes within qualitative data" (p. 3352). This approach was appropriate for this research because "a rigorous thematic approach can produce an insightful analysis that answers particular research questions" (Braun & Clarke 2006, p. 97). Clarke and Braun (2018) based their approach on the qualitative research viewpoint, which "emphasises, for example, researcher subjectivity as a resource (rather than a problem to be managed), the importance of reflexivity and the situated and contextual nature of meaning" (p. 107). The authors also emphasised that thematic analysis should be theoretically flexible, which indicates that researchers searching for patterns and themes do not have to follow a specific language theory or a framework to explain individuals' experiences.

A hybrid thematic analysis approach thus enabled data analysis in both deductive and inductive manners (Fereday & Muir-Cochrane 2006). Since the study was based on a pre-defined theoretical framework, a deductive analysis was appropriate to find the meanings and patterns connected to the theories and inherent in the study's literature review. As discussed in Chapter 3 of this thesis, the theoretical framework comprised three components: the HCT, the ETM, and the ELT. The three components of the study's theoretical framework provided a lens with which data was analysed. Inductive analysis was another way to explore the presence of any themes resulting from the data analysis that were not necessarily based on the study's theoretical framework. Braun and Clarke (2006; Clarke & Braun 2013) provided a useful framework of six phases to complete thematic analysis, as followed in the study. Although the six phases appear as a linear process, the actual data collection and analysis for this study was an iterative, back-and-forth process between data collection and data analysis. Qualitative research methods are characterised by a circular process where ideas from each stage of data collection informs the next, and the data collection, analysis, and writing stages can be blurred

(Gifford 1996). In keeping with this, each stage of this study was informed and guided by knowledge gained through the research process.

Phase 1: Familiarisation with the Data

The audio-recorded interviews underwent verbatim transcription immediately after each interview. The only non-verbal information included in the transcriptions was laughter, as in some cases it provided certain information, such as sarcasm. Braun and Clarke (2013) stressed that researchers at this stage must familiarise themselves with the entire dataset and "must immerse themselves in, and become intimately familiar with, their data" (p. 121). I played each interview at least twice to ensure data familiarity and immersion—the first time while reading the transcript to ensure accuracy. Afterwards, I read the transcript of each interview several times, making notes. While reading the transcripts and documents line by line, "chunks" of text showed certain patterns and meanings (Braun & Clarke 2006) and were subsequently labelled as thematic codes.

Phase 2: Coding

The coding process began with my reading and rereading each document and interview transcript to look for views, meanings, and experiences. According to Clarke and Braun (2013), coding "involves generating pithy labels for important features of the data of relevance to the (broad) research question guiding the analysis" (p. 121). Coding occurred in two cycles (Elliott 2018; Saldaña 2016). The first cycle included the initial coding of the data and entailed in vivo, descriptive, conceptual, structural, value, and sub coding. For in vivo coding, researchers use the exact words of participants (Elliott 2018). Using in vivo coding was a means to capture words and phrases mentioned in documents and interviews, such as certain teaching methods (e.g., "problem-based learning") or specific concepts (e.g., "intrapreneurship").

The second coding strategy was descriptive or topical coding (Saldaña 2016). In this approach, topics or descriptions were applied to excerpts of text. Broad topics and descriptions implemented included "assessment," "course objective", and "course content". The descriptive or topical codes were mainly derived from the theoretical framework of the study or from the concepts in the literature review. In cases when the text could not be coded using either of the previous two approaches, a personal conceptual understanding of the text as codes was applied. An example of this was the code "student-centred approach", assigned to descriptions of a teaching method that did not correlate to a specific teaching method. Saldaña (2016) referred to this method of coding as conceptual coding. Sub-coding or secondary coding was one component of the first coding cycle, appropriate "after a primary code to detail or enrich the entry" (Saldaña 2016, p. 80). Examples of sub-coding were "assessment—no exams," "course objective—business plan" and "course content—theory."

Structural coding was a way to address specific research questions (Saldaña, 2016) and to group segments of data for later analysis according to the research question. Value coding helped to capture participants' viewpoints, values, and beliefs, which was of particular importance when analysing data for the second research question. These six coding techniques enabled immersion in the data set and consideration of the data from different angles and perspectives.

Rereading each document and transcript resulted in additional coding, recoding or, in some cases, uncoding of the data segments. With the collection of more documents, more interviews took place and patterns emerged from the data, with previous documents and interviews reread to revise and refine the existing codes. Using the "Reference" feature in NVivo enabled the

review of chunks of text attached to each code to ensure meaningful and consistent coding. This process also resulted in the recoding or uncoding of some excerpts as deemed appropriate.

The first cycle of coding initially generated 140 codes. Further collapsing of codes took place after another round of revision that identified several redundancies. The revision led to a reduction in the number of codes to 114. The first level included seven main codes and two levels of sub-codes. The first-level codes at this stage provided the main themes. Table 6 is a list of the seven main themes that resulted from the first coding cycle.

First level theme	**Number of second-level codes**	**Number of third-level codes**
Policy awareness	3	-
Ontological level of entrepreneurship education	3	17
Level of entrepreneurship education	10	54
Entrepreneurship education integration across disciplines	7	0
Challenges in teaching entrepreneurship education	6	-
Opportunities for development	3	-
Human capital development	4	-

Table 6: Initial themes generated from the first phase of data coding

During this stage, NVivo was very useful for completing the process of condensing and merging similar codes. Figure 4 below shows how the codes and sub-codes looked in NVivo.

Phase 3: Searching for Themes

Because the study used a deductive approach to thematic analysis, initial themes had already developed during the first two phases. Miscellaneous codes that did not fit any of the identified themes were separated in NVivo to ensure that they were not lost and for later grouping in

themes if deemed appropriate. The themes developed in the first cycle of coding did not provide a "compelling story" due to issues with ordering and organisation. For example, the theme "extracurricular activities" included sub-themes, such as partnerships with industry, alumni involvement, and career services involvement. Those themes were more descriptive and provided only summaries of ideas and concepts mentioned in the documents and interview transcripts. For example, upon closer examination, alumni involvement became part of the "role models and mentors" theme instead of "extracurricular activities." The second cycle of coding involved rereading all of the documents and transcripts with a more attention to meanings to find connections between the different pieces of data. Printed versions of the documents and interview transcripts enabled analysis together with NVivo. As a result, the second cycle of coding resulted in a more careful and in-depth examination of the dataset, as a preliminary understanding of the data and emerging themes had already developed.

Phase 4: Reviewing Themes

As I reviewed codes from the first cycle and became closer to and more immersed in the data, patterns emerged that were not necessarily organised according to the earlier versions of themes and sub-themes. A new set of ten main themes emerged, as shown in Table 7.

Phase 5: Defining and Naming Themes

During this phase, the codes and data excerpts under each theme underwent an examination to ensure accurate and representative names.

Name	Files	References
Challenges of teaching entrepreneurship education	1	2
Challenge - Admin. proceedres	6	10
Challenge - no suitable space (hub - makerspace)	3	10
Challenge - class size (number of students)	2	7
Challenge - not enough time	2	4
Challenge - course not innovative	1	1
Challenge - keeping up with changes	1	1
Educational Level	0	0
Course evaluatinos	6	11
Entrepreneurship as a discipline	6	9
EE as a cross disciplinary acadmic discipline	3	4
Integrate in other courses within college plans	2	2
EE does not belong to any major	1	4
Extracurricular activities	2	4
Innovation center-incubator in university	9	13
Partnership with the industry	7	11
Reward for students participating in extracurricular acti...	4	4
Alumni involvement	3	5
Career service involvement	1	1
Course assessments	0	0
Assessments - no exams	5	6
Assessment - needs revision	2	4
EE assessments - class participation	2	2

Figure 5: Part of the codes developed in phase one as they appeared in NVivo

Theme	**Research Objective**
Theme 1: The meaning of entrepreneurship	To explore how entrepreneurship faculty members, higher education institution academic leaders, and policymakers in the UAE understand entrepreneurship
Theme 2: Entrepreneurship education policies in the UAE Sub-theme 1: National entrepreneurship education policies Sub-theme 2: Institutional entrepreneurship education policies	To understand the policy of entrepreneurship education in higher education in the UAE
Theme 3: Implementation of entrepreneurship education across undergraduate disciplines in the UAE Sub-theme 3: Integration of entrepreneurship education into undergraduate programmes	To understand how entrepreneurship education is implemented across undergraduate disciplines in the UAE

Theme	Research Objective
Sub-theme 3: Who is teaching entrepreneurship education?	
Theme 4: Roles of faculty members and students in the teaching and learning of entrepreneurship	To understand the views of entrepreneurship faculty members, higher education institution academic leaders, and policymakers about the implementation of entrepreneurship education across undergraduate disciplines in the UAE
Theme 5: Is entrepreneurship education appropriate for all potential students?	
Theme 6: Experiential learning and entrepreneurship education	
Theme 7: Role models and mentors in entrepreneurship education	
Theme 8: The case of Emirati students	
Theme 9: Creating an entrepreneurial environment in the higher education institution	
Theme 10: Course evaluations and impact assessment	

Table 7: Final list of themes as they developed during the second coding phase and how each theme corresponds to the research objectives

Phase 6: Writing Up

The writing up of findings occurred concurrently with the first cycle of data analysis and coding. However, during the second cycle of coding and data analysis, the themes became more vivid, and the write up progressed more smoothly. The following sections present the themes developed during data analysis. The findings from both interviews and documents' analysis will be presented together under each theme to provide a holistic understanding of it. This approach was chosen to ensure that data triangulation is clearly presented and discussed for each theme. A summary of data triangulation will also be presented at the end of the chapter.

4.6 The Meaning of Entrepreneurship

This section of the data analysis shows the findings related to the research objective of understanding how participants in this study viewed and understood entrepreneurship. The findings indicated that how participants defined and conceptualised entrepreneurship varied. Whereas some respondents correlated entrepreneurship with new-venture creation, others asserted that entrepreneurship is more about the mindset and behaviours that individuals demonstrate in different settings, whether in their professional or personal lives. As Participant 6 [AL] put it, "*it's not the simplistic view of where you have to have a company and you have to generate a start-up*."

According to Boyles (2012), the entrepreneurial mindset is not only distinct but also learnable and able to be developed with by deliberate practice" (p. 44). Several participants referred to entrepreneurship as a mindset and to the entrepreneurship education courses they taught or supervised as an opportunity for a mindset shift for students. This perspective was not surprising, as the Stanford University course (discussed in more detail in section 4.9) includes an introduction about entrepreneurship being a mindset. In the Stanford course syllabus, the first session is dedicated to explaining to students the differences between (what is referred to in the syllabus as) a routine mindset and an innovative and entrepreneurial mindset. Participant 4 [AL] explained how the Stanford course changed her understanding of entrepreneurship:

> *"I will tell you [my view] is bias[ed], because after going through the Stanford training, I've sort of picked up that view. So, I'll sort of tell you what my thought was before and then after. So, before, I used to just think entrepreneurship is owning your own business, within any realm, but running your own company, essentially—but I think my definition has changed. I think a bit more [of entrepreneurship] as a mindset: how can we be*

more creative, how can we find ways to improve services and products, and whether that's making it faster, better, more convenient."

Defining entrepreneurship as a mindset rather than a business-creation act has certain implications: it means that developing entrepreneurial skills and values as part of the UAE's human capital should not be only measured by the number of businesses created and profits made. The definition should also consider individuals who are able to recognise opportunities and execute innovative ideas that create value in people's lives without necessarily seeking financial reward. Defining entrepreneurship as a mindset allows the inclusion of, for example, employees in various sectors such as the government, where being entrepreneurial could mean making improvements to services provided to people. It could also include individuals who are passionate about making positive changes to their societies through creative ideas regardless of financial returns. This was explained by Participant 11 [F]:

"I tried to really make a point that a lot of people just sort of think or just assume that being an entrepreneur means you have to start a for-profit business. But I said, honestly, you can start something that's like [a] non-profit or [a] charity."

On the other hand, a number of participants argued that entrepreneurship is first and foremost about creating and commercialising a new company. For example, Participant 1 [AL] and Participant 13 [F] had the following to say:

"To me, it is the ability to understand how you want a student—or anybody—to go about creating a company, an enterprise based upon a certain idea, and then incubate that into a profit." (Participant 1 [AL])

"Entrepreneurship is basically taking an idea that you have, developing it further, finding a market for that idea, and then trying to change the world with that idea." (Participant 13 [F])

Although most of the faculty-member participants in this study participated in the Stanford training programme and were using the same course syllabus, it was interesting to notice that they still had somewhat different views and definitions of entrepreneurship. The different views could be the result of many factors such as cultural, social, educational, and philosophical backgrounds; previous work; and in some cases, entrepreneurial experiences. Table 11 below presents participants' definitions and conceptualisations of entrepreneurship. Academic leaders often referred to entrepreneurship as a mindset, whereas faculty members were more likely to relate entrepreneurship to creating businesses. One policymaker and two faculty members connected entrepreneurship with innovation or doing things differently.

Entrepreneurship Meaning	**Policymaker**	**Academic Leader**	**Entrepreneurship Faculty**	**Total**
Mindset/behaviour	1	3	1	5
Creating business	0	2	4	6
Innovation/doing things differently	1	0	2	3
Leadership	0	0	1	1
Resourcefulness	0	0	1	1
			Total	**16**

Table 8: Meaning of entrepreneurship from participants' views

Entrepreneurship in governmental policy and strategy documents was mainly seen as a pillar in building a competitive knowledge economy and a key driver of economic growth and prosperity. Documents with specific definitions of what entrepreneurship means or how those responsible for implementing these policies should interpret entrepreneurship were seemingly non-existent. Though the meaning of entrepreneurship might seem obvious to some, scholars

defined it in different ways. And as established in Chapter 2, the definition of entrepreneurship affects the way it is taught.

The UAE government considers entrepreneurship to be a key driver in advancing the state of its knowledge economy. This is evident in the policy and strategy documents included in this study. For example, Vision 2021 sees entrepreneurship as an enabler of Emiratis to participate in advancing the economy through SMEs in the private sector. Similarly, the UAE 2071 document considers entrepreneurship among the key factors in the country's economic growth and prosperity. In the National Innovation Strategy document, entrepreneurship is seen as a natural result of enabling a culture of innovation, which contributes to building the country's socioeconomic capabilities. The strategy therefore stresses the promotion of a national culture of innovation and entrepreneurship. The role of entrepreneurship in building a knowledge-based economy and in advancing the economy is established in governmental documents, however, there is still a need to clearly define entrepreneurship in the context of the country and its aspirations to advance its economy.

This section provides an overview of how entrepreneurship faculty members, academic leaders, and educational policymakers understood entrepreneurship. The section also provides an overview of how entrepreneurship is recognised and understood in the governmental documents included in this study.

4.7 Entrepreneurship Education Policy in the UAE

One of the objectives of this study was to understand entrepreneurship education policy in the UAE. The two themes discussed in this section correspond to this objective.

4.7.1 National Entrepreneurship Education Policies

Analysis of national policy and strategy documents has revealed that the place of entrepreneurship in the UAE's plans for economic growth and development is highly important. This could be clearly seen in the National Agenda 2021, which sets the goal for the UAE to become among the pioneering countries in entrepreneurship. The agenda stresses the key role that UAE nationals are expected to play as a driving force in the development of the economy and in the transition to a knowledge-based economy. The agenda further stipulates that it will strive to infuse an entrepreneurial culture in schools and higher education "to foster generations endowed with leadership, creativity, responsibility and ambition" (National Agenda 2010b, para. 3). In the UAE's National Innovation Strategy, human capital is considered a key constituent of innovation, and innovation is regarded as essential to promoting entrepreneurship. The strategy also aims to promote a national culture of innovation and entrepreneurship. The NQA CoreLife Skills framework also describes the "entrepreneurial spirit" as one of the elements of the Organising Self, which is one of the seven key competencies included in the framework.

The policy documents analysed for this study also showed the importance of entrepreneurship for advancing the country's economy. UAE leaders see entrepreneurship as central for economic success, and they have embedded entrepreneurship as an area of focus and development in all recent nationwide strategic plans. There is a focus on developing national generations to help build a knowledge economy and active participation in entrepreneurial activity (National Higher Education Strategy, 2017). The transformation to a knowledge-based economy "can only be accomplished within an entrepreneurial environment that harnesses the talent and creativity of Emiratis" (Vision 2021 2010 p. 18):

> The National Agenda also aims for the UAE to be among the best in the world in entrepreneurship, as this plays a key role in unlocking the potential of nationals and enables them to be a driving force of the UAE's economic development through [SMEs] in the private sector. Furthermore, the agenda strives to instil an entrepreneurial culture in schools and universities to foster generations endowed with leadership, creativity, responsibility, and ambition. This will allow the UAE to be among the best in the world in ease of doing business, innovation, entrepreneurship, and R&D indicators. (Vision 2021 2010 p. 18)

The National Innovation Strategy, for example, stipulates that a high-quality education system is one of the key enablers for developing a foundation for innovation in the country. The Sustainable Development Goals document lists education as a national priority. It further asserts the important role of higher education in particular as a key player in achieving the sustainable development goals through its knowledge base, resources, and partnerships. The UAE 2071 document promises to build the best educational system in the world, in which innovation and entrepreneurship will be instilled from early ages. The Vision 2021 document recommends a complete transformation of the current educational system and teaching methods. The role that education in general and higher education in particular is expected to play in the development of the nation's knowledge-based economy is also highlighted in all of the previous documents. For example, the UAE 2071 document mentions that universities will become incubators to support and internationalise new ventures in partnership with local and international companies. The National Innovation Strategy regards a high-quality education system a pillar in enhancing the UAE's capacity to innovate and create. The transformation to a knowledge economy according to the Vision 2021 document can only be achieved through building an entrepreneurial environment that encourages talent and creativity among Emiratis, wherein education plays a key role.

Some of these policies and strategies were mentioned by this study's participants. For example, Participant 7 [AL] had the following to say:

> *"National policies? Not exactly. I am familiar with how innovation is important for the country as a whole and how the innovation index is measured. I have read the documents that the government has produced for becoming an innovative country, as well as the science of technology policies, but I think of them more as blueprints, as documents that focus on the direction than, let's say, any particular framework."*

Three other participants also referred to national policies for promoting entrepreneurship, such as Vision 2021. Participants 12 [F] for example mentioned the 2021 vision:

> "*I'm actually aware of one, but I don't know if it's the right one. I know there was the … Was it the 2020 or something?"*

Participant 14 [F] me mentioned laws from the Ministry of Economy as well as labour related laws:

> *"Well, I'm definitely aware of some of the laws [that] are coming for entrepreneurship, like visa law … we have bankruptcy law and all those other laws—labour law … I'm cognizant about that. And I'm also aware that it's definitely one of the key priorities in the UAE policy currently in education. Sheikh Mohammed is extremely interested in making it as a compulsory course in universities." (Participant 14 [F])*

Participant 13 [F] also referred to the same by stating:

> *"The government is really supporting a lot of people who are entrepreneurs. They are helping people, so, for example, for foreigners, to the expats, they're giving them now permanent residence, to people who have great ideas—they want to start the business*

year and make changes in the UAE: they're giving permanent residence to these people. That's a great change." (Participant 13 [F])

Most participants struggled to articulate a national policy for entrepreneurship education in the UAE, as these policies did not exist. Despite a search for policy documents on entrepreneurship education either at the governmental level or at the level of local educational institutions, such as KHDA, there was no documentation of such policies. At the time of this study, the implementation of entrepreneurship education in higher education institutions accredited by the Commission for Academic Accreditation (CAA) was guided by several requirements presented in the CAA's Standards for Institutional Licensure and Program Accreditation. Table 10 shows the specifications stipulated in the CAA guidelines on the integration of entrepreneurship education into undergraduate programmes. According to Participant 2 [PM]:

"So, we have guidance ... and the guidance will cover different themes [of] entrepreneurship. The way we ask universities to implement [it] is [that] we give them some sort of flexibility."

Integrating entrepreneurship education into undergraduate programmes was a requirement, yet for higher education institutions educators allowed the implementation of entrepreneurship courses according to their own judgement. The second policymaker in this study affirmed the flexibility of teaching entrepreneurship courses; in this case, however, higher education institutions operating under their jurisdiction were not required to integrate entrepreneurship education into their programmes but were encouraged to do so. Participant 3 [PM] had the following to say:

"But where we stop short is [that] we do not say to universities 'you must run a program [on] entrepreneurship, or you must have so many of your students involved in entrepreneurship.'"

Participant 3 [PM] thought that infusing entrepreneurship into the different undergraduate programmes was important because his view was that individuals can be entrepreneurial in any sector and thus that students should be exposed to this type of education regardless of their major.

Stipulation	**Specific guidelines**
Stipulation 3: Educational Programmes 3.3 Programme Structure and Completion Requirements	3.3.5 Programme and course learning outcomes should contain elements that promote competencies in innovation, entrepreneurship and imbue the principles of sustainability. These outcomes may be incorporated into a single course or else embedded into different courses within a programme's structure.
3.6 General Education	3.6.2 A course in innovation, entrepreneurship and sustainability should be incorporated into the General Education programme unless it is addressed in other courses across the institution's programmes.
3.9 Teaching Methods: The institution	3.9.6 integrates key employability skills such as innovation, entrepreneurship, teamwork, and leadership into the content of courses, as appropriate.

Table 9: CAA guidelines for integrating entrepreneurship education in undergraduate programmes

In addition to the Stanford University partnership led by members from the MoE (discussed in detail in section 4.9), the ministry provides guidelines for implementing entrepreneurship education, mainly for accreditation and licensure purposes, through its quality assurance body, the CAA. Instead of policies, the majority of participants stated that they were aware of different initiatives from the federal and local (at the emirate level) government with policies on entrepreneurship or entrepreneurship education. Two commonly referenced initiatives were

the prime minister's directive to integrate entrepreneurship education into all undergraduate programmes and the Stanford University partnership. Participants said they were not aware of any national policies: "*Not specifically. I'm more aware of initiatives, but I do not know which area that they fall under*" (Participant 4 [AL]).

Other participants also made similar statements, for example Participant 13 [F] mentioned their awareness of the mandate to teach the entrepreneurship course:

> *"I know that the [MoE] is making this [course] a requirement … taught all across the universities here in the UAE. No matter what major you are, you have to take this course, which is great, in a way, because it's really changing the way people think, and so that's what I'm aware of. But other than that, I'm not aware of any other policies. I'm not much involved in the education side of it, but regarding entrepreneurship policies, maybe I know a few others, but they're not in the teaching aspect."*

Participant 11 [F] also referred to the same mandate by stating:

> *"Broadly speaking, I know that this course is a derivative of … a mandate from the prime minister's office. Beyond my involvement with the initial curriculum development here at the UAE and in my obviously deeper dive into the design-thinking-based curriculum from Stanford … I don't know too much of the specifics, other than I knew that it was required for government schools, and I think as of now, it's required for all schools. A lot of the specifics are a little bit fuzzy to me."*

Similarity Participant 1 [AL] explained that more universities are including entrepreneurship course in their curriculum:

"I think policy-wise, I'm not sure, but I think the subject matter in general is gaining tremendous visibility and excitement. Many universities are adopting entrepreneurship in the curriculum, ... through just the simple courses added into the management on business faculties but also through some sort of incubation that is also gaining popularity." (Participant 1 [AL])

It was apparent that participants were aware of the course being mandated by the government and of initiatives carried out by their institutions to support entrepreneurship education. However, the absence of national entrepreneurship education policies was evident from their answers. Interestingly, it seemed unlikely from the hesitation I noticed when they answered the question about national policies on entrepreneurship education that they had thought about this matter prior to being asked this question. It appeared to me that the topic of national policies had not previously been a topic of widespread discussion.

4.7.2 Institutional Entrepreneurship Education Policies

Analysis of the higher education institutions included in this study showed that entrepreneurship was rarely mentioned. Other than mentions of entrepreneurship-specific courses, most of the mentions of entrepreneurship in the academic course catalogues, factbooks, and annual reports included in the analysis mainly highlighted activities and initiatives related to promoting entrepreneurship, such as entrepreneurship and innovation centres. A few institutions mentioned entrepreneurship as being part of their strategic plans. For instance, one of the institutions stated that they had made innovation and entrepreneurship part of their strategic priorities and that they had already taken steps to embed a culture of innovation and entrepreneurship into their activities.

In the interviews, most participants mentioned that they were either unaware of institutional policies on entrepreneurship education within their higher education institutions or stated that no such policies existed in their institutions. Examples of participants' statements were the following:

> *"Not ... in a formal way, but when we design the curriculum, we have that in our mind, but we don't have something formally written." (Participant 5 [AL])*

> *"No. We're just following it [entrepreneurship education] based on [the] syllabus ... which I believe is covering all [of] the policies and procedures, which I'm not aware of." (Participant 15 [F])*

> *"We have something related to innovation, but I haven't actually seen the policies themselves." (Participant 16 [F])*

Some participants answered the question of their degree of awareness of institutional policies on entrepreneurship education by referring to the course that was designed in partnership with Stanford University (discussed in more details in section 4.9), which was a requirement for all students. One participant responded that "*all incoming students have to take the course, which I think aligns with entrepreneurship education.*" (Participant 4 [AL])

Answering the same question, the majority of participants also mentioned different initiatives and activities to promote entrepreneurial activities at their respective higher education institutions, examples are as follows:

> *"[Policies] specific to entrepreneurship education would be the KPIs [key performance indicators] that we have within our organization." (Participant 7 [AL])*

"Because this is a government mandate ... [we] have sort of set some goals for entrepreneurship education. So, some of those goals are promoting entrepreneurship awareness in students, and so we do that through the course." (Participant 9 [F])

"Yes. We have a student hub here, an Innovation Centre, where we help students who have ideas." (Participant 13 [F])

In summary, the data from the interviews with entrepreneurship faculty members, academic leaders, and education policymakers, as well as data from documents, showed that policies do not exist for entrepreneurship education at either the national or institutional levels. The strong intent of the UAE government to promote entrepreneurial activity, especially among Emiratis, makes it difficult to understand the absence of policies at both the national and institutional levels.

4.8 Implementation of Entrepreneurship Education Across Undergraduate Disciplines in the UAE

This section of data analysis presents the research objective of understanding the means of entrepreneurship education implementation across undergraduate disciplines in the UAE. Although government leaders launched Vision 2021 in 2010, clear actions to include entrepreneurship into undergraduate programmes did not occur until the prime minister mandated the integration of entrepreneurship education into all university programmes in 2015.

4.8.1 Integration of Entrepreneurship Education into Undergraduate Programmes

First, participants described the implementation of entrepreneurship education. Participants stated that they adopted a course on innovation and entrepreneurship after a mandate from the UAE's prime minister, followed by an initiative launched in 2016 by the prime minister's

office and the MoE in partnership with Stanford University in the US (i.e., the Stanford University partnership). Stanford University was chosen for the partnership for its central role in establishing Silicon Valley in California, US. The Stanford University innovation and entrepreneurship curriculum has three components: (a) innovation, (b) entrepreneurship, and (c) growth and leadership. According to the course syllabus, the three components are to be delivered through 27 sessions. The syllabus also provided a summary for each session, supplemental videos and readings for each session, and descriptions of the course assignments. According to Stanford University, the course was developed for the UAE to equip the next generation with an innovative and entrepreneurial mindset. Commenting on the Stanford partnership and the course, Participant 6 [AL] explained the situation as follows:

> *"First, the programme lasted three years with Stanford … the core of the initiative is basically that every accredited undergraduate programme in the UAE must teach the INE [innovation and entrepreneurship] course, the innovation entrepreneurship course developed by Stanford. So, there are flexible adoption guidelines. There's a syllabus. There is kind of a full curriculum. By curriculum, I mean full content of the course, even presentation slides for every lecture, down to the details of even script for how to run every class. It is very detailed—very high quality—and it is designed so that basically any instructor can just take that course and run with it with minimum time and with minimum effort."*

This comment indicates that since the course was fully developed by Stanford University, higher education institutions offering it and faculty teaching it did not have much autonomy in preparing and presenting the course material. In addition to developing the course, another goal of the initiative was to provide professional development for selected UAE faculty members to teach the course. For example, Participant 6 [AL] had the following to say:

"[In] every year, we trained approximately 30 faculty. Then for the last year, out of the 60 who were trained in the two years before, we selected 15 who received advanced training. These were called the program ambassadors … The program ambassadors … the[ir] main tasks or roles are supporting the accreditation to ensure that the course is taught in line with the requirements. [The] second thing is studying the impact of the course nationally, which is a big study: a big project. The third one is basically adapting the curriculum to the UAE requirements so that the curriculum is designed by Stanford, but we want to tweak it continuously to make it basically our own."

Making the course "our own", as the previous participant commented, is an interesting perspective. It indicates that although the course was developed for the UAE by Stanford University, there still seems to be a desire to make changes to the course to make it more suitable for students in the UAE.

Participant 11 [F] also stressed that one of the goals was to train faculty members who would later train other cohorts of faculty members, and so on, because the partnership was only to last for three years. Participant 11 [F] mentioned the following:

"The idea [was] that those people who are in those three cohorts essentially become like a train-the-trainer kind of a scenario … I don't think the intent [was] to have other cohorts go, but the intent was to have enough people who have gone through it so that there's a core group of trained faculty who at a variety of universities [who] then … spread the word."

Since all higher education institutions in this study were part of the Stanford University partnership, all but three of the faculty participants received direct training in the US as a result

of this initiative. According to participants, the training included attending workshops at the Stanford University Design Department in the US, as well as gaining access to online training resources. Participant 11 [F] stated the following:

> *"We had the opportunity to meet with most of the … science and engineering faculty who created the [INE] curriculum, and they gave us workshops over the four-day period."*

Participant 14 [F] and Participant 9 [F] served as programme ambassadors. Participant 14 [F] explained the situation as follows:

> *"We went to Stanford. We had a training week, and then we had online courses and everything. And then after that, when the first batch happened, I was not in the first batch; I was in the second batch. And then, from the two batches, we collected a total of 14 people, and they trained them as program ambassadors, so I was one of them. I am one of the program ambassadors of entrepreneurship in the UAE."*

According to the participants, the Stanford University partnership lasted for three years (2016 to 2018). Still, the programme ambassadors continued to hold regular meetings to reflect on the different aspects of the course. There were also online collaborative spaces, some created by faculty members at Stanford University and others by the trained faculty members, during which faculty members discussed and provided updates on the programme. Fayolle (2013) maintained that entrepreneurship educators "must strive to create a professional community sharing the same values and objectives in order to fundamentally change the nature, the practice, and the effects of EE by targeting, connecting, and reflecting on the field" (p. 700). Participant 11 [F] and Participant 12 [F] had the following to say:

"We had five days that we went [for meetings], and now we're going to do at least two or three more... And so now I think we're going to sit together and talk about assessment, which is a very interesting topic to talk about." (Participant 11 [F])

"It's a really nice network: it's a nice community of practice ... we share ideas with each other. Sometimes you get an idea from somebody else and you repurpose it." (Participant 12 [F])

The community of practice mentioned by Participant 12 [F] refers to online and face-to-face to meetings and collaboration spaces where faculty members discuss everything related to teaching the course.

Participants did not agree on whether or not the Stanford University course was appropriate for students. Some participants indicated that the course was suitable for their students and others thought that it was not. An example from the latter group was Participant 12 [F], who stated that the course was "*really designed for very advanced students*," and Participant 11 [F], who said that it was "*almost like a meal with too much food!*". The Stanford course syllabus, as shown in the next page, consists of various topics clustered around design thinking (innovation), entrepreneurship, and growth and leadership. For students in their second or third undergraduate year, this appears to be a lot of material to cover in one semester.

Participant 12 [F] and Participant 13 [F] indicated that the main challenge in teaching the course was the limited amount of time:

"We're talking about changing their mindset, but we don't have time to do a lot of that stuff, where we can play around and say, 'Okay, let's look at things. How could we have done it differently?' We don't have time." (Participant 12 [F])

"The struggle is in terms of time management, like the way Stanford does this or MIT does this is [that] they have more than one instructor per section. So, when you have 35 students or 36 students in one section, it's hard to kind of engage with everybody without wasting a lot of time." (Participant 13 [F])

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Figure 6: Session topics as per the Stanford course (Adapted from the Stanford Course Syllabus 2016)

It seems that there were high expectations from the course set forth by the government and that achieving these expectations through the implementation of a single course is challenging. Participant 12 [F] suggested that higher education institutions divide the course into two courses and separate the innovation component from the entrepreneurship and the leadership and growth components. She had the following to say: *"I think if you could separate the two … my question is why do you have to have both together?"* Linking both innovation and entrepreneurship is a goal of the national vision and strategic plans, such as in the National Innovation Strategy (2015), in which innovation is an important driver of entrepreneurship. Therefore, linking innovation to entrepreneurship might have been a reason for developing the course such that it included both concepts.

Although educators at all higher education institutions adapted the same Stanford University course, participants indicated that there was some flexibility in course delivery at each school. According to Participant 12 [F] and Participant 9 [F]:

> *"The good thing about the course is [that] it certainly does allow for some individuality." (Participant 12 [F])*

> *"The first cohort faculty … gave the information on how to develop the course, so we have been involved in the development of the course, as well … but even after we helped with designing the course, we still had to … personalise it for the university that we work in." (Participant 9 [F])*

The level of flexibility was not clear, however, as some participants said that there were limits set by their institution on how many changes they were permitted to make to the course. One

participant, for example, was surprised to learn that assessments used in the course varied considerably among the different universities.

Only one faculty participant taught a course other than the Stanford University innovation course, though she also received training at Stanford University. Her course was part of the study plan of a specific (non-business) major and tailored for the students of that specific major. All of the students in that major were required to complete the course during the final year of study. However, the course ran for eight weeks (half a semester), as the students were required to complete their internship during the remaining eight weeks of the same semester. The university also provided the same course as part of an optional minor plan for students of other majors. The business college in that higher education institution also offered a minor in innovation that and entrepreneurship was open to students from other colleges. Another higher education institution in this study had a required business course for all students that included an entrepreneurship component. Other higher education institutions provided entrepreneurship courses as part of the business major. Several higher education institutions also offered a specialisation in innovation management and entrepreneurship in their business colleges.

The Stanford course syllabus mentions that the course will help students to explain the value of innovation and entrepreneurship for their economy and society. The socioeconomic value of entrepreneurship is clearly highlighted. The course also states that students will articulate the value of innovation and entrepreneurship for their own careers. This highlights the importance of viewing entrepreneurship not only as a socio-economic power at the level of the country but also as an asset at the individual level. The required textbook for the course is the international student edition from the book *Technology Ventures: From Idea to Enterprise*. The book is written by three professors of management from three different universities in the

US, including Stanford. It is interesting that the book chosen for this course discusses technology ventures as compared to ventures in general. The book discusses the cycle of creating technology ventures, from opportunity recognition to financial planning and capital raising. The wide variety of topics in the book and the level of depth these topics are discussed at do not seem suitable for students in their second or third undergraduate year in the UAE. For example, Chapter 18 is about sources of capital with details about topics such as debt financing, grants, public offering, and valuation. These are advanced topics that participants stated are not necessarily suitable for the level of their students. In addition to the textbook, a variety of Harvard Business Review online materials are also required as reading materials. Comparing the content of the course against the two types of objectives in the ETM used as part of the theoretical framework for this study, the course does include elements that cover both objectives: the learning objective and the socio-economic objective. For example, there are topics that discuss being creative and creating a personal business plan (learning objective), as well as topics such as opportunity-seeking and analysis and legal matters in start-ups (socioeconomic objective).

Table 8 below presents a summary of the course information from the four syllabi collected from the faculty participants. The table includes the contextual background for each course, as well as the course description, learning outcomes, and assessments. The course description and learning outcomes indicated that the course content was based mainly on teaching *for* entrepreneurship, in which the focus is student engagement with projects and tasks designed to provide important skills (Pittaway & Edwards, 2012).

Context	Course Description	Learning Outcomes	Assessment
Required general-education course which students usually complete in their third or fourth semester in the general education programme	This course is a skills-rich approach to learning innovation that can be applied to any high-growth enterprise or organisation within the United Arab Emirates (UAE). Students will develop an understanding of the nature of entrepreneurship and its connection to the culture and economy of the UAE and how innovation drives entrepreneurship. The course is composed of three modules: Module 1: Design Thinking; Module 2: Entrepreneurship; and Module 3: Growth and Leadership. The course encourages creativity, civic responsibility, teamwork, ethical decision-making, and critical thinking skills, leading to students becoming prepared to take their places as members of an entrepreneurial oriented workforce. The course culminates in generating entrepreneurial concepts related to students' own professional development.	1. Differentiate between design thinking, innovation, and entrepreneurship, and possess a shared vocabulary for the process elements of each. 2. Examine the importance of entrepreneurial ecosystems and innovation clusters to healthy society and economies. 3. Demonstrate skills for the formation of effective teams and practices for team-culture development that respect diversity. 4. Learn how to differentiate between an idea and a viable opportunity. 5. Understand basic practices to support scaling, organisational innovation, and change management to benefit organisations and society. 6. Recognise how to connect design thinking, innovation, and entrepreneurship to their own career development and paths.	20% Course engagement (attendance and participation) 20% Team based project 1 (design thinking project) 20% Team based project 2 (opportunity analysis project) 40% Final project 3 (personal business plan)
Required course which students usually complete during their sixth semester	The goal of the course is to equip the next generation of leaders with an innovative and entrepreneurial mindset and its related core skills. The course is composed of three modules: The design thinking process; Entrepreneurship; and Growth and Leadership. The course introduces students to the principles and practice of innovation in engineering design, as well as the techniques that	1. Illustrate and interpret key concepts of innovation. 2. Apply the processes of innovation. 3. Analyse and present a rationale on how ideas are different from viable opportunities. 4. Apply skills, or improvements on skills, that are needed to form effective (diverse) teams.	15% Participation, contribution, and written reflections 30% Individual culmination project (preparation of a personal business plan 15%, discussion and presentation of a personal business plan 15%) 30% Two team-based projects (First team-based project: design

Context	Course Description	Learning Outcomes	Assessment
	managers and entrepreneurs use to manage innovation effectively. The course uses a hands-on approach to engage students in the full process of innovation using the design thinking approach and includes the development of a prototype or simulation of the proposed solution and a business model canvas.	5. Communicate the value of innovation for their society and economy. 6. Apply innovation and entrepreneurial thinking and tools and set goals and strategies for their own careers. 7. Apply the appropriate skills for each stage of the design-thinking process, analysing and synthesising results to solve real-world engineering problems. 8. Develop an innovative idea and related prototype or simulation and present the innovative idea by delivering a pitch as entrepreneurs.	thinking in practice project 15% - Second team-based project: design thinking process report 15%) 25% The Innovative Engineering Design Project (engineering design prototype (model or concept) 5% - business model canvas 10% - entrepreneurial pitch to a panel of potential investors 10%)
Required general education course which students usually complete during their third or fourth year	Innovation is the engine of opportunity and, acting as a catalyst, this course is intended to ignite an interest in innovation and inspire entrepreneurial action. At the core of innovation is a commitment to experiential learning that will encourage students to engage in critical thinking, creative problem solving while also equipping them with the soft skills needed in their pursuit of academic and professional endeavours. Students will discuss the relevance and role of innovation in work and life situations; determine opportunities for creative disruption and design a strategy for its implementation; develop a practical understanding of innovation through thoughtful debate and exercises; and demonstrate critical thinking and individual insight with a	1. Identify and apply the fundamental theories of innovation. 2. Examine the different debates on innovation in multiple sectors regionally and internationally 3. Develop the soft skills needed to pursue innovative entrepreneurial endeavours through immersion in an experiential learning environment. 4. Apply innovative and entrepreneurial ideas to make positive change in the community	60% Project and presentation 15% Out-class assignment 25% In-class assignment

Context	Course Description	Learning Outcomes	Assessment
	personal mastery portfolio.		
Required major course – designed to specifically address entrepreneurship in the context of the major – students take the course in their final semester (semester 8)	This course examines the concepts, practices, and challenges of IT entrepreneurship. It equips students with the knowledge and skills to develop and evaluate their creative and innovative ideas based on the assumption that students will be working in the private sector or developing new units within a government institution. The purpose of the course is, therefore, to apply entrepreneurship concepts to cultivate the mindset and skills to start an IT enterprise and/or develop new units within IT organisations. Topics cover preparation of a full business plan taking into account legal, financial, marketing, social, and ethical aspects relevant to initiating IT ventures.	1. Discuss the success and failure factors of entrepreneurs. 2. Articulate the skills and knowledge required by commercial and social entrepreneurs. 3. Examine and evaluate an entrepreneurial idea. 4. Produce a business plan for a proposed entrepreneurial idea.	15% Assignment paper 15% Test 25% Test 5% Case study analysis 30% Team project 10% E-team challenge

Table 10: Analysis of four entrepreneurship course syllabi

Though the Stanford University course syllabus has indicated student assessments, it is evident from Table 8 that how higher education institutions adapted these assessments varied. The Stanford course syllabus specifically listed three assessments: class participation (20%), two team-based projects (40%), and a personal business plan (40%).

Participant 12 [F] stated the following: *"It's a pity that we haven't had this assessment meeting because it seems that some people do some things, some people do other things."* She also talked about assessments being not suitable for the course by saying "*we are not innovative*." She further argued the following, in relation to the course assessment scheme:

> *"[It] should always evolve. We should always feel as educators that we can, as long as we are following the criteria and meeting their learning outcomes, change the assessment if we all think as a group that this is what needs to be done."*

To address these differences, Participant 6 [AL] talked about a project to revise and unify course assessments in one of the ambassador's teams:

> *"In this project, he [one ambassador] was kind of doing a national rubric for the course, including participation. And the rest of the assessment was projects [and] assignments. So, I think this is kind of the right mix for [an] assessment [of] this course."*

As discussed in Chapter 2, assessing students learning in entrepreneurship courses is indicated by the main objective which can be teaching *about*, *for*, or *through* entrepreneurship. Most of the assessments in the above table are experiential in nature and are usually used when the objective of the course is to teach *for* entrepreneurship. When asked if the entrepreneurship course assessments differed from other courses and if so, how, participants shared that they believed that they assessed students differently. "*No exams*" was the most mentioned and stressed-upon answer. For example, Participant 10 [F] and Participant 11 [F] stated the following: "*The ones that we use are more project-based [and] group-based rather than examinations."* (Participant 10 [F]); "*We don't have a midterm in the class. We don't have a final exam*." (Participant 11 [F]). Participant 7 [F] taught one course, however, that included tests as part of the course assessments. Participant 7 [F] stated the following: *"[I provided] Test 1 and Test 2 [to] basically know that they understand the theory very well*."

It was established in Chapter 2 that teaching theoretical knowledge as part of entrepreneurship courses is required, hence the inclusion of tests in the course of Participant 7 [F]. The content element of the ETM also consists of a theoretical dimension, which was concerned with

teaching students entrepreneurship-related theories and knowledge. However, most participants in this study stated clearly that tests should not be part of the assessment scheme for the course.

Because all participants were teaching, supervising, or quality-assuring through a governmental mandate, they discussed whether they thought it was necessary to implement and integrate an entrepreneurship course into higher education majors. All respondents believed that the course was important for all undergraduate students irrespective of their majors and that entrepreneurship was cross-disciplinary and should not belong to any specific major. They specifically mentioned the idea that entrepreneurship is traditionally thought of as a business discipline and explained that this does not hold true. Their view was that entrepreneurship is a discipline that intersects with any other given discipline and therefore cannot be attached to a specific discipline such as business. They stressed the importance of offering entrepreneurship as a cross-disciplinary subject because graduates of all majors can benefit from its objectives. Participant 6 [AL] explained this idea:

> *"This doesn't belong to any major. Whoever thinks that entrepreneurship belongs to one major is ridiculous. This is an outrageous idea. And actually, many people think that way, and we kept hearing it. But why should it be owned by one major? [laughter] It's interesting! Especially [in] the College of Business: whenever we're discussing the implementation of this course, they want to own it. But by design, [the] course was put in the general education part of the curriculum. Because the best outcomes [occur] when you have mixed classes."*

Participant 9 [F] also discussed the cross disciplinarity of entrepreneurship by saying:

> *"I believe that entrepreneurship is a discipline across a variety of areas of learning, so it could be applied in education. So, it is a discipline, but it's not one that we can categorise going in[to] one faculty because it goes across many, many disciplines."*

Several participants agreed with mandating the course and making it a requirement for all undergraduate students. For example, Participant 8 [F] stated:

> *"They're trying to request that every single student has to go through such training to know their capabilities—to know how to go to the next level. So, definitely, it's very important."*

In the same vein, Participant 5 [AL], expressed their agreements with the government's direction as follows:

> *"First of all, I'm glad, honestly, the way the government and UAE is driving the initiative from top-down."*

Participant 11 [F] also mentioned that the government's top-down approach was important:

> *"I think it's great that it's coming from the top-down. That really reinforces the necessity for it, and it really legitimises the instruction ... I'm glad that it's actually mandatory because I think that if it weren't mandatory, the only people who would probably take entrepreneurship [courses] would-be business students because they sort of naturally associate entrepreneurship with starting a business ... that's why I think it's good that this is mandatory for everyone because it gives everyone some exposure to the ideas."*

Participants stressed the importance of exposing all students to entrepreneurial learning at some point in their education because any student may have an idea that could be transformed into a venture. Several participants also suggested that students would benefit from learning about entrepreneurial skills earlier in their educational journeys. Participant 13 [F] had the following to say:

> *"I think this is valuable, and I think that it should be implemented even earlier … not only in universities. They should make it required for all high school students."*

Participant 16 [F] also stressed on the same idea by stating:

> *"It's good to expose the students, the lower levels, like those who are just getting into university, but I would suggest that [students] should be exposed to these ideas a lot earlier than when they are [at age] 17, 18, and 19 … at schools, yes, of course, at schools: grade one, two, three."*

Some participants argued for the integration of entrepreneurial skills across the curriculum and within different courses. Participant 5 [AL] for example expressed their concern about not integrating entrepreneurial skills across curricula by stating that:

> *"The issue that I am concerned about in the education system [is that] this course is not integrated in other classes. I think [that] each college maybe need[s] to come up with an idea from a curriculum point of view [about] how to link to this course with other courses that the students are taking. Because in any course they take, they can come up with an idea, so I think that integration is really missing in the curriculum in our university."*

Participant 6 [AL] also mentioned that entrepreneurial skills should be integrated in the curricula of higher education institutions:

> *"They're here at a college for four years. Your job as an academic educator and an academic leader is to look at figuring out ways where you can infuse entrepreneurship education almost in[to] every subject in every class and inside and outside the classroom."*

A priority of the UAE government is to infuse entrepreneurship education into undergraduate curricula. The findings of this study showed that those responsible for the implementation of this strategy supported the government's priority.

This section of the data analysis provided a clear answer to the question of how educators acquire the knowledge to teach entrepreneurship in UAE higher education institutions, as well as how they implemented entrepreneurship education in UAE undergraduate programmes. The information under this theme served to contextualise the present study, as participants described the Stanford University partnership that provided the basis for integrating entrepreneurship education at their higher education institutions.

4.8.2 Who is Teaching Entrepreneurship Education in the UAE?

The faculty members who received training at Stanford University earned selection from pools of hundreds of faculty applicants, which showed that they demonstrated the capability to teach the course. For the study, I collected and analysed entrepreneurship faculty members' curriculum vitae, finding that the study's nine faculty participants came from various professional and academic backgrounds. Several participants mentioned that an educational background was not a deciding factor for teaching the Stanford University–designed course.

Faculty taught the course irrespective of their previous teaching and educational backgrounds, which indicated that the course was taught mostly by the people who were willing to teach it, as opposed to people who had prior academic and practical training and experience to do so.

Despite the fact that the Stanford-designed course could be taught by any interested faculty member provided they attend the Stanford training, several participants brought up recruiting qualified faculty members to teach entrepreneurship as an area that required close monitoring. This reveals that there is still a need for faculty members who possess certain educational qualifications, such as a degree in entrepreneurship. It also means recruiting faculty members who have certain industrial experiences, as some of the participants explained. For example, Participant 6 [AL] explained that "*the main challenge is finding qualified instructors*". Participant 2 [PM] also stated the following:

> *"I think the key element in some of the university activities is the qualified faculty. So, one of the areas that will help the universities will be … faculty from the businesses and from the industries teaching in the classroom."*

Participant 7 [AL] elaborated on the same idea by saying the following:

> *"I think the biggest challenge, for the most part, is that you don't have enough qualified people to teach innovation and entrepreneurship. I think every individual that has some common sense related to business thinks that they're experts in innovation entrepreneurship. One of the key requirements of teaching innovation entrepreneurship is the theory that goes behind it. But I think a full understanding of the ecosystem is more important than just the pedagogy that goes around it. And that's the biggest challenge. A lot of our academicians are insular in the way they approach their work, so the number one challenge that I see is faculty understanding the theory behind*

innovation entrepreneurship, but they don't know what's happening in the marketplace."

The professional and educational backgrounds of participating faculty members varied. Three of them were trained to teach in higher education as teaching assistants while they were completing their PhDs. The majority did not receive specific training in higher education before they became university faculty members. This lack of training is questionable as the quality of teaching in higher education is considered to be important. On the other hand, the faculty members in this study had a variety of experience working in engineering, education, and business. Many of them expressed the belief that their previous work experience was relevant and useful for teaching the course.

In addition, participants discussed the importance of recruiting entrepreneurs with real-world experiences as faculty members. As Participant 6 [AL] argued, "*the best outcome is when the course is taught by an entrepreneur*." Gutierrez (2015) concluded that faculty members' entrepreneurial experiences could affect students' entrepreneurial intentions. Several participants in the study said that the course required faculty members with entrepreneurial and industrial experience. Participant 6 [AL] and Participant 7 [AL] agreed, stating the following:

> *"[At] Stanford and in many universities where you have a successful and active entrepreneurship education programme, a lot of the faculty are adjunct. They're practitioners. They founded companies, they're venture capitalists, they're investors, sometimes. Because even the students say, 'Okay, why should I listen to you about entrepreneurship? Have you done it yourself?' ... The best outcome is when the course is taught by an entrepreneur." (Participant 6 [AL])*

"People with industry experience and entrepreneurial background tend to be better equipped to teach this class." (Participant 7 [AL])

Participants do not think that only entrepreneurs make the best teachers for entrepreneurship programmes but also that those involved in the different stages of the entrepreneurial journey, such as investors and venture capitalists, are also capable. These individuals can provide different perspectives and experiences that students could benefit from. Most entrepreneurship faculty members showed some level of passion for teaching the subject. For some, this passion resulted from previous personal experience with entrepreneurship themselves or as a result of coming from an entrepreneurial family. For instance, Participant 8 [F] stated the following:

"We thought, yeah, you students have the ability, and as a university, we also have the ability to teach our students how to become different—how to become entrepreneurs. So, that's how it actually started. Then it became more of a passion towards this topic."

Participant 13 [F], who was an entrepreneur, mentioned always aspiring to become an entrepreneur:

"Well, growing up, I always wanted to start a business, so I wanted to be an entrepreneur … It wasn't until I went to college, [when] I studied in the US all throughout my college years, [and] I went to the US for maybe about 14 years … and I saw that having just ideas is not enough. You need to take the next step and start implementing the ideas … When I came back here to the UAE, I started teaching the course. I had an opportunity to go to Stanford University and further develop how to teach this kind of course and how to teach design thinking to students on how to come up [with] and design new products and take [them] to market. So, [it was] going to Stanford that also opened my eyes on how to do this … and after my training with

Stanford, I started the company a year and a half ago here in the UAE, and finally, I'm doing what I [have] wanted to do always in my life."

This participant was one example of how human capital in the form of higher education and entrepreneurial skills was acquired through studying abroad. Besides gaining academic credentials up to a PhD degree, he had developed his entrepreneurial skills, which he had been exercising through managing his own company. According to a number of participants, as discussed in the previous paragraph, the best teachers of entrepreneurship are entrepreneurs.

Two participants stated that their passion for teaching entrepreneurship was the result of an entrepreneurial family. For example, Participant 10 [F] stated the following:

"I come from an entrepreneurship background myself, but most of all, I come from a family of entrepreneurship practitioners. So, in other words, from generation to generation, my grandparents and their grandparents and so on were all jewellers—gold jewellers—and so basically going very much down the family business line, I decided that I wanted to go and learn about entrepreneurship."

Similarly, Participant 11 [F] stated the following:

"I have a lot of personal experience with entrepreneurship. Both of my parents [were] self-employed in various capacities over the years [as] I was growing up … So, both of my parents are entrepreneurs. I sort of dabbled in it, maybe a little bit less formally."

Similar to the faculty entrepreneur discussed earlier, these two faculty members also acquired some level of practical knowledge about entrepreneurship, but through their families. It can be argued that they had early access to building their entrepreneurial human capital through access

to role models, which is one of the experiential learning methods. This can be replicated in an academic setting by exposing students to entrepreneurs who can engage with students in various ways such as teaching, guest speaking, coaching, and mentoring.

This section provides an overview of who was teaching entrepreneurship in UAE higher education institutions. Information on faculty members teaching entrepreneurship courses was necessary to support the research objective of understanding the implementation of entrepreneurship in UAE higher education institutions. The findings show that all participating entrepreneurship faculty members received training through the Stanford University partnership, which did not specifically require specific academic background or experiences. Many respondents felt that receiving entrepreneurship training through a collaboration with a top-ranking Western university was beneficial.

4.9 Views About the Implementation of Entrepreneurship Education Across Undergraduate Disciplines in the UAE

Achieving this research objective occurred through an analysis of interview data and the related national and institutional documents. This section explores participant views on the implementation process of entrepreneurship education and what they thought about the challenges and opportunities of implementing it in higher education in the UAE.

4.9.1 Roles of Faculty Members and Students in the Teaching and Learning of Entrepreneurship

Many participants believed that entrepreneurship faculty members should play different roles from faculty members from other courses. One faculty member who taught other courses along with entrepreneurship mentioned that students were often surprised at how differently she taught her entrepreneurship course: "*Because the whole nature of the course is different, my*

role is more [of] a kind of friend to them or [a] critical friend to them rather than a teacher in this course."

Participants stressed the importance of moving to roles in which faculty members acted as facilitators or mentors to allow the students to take responsibility for their learning processes. Participant 10 [AL] had the following to say:

> *"And I've just recently published ... a Palgrave textbook called "Experiential Learning", and in that [book], I talk about how academics need to stop thinking like academics and start thinking more like mentors and [take on] more mentorship styles of working with people."*

Participant 5 [F] further explained the idea by stating:

> *"Your role as a faculty in the classroom has to be very much focused. Sometimes, you're a coach. Sometimes, you're a facilitator. Sometimes, you're a mentor. And other times, you are a traditional teacher, and you just have to constantly go back and forth between the different hats."*

Playing these different roles in the classroom does not seem to be an easy task. The role of a traditional teacher is very different than that of a facilitator, mentor, or coach. This could put more pressure on entrepreneurship faculty members to deliver in the classroom. However, the roles of a facilitator, mentor and coach seem to facilitate experiential learning, which is considered the to be a suitable learning strategy for entrepreneurship.

Alternately, educators expected students taking entrepreneurship courses to adopt different positions than they did in other courses. Educators expected these students to have open minds

about their learning, accept uncertainty and the possibility of failure, and understand that there were no right or wrong answers. Participant 7 [AL] stated the following:

> *"The role of the student varies very much. Sometimes, they are the student; other times, they are the group leader; and other times, they might be the teacher because they might have certain knowledge about a particular product or a particular industry that the teacher might not have the capacity [to teach], and then that's where the role of the student varies a little bit: [when] they bring into their classroom their industry experience."*

Participant 14 [F] explained how the importance of teacher-student partnership in teaching entrepreneurship courses:

> *"It has to be a partnership model. It can't be a teacher teaching [the] course to their students. It can't be transmission work. It can't be indoctrination. It has to be a partnership model. Well, the teacher is a kind of facilitator, and together they are with the students in the journey of constructing the knowledge because all [of] this contextual knowledge is very different."*

Allowing students to be responsible for their own learning seems to be key in teaching entrepreneurship. Seeing students as partners in the learning experience rather than just receivers is an interesting perspective. Linking the last two quotes to the earlier quotes on the role of entrepreneurship faculty members, it becomes clear that participants want their students to be active learners in the classroom. Therefore, they mentioned the facilitator, coach, and mentor roles, which require students to do more participation, discussion, problem-solving, and reflection. Participants expect their students to be responsible for constructing their own knowledge, which is one of the bases of experiential learning. Highlighting the importance of

contextualisation of this knowledge is another important piece in this quote, as it shows that learning in entrepreneurship is best when contextualised.

Overall, educators in this study argued that both faculty members and students had different roles and responsibilities when teaching and learning entrepreneurship. Participants stressed the importance of giving the students responsibility for their own learning. Participants also believed that giving students the responsibility for their learning was empowering and suitable for the entrepreneurial learning process.

4.9.2 Is Entrepreneurship Education for Everyone?

The tension shown in the literature of whether or not entrepreneurship is teachable did not come up in the interviews, perhaps because all participants were actively implementing entrepreneurship education in their higher education institutions. Participant 6 [AL] had the following to say:

> "*We believe [that] if you're in this business [education], you believe that you can teach people to be innovative and you can teach people to be entrepreneurial*."

All interviewees believed that entrepreneurship was teachable and that anyone could become an entrepreneur. Participant 8 [F], Participant 10 [F], and Participant 12 [F] had the following to say:

> *"You don't get born an entrepreneur; you can become an entrepreneur." (Participant 8 [F])*

"So, for me, entrepreneurship is a behaviour. I think that's the best way [that] I can describe it. And behaviours can be learned. They can be nurtured." (Participant 10 [F])

"If you ask me what an entrepreneur is, I think anybody can be an entrepreneur. There's lots of examples of that." (Participant 12 [F])

Entrepreneurs, then, can be made and nurtured, according to participants. This also confirms participants' views that all students should be exposed to some form of entrepreneurship education during their school or college years.

4.9.3 Experiential Learning and Entrepreneurship Education

All participants stressed the importance of moving away from traditional teaching methods such as lecturing as they did not see these as effective tools for entrepreneurship education. Participants' views and opinions about the best pedagogies to teach entrepreneurship corresponded with their course descriptions and learning outcomes. However, the choice of pedagogy was not necessarily unrelated to the importance of teaching entrepreneurship, as Participant 5 [AL] stated the following: "*The theory behind it is very important, but you can cover the theory*."

Participants discussed traditional teaching methods and how these methods were not suitable for teaching entrepreneurship. For example, Participant 12 [F] described this idea by stating:

"I think the thing that would define good teaching is being comfortable in stepping outside of how we traditionally view teaching … you have to allow the students to engage with the material [and] engage [with] the class in ways that are non-traditional."

Participant 6 [AL] summarised the idea of traditional versus non-traditional teaching in entrepreneurship by simply saying that:

> *"[Good teaching is] you don't talk much! [laughter] You don't lecture."*

Participant 14, [F] and Participant 11 [F] stated also the following:

> *"When we teach our classes, we don't lecture a lot in our classes; we focus on student participation a lot." (Participant 14 [F])*

> *"I don't really do the PowerPoint thing: I don't really lecture in the traditional sense ... I mean sometimes you have to lecture, but I try to really make it more engaging and more interesting whenever possible." (Participant 11 [F])*

These participant statements focused on the benefits of novel ways to engage students beyond the traditional lecturing format. Participants who taught entrepreneurship favoured experiential learning over other teaching and learning strategies. In the Stanford course syllabus, sessions were to be delivered through a mix of strategies such as lectures, discussions, interactive activities, and question-and-answer sessions with guest speakers. Though the Stanford course even provides pre-designed PowerPoint presentations to be used for lectures (as mentioned by some participants), it is apparent that some faculty members do not follow precisely these provided materials. Refraining from using lectures in the classroom could be attributed to participants views that entrepreneurship is best learned through experiential learning.

When asked about what they considered *good teaching* for entrepreneurship, all participants provided examples of strategies that resembled experiential learning of some sort. Participants referenced teaching methods such as problem-based learning, project-based learning, case

studies, real-world experiences, and internships. Table 12 shows the different teaching methods discussed in the interviews:

Teaching Method	**Sample Quotes**
Business plans	*"The most important output of the course is to develop a real business plan for an idea that the students will come up with, and a complete business plan from finance, from marketing, from operation, from requirement and so it is really a very comprehensive plan." (Participant 5 [AL])* *"It would help if you understood some business fundamentals: how do you develop a business plan that a bank would look at or a foundation would look at and say, yeah, you know what, this is a good idea, you've thought it through." (Participant 3 [PM])* *"So, even though you are learning about design thinking and how to be innovative; to produce services or to produce a product, in the end, you still need to decide is it a viable business plan or not." Participant 4 [AL]*
Design thinking	*"You learn about design thinking, which is a process. So, it's very applied. It's very experiential." (Participant 6 [AL])* *"I think design thinking … a critical design thinking should be a critical part of entrepreneurship education." (Participant 9 [F])* *"So, the main goals I would say are teaching students about design thinking, helping students determine are their ideas of viable business plans." (Participant 4 [AL])*
Case studies	*"I think case studies are a really good way to teach entrepreneurship." (Participant 12 [F])* *"You need to have a lot of case studies, so students understand really what worked well, what did not work well." (Participant 5 [AL])* *"We have a lot of case studies involving Emiratis. We highlight especially … we just had our [name of an event]—we highlight cases from news stories about what individuals have done, what sparked their passion for the entrepreneurial ventures that they've embarked on." (Participant 4 [AL])*
Lean startup	*"Today, we teach business entrepreneurship with the focus of the lean startup method, which is very much focused on, "Do you have a good idea? Are you able to put that good idea into motion? And if you are, go ahead and get started." (Participant 7 [AL])* *"I prefer the lean startup philosophy." (Participant 12 [F])* *"Part of it [the course] is very generic, which is a process called the "lean startup method." (Participant 6 [AL])*

Teaching Method	Sample Quotes
Problem-based learning	*"Essentially, it is problem-based, right? The students go out and they try to solve the things that are an issue in the UAE society." (Participant 9 [F])* *"We designed our class where students are contributing and discussing, so we raise a problem or we raise a challenge, and students come up with solutions." (Participant 13 [F])*
Project-based learning	*"It is primarily project-based." (Participant 4 [AL])* *"The best thing we do every semester is the term project." Participant 8 [F]* *"Yeah, I think the ones that we use are more project-based, group-based, and project-based rather than examinations." (Participant 10 [F])*
Prototype	"*We tell the students that we need to see a prototype. So, we need some implementation, because anybody has an idea that the issue is how you can bring your idea into the market." (Participant 5 [AL])* *"I ask them to make a prototype either a visual mock-up or like a physical one, but I don't actually ask them to do this thing because that would be a whole another level." (Participant 11 [F])*
Real-world experiences	*"Whatever you do, it should translate into the students' kind of being more and more hands-on—being more and more applied." (Participant 6 [AL])* *"My thinking in this area is that the teaching style for entrepreneurship has to almost mimic what happens in the real world." (Participant 7 [AL])*
Internships	*"You need work experience opportunities from year one, year two, year three, year four—where students actually are sent out to do internships in the private sector, not the government sector." (Participant 2 [PM])*

Table 11: Entrepreneurship teaching methods discussed by participants and supporting quotes

As discussed in the literature, educators usually base their selection of entrepreneurship teaching methods on whether the course objective was to teach *about*, *for*, or *through* entrepreneurship. The teaching methods mentioned in the ETM should be consistent with the course objectives and contents. Most participants in this study used the *for* entrepreneurship approach, which seems to be the obvious objective of the Stanford course, and focused on engaging students in solving practical problems relating to their potential future careers (Volkmann & Audretsch, 2017). The National Higher Education Strategy 2017-2030 document discusses providing students the opportunity to experience entrepreneurship through a fully funded one-year leave sabbatical to establish and operate a new venture.

4.9.4 Role Models and Mentors in Entrepreneurship Education

Nearly every participant indicated the importance of involving role models in entrepreneurship education. Sometimes these role models are the instructors themselves, but at other times they are individuals from the community. Involving role models and mentors is one of the ways the know-why element of the ETM can be approached, according to Fayolle and Gailly (2008). Testimonies from real-world entrepreneurs can help students identify themselves with these entrepreneurs and determine if they can do what they do. Participant 7 [AL] explained the situation as follows:

> *"We started bringing speakers—entrepreneurs—from the community [who] have been successful to share their stories with the students."*

Participant 13 [F] also stressed on the importance of including mentors and role models as follows:

> *"I think [that what] is important is teaching by bringing in people from the real world who have done it and share with them their journey, whether successful or [unsuccessful]—share with them what they went through, what struggles they had … we bring in actual people who've done it; they come and give talks, and the students love it that way."*

In addition to role models, providing students with opportunities to connect with mentors, especially during the process of venture creation and incubation, was crucial to students' learning. Participant 6 [AL] and Participant 7 [AL] explained this idea:

> *"It's very important to have access to mentors, mentors who have [succeeded], [who] you can respect, and [who] can give you insight based on experience." (Participant 6 [AL])*

"We've worked with young leaders to mentor some of our students, and we've done programmes associated with that." (Participant 7 [AL])

Several participants also discussed the importance of alumni entrepreneurs as role models for the students—specifically, the value of using successful Emirati entrepreneurs as role models and mentors. Participant 4 [AL] had the following to say about involving alumni:

"And so last year, we invited two [university name] alumni to come who are entrepreneurs and share their story with our … classes."

Participant 3 [PM] also stressed on the role of alumni in promoting entrepreneurship among students by saying:

"They run a lot of alumni sessions where successful entrepreneurs will come and talk, will give lectures, or give seminars to the students on a wide range of topics, including setting up your own business, scaling up your own business, and so on."

Connecting students to role models and mentor, especially those from the same background, is an effective teaching method that supports experiential learning. Students need to have those interactions outside of the classroom to enhance their learning experiences. Linking this idea to participants views that entrepreneurs can be the best teachers, recruiting entrepreneurs to teach the course would be a good strategy to inspire and motivate students.

Several participants mentioned that involving entrepreneurship role models and mentors was challenging due to the complex administrative procedures for bringing guest speakers into the classrooms. Participant 5 [AL] highlighted difficulties caused by the security clearance needed by stating:

"The problem we face at [name of university] is to bring speakers from outside, and that, honestly, is a big challenge because you need to go through security clearance, and that take[s] some time."

While Participant 13 [F] made a comparison to the easy process at other universities:

"Well, to be honest, the administrative process is sometimes complicated … If you look at other universities like MIT or Stanford, part of teaching the class [is that] they have people come in and lecture. It's a very easy process. The administrative process is very easy because most of the people [who] are coming back [are] alumni. They're from the university—they graduated from the university."

According to participants, involving role models and mentors in entrepreneurship learning was important yet challenging. Despite the importance of involving mentors and role models in the teaching of entrepreneurship, the administrative procedures mentioned by participants seem to be obstacles to such involvement. Overcoming this challenge does not seem to be an easy task for participants. For example, even if those lectures were to be organised online, the same procedures would have to take place. There was a consensus on the value of connecting students with entrepreneurs, especially Emiratis, to expose them to real-world examples in the UAE. However, the administrative difficulties often presented obstacles.

The documents included for analysis in this study did not clearly mention the role of role models and mentors in teaching entrepreneurship. However, the National Higher Education Strategy 2017-2030 includes a plan for engaging individuals from the private sector in teaching at higher education institutions. It was not specifically mentioned what courses those

individuals will be requested to teach; however, it can be expected that they will be involved in teaching entrepreneurship courses.

4.9.5 The Case of Emirati Students

Participants reported mixed thoughts and views about teaching entrepreneurship to Emirati students. The higher education institutions in this study either uniquely served Emirati students or their student population comprised 50% or more Emiratis, while participants in the study were mostly non-Emiratis. Several individuals described Emirati students as more confident and passionate than students from other nationalities because they learned through the courses about the opportunities from the government for Emiratis to start and grow new ventures. For example, Participant 14 [F] stated the following:

> *"I think that in this course, the Emiratis are much more confident than the non-Emiratis because they know that they will have a strong support system in the country, and they don't have any of those restrictions that non-Emiratis have. For example, if they want to start a business, they can own the business, and they can expand anywhere. They don't need to have to look for a local partnership and worry about that kind of thing, and they know that their government is highly interested in Emiratisation and [that] they will have a lot of opportunities available out there. I feel that the confidence level is much higher in Emirati students than [the] non-Emirati students in this course."*

Participant 13 [F] made similar comments as follows:

> *"Well, you see that Emiratis are more passionate about starting a business in this country. They've seen the problems, they've experienced the culture, they know everything related to what we're going through here in the UAE, and they see the*

growth here. This is the country that they love. This is a country that they want to make changes for, so they're more passionate about starting a business here and so on."

Several participants mentioned that their Emirati students liked the course because they gained confidence, discovered their capabilities, and were inspired to work towards their business ideas. For instance, Participant 13 [F] had the following to say:

"Well, from my experience of teaching this course for three years, students love this course, first of all. A lot of students come back to me after they've taken the course. The first year I taught the course, I had one student who graduated, and now he [has] started his own company. He came back to me. He said, 'I would like to come in and give a lecture in one of your classes explaining how I developed my business, what I learned,' and so on. So, people are happy."

Participant 5 [AL] reiterated the same by stating:

"From my experience, honestly, I would say the majority of the students enjoy the course. I mean … this is where you need to mentor them and you need to encourage them, but what I'm hearing in general [is that] they are enjoying the course."

Despite the enthusiasm shown by Emirati students, some participants expressed concern as to whether these students actively chose to pursue their entrepreneurial goals. Respondents explained that students might hesitate to become entrepreneurs due to the appeal of secure and financially lucrative UAE government jobs. Participant 6 [AL] stated,

"The main reason is economic incentives. I mean, before we didn't have the—let's call it the disincentive—against entrepreneurialism. Why do it if I could just do a very

comfortable government job? So, if they are not entrepreneurs, maybe it's because of this."

Emirati graduates often avoided working in the private sector, which some participants argued was a good start for those aspiring to become entrepreneurs. The private sector in the UAE does not provide similar compensation to government jobs: accordingly, Emiratis often fear the consequences of employment instability, particularly during times of financial crisis. Participant 3 [PM] explained the situation as follows:

> *"I was at the [name of higher education institution in UAE] for a long time. And we have talked about moving, we've talked about changing the mindset among Emiratis from public to private sector forever. Forever. And I would say that things are ... moving, but they're not moving fast enough."*

Most participants encouraged their students to consider entrepreneurship as a career, believing that the quality and quantity of national entrepreneurs affected the country's levels of economic growth. Participant 5 [AL] had the following to say about the importance of promoting entrepreneurship as a way to advance the economy:

> *"This is essential for the sustainability of any economy in the world, and this is where we need the young generation—mostly the students—because they are the fresh mind[s], and they are very close to the problems that they are facing more than we saw on our journey[s]. And part of it [is] because this is the way you can be continuously moving the wheel of the economy. Because we need new companies to be established, and this is where we can hire people, and we [can] start creating these big companies or small business companies."*

Participant 16 [F] also stressed on the importance of preparing youth to become entrepreneurs and contribute to the country's economy by saying:

> *"Because the economies of the future will be based on entrepreneurship and innovation, as a country, we cannot continue relying on oil and gas to just continue developing, so we will have to use our brains [and] our ideas to continue growing and competing in the future."*

According to Vision 2021, achieving these goals will occur through the creation of a culture of entrepreneurship. Vision 2021's (2014) strategy includes the statement that "promising Emiratis must be nurtured to become captains of industry and dynamic entrepreneurs, marshalling the country's resources to bring innovative products to the marketplace" (p. 16). Although several initiatives exist for the creation and promotion of an entrepreneurship culture among Emiratis, government leaders have emphasised the importance of education. The implementation plan for the National Strategy for Higher Education 2017–2030, presented by the Higher Education Division at the MoE, demonstrates this role in detail. As part of the partnership with the strategy's industry section, members of the MoE offer Emirati student entrepreneurs with qualifying start-up ideas the initiative of funding for a one-year sabbatical leave and opportunities to incubate and fund their start-ups through partnerships with local funding establishments. Members of the MoE also encourage university educators to establish incubators as part of the strategy's effective innovation ecosystem section.

From a quality-assurance point of view, the MoE provides for the integration of entrepreneurship education into undergraduate programmes through accreditation and licensure processes. The 2019 CAA guidelines indicated the importance of accreditation and licensure:

> The Standards 2019 also reflect initiatives of the MoE that strengthen the contributions of the education sector as a whole to the economic, social and cultural advancement of the UAE. Examples include an emphasis on developing the capacity of graduates for entrepreneurship. (p. 9)

All national and governmental policy documents included in this study showed the importance of building the youth's entrepreneurial capabilities for the advancement of a knowledge economy. The correlation was evident in seven academic course catalogues as well. However, during their interviews, most participants did not specifically mention a knowledge economy, even when discussing entrepreneurship and the growth of the country's economy. Only Participant 13 [F] referred to the knowledge economy:

> "*So, we need the younger generation to have this kind of thought to develop our country and push our country to the next stage of [technological] advancement, and so on*."

Participants argued that Emirati students needed to shift their general mindsets about entrepreneurship and learning. Several participants identified the challenge of teaching entrepreneurship to Emirati students who are the products of a school system that presents instruction in a linear process with a focus on memorisation. Emirati students may find learning entrepreneurship skills challenging, as the discipline requires open-mindedness and acceptance of uncertainty. Participant 6 [AL] stated the following:

> *"You go from A to B to C, but if you take them out of that and you want them to be independent and apply the tools then sometimes they're frozen by the uncertainty and terrified … and then you have to build up their confidence."*

Participants discussed students' fear of failure as a barrier to learning entrepreneurial skills. According to the GEM report, fear of failure is one of the most highly rated reasons Emiratis

do not become entrepreneurs (*GEM* 2017). Participant 2 [PM] had the following to say about fear of failure:

> *"We want students to embrace failure, as in 'don't be afraid of it.' Failure happens. When you start a business, you don't expect all businesses [or] all start-ups to succeed."*

Participant 3 [PM] mentioned that students need to feel comfortable being vulnerable:

> *"I think they need to be vulnerable. I feel like our students are afraid to fail or that failure defines them in some way. And I feel like, in order to be an entrepreneur, you have to be willing to take risks and [know] that taking risks [is] okay. And that when things don't work out, there's still lessons to be learned from that."*

The previous quotes show the importance of changing students' mindset towards entrepreneurship. Fear of failure, for example, is one of the areas that need to be focused on by educators. This is why defining entrepreneurship as a mindset is an important first step when the objective is to change the mindsets of students. In the first theme discussed in this chapter— the meaning of entrepreneurship— several participants mentioned that entrepreneurship is primarily a mindset. Defining entrepreneurship as a mindset is important if educators take into account the idea of developing human capital, which can add value in the various sectors that contribute to the socio-economic development of the country.

Six participants described how entrepreneurship education was a way to encourage graduates to become entrepreneurial as employees in different organisations. Participants suggested that entrepreneurship education was not designed to inspire all students to create new businesses; rather, entrepreneurial educators should instil qualities and skills for entrepreneurship so

students can execute entrepreneurial projects within their organisations. Some participants further explained that students could benefit from entrepreneurial skills in different aspects of their personal and professional lives. This is also another example of how human capital can be developed through entrepreneurship to benefit organisations and individuals. Participant 5 [AL] explained this idea by saying:

> *"We want them to be creative on how to find or spot a need and come up with a creative or innovative idea to solve that need in any space. It could be at home, it could be in the neighbourhood, it could be in the community, it could be [the] government, [or] it could be education."*

Participant 15 [F] mentioned that entrepreneurial skills can benefit a wide range of individuals and in various way:

> *"I believe it can be beneficial for any age, and it includes both employees and students. I think it's like you can use it in different ways because it doesn't only talk about entrepreneurs like a business—it's about your life. It can be your planning, your future, how you make a change, how you overcome failure, how you dream and how you plan."*

The participating entrepreneurship faculty members discussed several strategies they used to understand their students and address their specific characteristics and requirements. These strategies were part of their efforts to customise their courses based on students' needs. Participants discussed contextualising the course as one of the main development areas. They mentioned several times that, although the course was well designed, making it suitable for Emirati students was essential. Participant 13 [F] stressed on the importance of customising the course by stating:

"The Stanford University course was geared towards the US market, the challenges in the U.S, and so on. We changed that to gear it towards the UAE market and the challenges here in the UAE and all these things related to the UAE."

Participant 12 [AL] mentioned that the use of US based entrepreneurial success examples is not suitable for Emirati students:

"The other thing is that a lot of the examples are from the US, so, even when we teach empathy, there's a really bizarre example. I think it's bizarre, anyway. We're trying to change that to try and have a more local sort of scenario for students when we're teaching empathy."

A number of participants mentioned that they had been and still were working on localising the course content. They also mentioned that further unified efforts across all the higher education institutions offering this course and through the programme ambassadors need to be made to ensure the content addresses the specific needs of Emirati students.

Emirati students could gain a deeper understanding of their past through course contextualisation. Two participants maintained that entrepreneurism was a crucial part of the old UAE's society. For example, Participant 2 [PM] stated the following:

"But I know that Emiratis, by their nature, they are traders. They are … [laughter]. So, definitely, they have this wealth of experience that they have inherited from their grandfather[s]."

In the same vein, Participant 6 [AL] also said:

> *"I think if you look back at the history of the UAE, we were very entrepreneurial. Before oil, [in] the economy … you [had] the traders [who] use[d] the seafaring routes … to carry goods and commodities from the UAE to Iraq, to Zanzibar, to India. It doesn't get more entrepreneurial than that. So, that's our culture. Oil is a relatively new development."*

According to the ETM, understanding entrepreneurship education audience (for whom?) is an important antecedent to designing entrepreneurship courses. From this study, it is obvious that participants believed that accommodating students' specific needs was a requirement for successful learning. As such, participants tried to meet the needs of their Emirati students. However, they found contextualising the course challenging, particularly because Stanford University faculty members had designed the course in a context different than the UAE.

4.9.6 Creating an Entrepreneurial Environment

The role of higher education in creating human capital is firmly established. Through this role, higher education institutions are encouraged to create supportive environments to complement the role of teaching. Supporting entrepreneurial learning can take various shapes and forms, of which two are establishing incubators and fostering fruitful partnerships with industry.

4.9.6.1 University-Based Incubators

Both the participants' responses and the selected national and governmental policy and strategy documents supported the creation of university-based incubators to support students. For example, the National Innovation Strategy (NIS, 2015) presented education as one of the enablers for the creation of an innovation environment. The National Higher Education Strategy 2017-2030 stipulates the role of incubators in promoting entrepreneurship among

higher education students. The same is also stressed in the National Innovation Strategy, which mentions that:

> High-quality education is a distinctive feature of developed countries that rank high on innovation indices. Hence, the NIS is dedicated to building a first-rate education system as a foundation for innovation. It aims as well to promote research and development across universities, besides incentivising innovation incubators to sponsor and assist innovators in transforming their ideas into leading projects. Such incubators will foster a culture of innovation by providing innovators with supportive counselling, training, and administrative support services, while promoting and funding their innovations by ensuring them access to a global network of potential business partners. (UAE National Innovation Strategy 2015, p. 8)

Nine participants stressed the importance of incubators inside higher education institutions. They mentioned that incubators were important to support students interested in taking their ideas further and launching new ventures from those ideas. For instance, Participant 11 [F] expressed the importance of makerspace by saying:

> *"I think that all of these schools teaching this course should have a Makerspace. I think they should have some kind of incubation centre. I think there should be some effort made to actually get students [to start] a [real] business."*

Participant 12 [F] also mentioned the importance of creating hubs for students to practice entrepreneurship by mentioning that:

> *"It would be nice if we had a hub so that [students] felt like it was really legitimate—that this is what we're doing, rather than a sort of a fake, let's pretend we're doing this sort of thing. So, you get them through a real sense of something."*

In the same vein Participant 3 [PM] highlighted the importance of incubators:

> *"Okay, you've got the big idea. You've got the passion. But how do you translate that into a viable enterprise? And therefore, part of the role of universities will be to help students do that. For example, [Name of a university] … has a business incubator."*

Four of the higher education institutions in this study had entrepreneurship centres or incubation spaces to provide students and alumni with mentorship, training, workshops, access to funding, working spaces, and other resources. For example, in one university, the innovation and entrepreneurship centre stipulates that part of its goals are to foster an entrepreneurial ecosystem with the university and engagement with community stakeholders. In another university, the innovation centre's goals include fostering a favourable climate for the entrepreneurial community and diversifying local economies. More examples of similar centres within higher education institutions are needed to promote entrepreneurial cultures within those institutions.

4.9.6.2 Partnership with Industry

The study's participants voiced the need for more collaboration within the industry in various forms, such as partnering with venture capitalists, local incubators and accelerators. The National Higher Education Strategy document also presents collaboration and indicates that university-industry partnerships are key performance indicators for innovation. Participant 1 [AL] for example stated:

> *"The world is evolving very, very rapidly. And the best way to learn about what exactly makes sense in the learning process is through this alliance of industry mentors and stakeholders [who] give opinions and make sure because it takes a two-way type of relationship."*

Participant 13 [F] talked about the strategies used in their higher education institution to involve industry by stating:

> *"We usually try to find and invite the VCs related to that project. So, a lot of [the] time, these VCs are actually more than happy to come down and participate in these kinds of things to help encourage students to be entrepreneurs. A lot of VCs are willing to do that actually, surprisingly. I was surprised initially, also."*

Participant 6 [AL] also motioned the importance of linking students to industry by stating:

> *"I believe that we need to link the students to the industry because this is where you can be close to the problems that the market needs, and this is where students can be more creative about coming up with a real solution for the real problems that we have."*

Participants thought it was critical for students' success to connect students to the real world of entrepreneurship by establishing and maintaining industry connections. The ETM stresses the importance of involving experts and professional in the teaching of entrepreneurship, especially to address the know-when aspect, which is concerned with teaching students how to assess if their entrepreneurial projects are good for them and if it is the right time for them to launch it. Whereas participants felt that industry partnerships were not fully developed, they stressed the importance of establishing industry partnerships to foster student learning and provide opportunities for growth.

4.9.7 Course Evaluations and Impact Assessment

Most participants said they evaluated their courses by examining students' performance with different assessments, mapping students' performance with the learning outcomes, and reviewing the students' course evaluations. Some participants also anecdotally mentioned that

students enjoyed the course because, after taking the class, they became more confident and entrepreneurial. One participant said it was difficult to measure the effect of entrepreneurship courses. Several participants also expressed the challenge of measuring the impact of an entrepreneurship course as a long-term process because it had different components that were not easy to measure, especially at the national level. For example, Participant 6 [AL] had the following to say:

> *"Well, this is the question we face, [that] we get always from the public, from my bosses [at] the university. I think we get it from the decision-makers, especially the ones who [have] invested in this course. The impact assessment is a huge project that we're working on. It is multi-tiered. I mean, you have impacts that can be measured in the short, medium, [or] long term … the impact of the students will be studied in a different way than the faculty, than the university ecosystem, than the whole … INE ecosystem in the UAE. So, this is a work in progress. But right now, [I and] … the ministry [are] mainly focusing on the basics, which is basically measuring how well all the programmes are implementing the course. The first impact is just having the accreditation."*

Likewise, Participant 2 [PM] stated the following:

> *"That's a challenging question … this should be or could be a long-term project that we'll look at it indirectly … So, right now we just started implementing entrepreneurship. And then imagine it takes 3 to 4 years for those students to graduate … and … go to the local market, so then we could ask [or] survey, or someone could survey the employers."*

Overall, there was no articulated or defined strategy to evaluate and measure the impact of entrepreneurship courses within the examined higher education institutions, the MoE, and other educational regulatory bodies in the UAE. It might be challenging to assess the creation of human capital through entrepreneurship education, especially if entrepreneurship is considered a mindset rather than a business-creation action. Evaluating and measuring the impact of entrepreneurship programmes is consequently a complex task that higher education institutions still need to figure out.

The last section of the data analysis presents evidence to support the research objective of understanding how entrepreneurship faculty members, academic leaders, and educational policymakers viewed the implementation of entrepreneurship education in the UAE. Findings showed that participants differentiated the roles of faculty members and students in entrepreneurship courses from the roles in other courses. The analysis also showed unanimity in the need to teach entrepreneurship to students in all disciplines. Also necessary for facilitating students' entrepreneurial learning were mentors and role models. Participants emphasised the importance the fostering and promotion by universities of entrepreneurial cultures through various support systems and partnership initiatives. Respondents also discussed the absence of clear and effective course evaluations and impact assessments for the last research objective.

4.9.8 Triangulation of Analysed Data

One of the objectives of using multiple methods in this study is to provide data triangulation and establish thick description for the phenomenon. This section will present the findings from both interviews and document analysis for the purpose of comparing and contrasting these findings.

Theme	Interviews	Document Analysis
The meaning of entrepreneurship	Participants defined entrepreneurship as wither a mindset or a venture creation act	No clear definition, but entrepreneurship was mostly seen as a key pillar in economic development
Entrepreneurship education policies	Participants were not able to articulate policies as these were non-existent	There were no policies related to entrepreneurship education in either government or institutional documents
Integration of entrepreneurship education into undergraduate programmes	Participants mentioned the Stanford University partnership as the main initiative mandated by the government to integrate entrepreneurship education in undergraduate programs	No policy documents were found that provide details about the integration of entrepreneurship education in undergraduate programs, however, publicly accessed information about it was available mainly through news outlets
Who is teaching entrepreneurship education?	No specific educational background or experiences were required, but faculty members were required to participate in the Stanford University partnership training	No policy documents were found that provide details about the integration of entrepreneurship education in undergraduate programs, however, publicly accessed information about it was available mainly through news outlets
Is entrepreneurship education for everyone?	All participants agreed that entrepreneurship education should be offered to all students	Analysis of government policy and strategy documents showed that entrepreneurship education is seen as being important for all students in all educational levels
Roles of faculty members and students in the teaching and learning of entrepreneurship	Participants expected students to be more responsible for their own learning. They also highlighted the multifaceted role of faculty members who are expected to be facilitators and mentors as opposed to traditional teaching roles	There were no documents that clearly discuss this theme
Importance of experiential learning	Participants agreed that the best strategy to entrepreneurship is through the experiential learning approach	The analysed course syllabi clearly showed that the dominant teaching methods used in teaching the course were based on experiential learning practices. The National Higher Education Strategy 2017-2030 includes a plan to incorporate a one-year sabbatical leave for students who want to pursue entrepreneurship, which is an opportunity to learn through real-world experiences
Role models and mentors in entrepreneurship education	Participants emphasised the role of role models and mentors in	The National Higher Education Strategy 2017-2030 documents

	teaching entrepreneurship, particularly local entrepreneurs. They discussed engaging them as guest speaker, coaches, mentors and adjunct faculty members	includes a plan for involving private sector CEO's as adjunct faculty members. Though this was not specifically related to teaching entrepreneurship, it can be predicted that some of these CEO's might be requested to teach entrepreneurship courses
The case of Emirati students	Participants mentioned that Emiratis mindset towards entrepreneurship needs to be changed, possibly through localising course content to address their specific needs and issues. Favoring government jobs and fear of failure were two major challenges.	Emiratis are considered as key players in advancing the economy and transitioning to a knowledge economy in most of the policy and strategy documents
Creating an entrepreneurial environment in the higher education institution	Participants agreed that universities should encourage entrepreneurship through incubators and partnerships with industry	The role of incubators is emphasised in both the National Innovation Strategy and National Higher Education Strategy 2017-2030 documents
Course evaluations and impact assessment	Participants indicated that evaluating the impact of entrepreneurship courses is a complex task that had not yet been established, both on the institutional and the national levels	There were no documents that clearly discuss this theme

Table 12: Triangulation of findings from interviews and documentary analysis

4.10 Conclusion

This chapter includes a discussion of the data analysis procedures as well as the emergent themes from the data relevant to the research questions. A discussion of the ten emerging themes supports an overview of entrepreneurship education implementation in UAE higher education institutions. The most prominent finding from the analysis is that educators at higher education institutions implemented entrepreneurship education because of the government mandate for a unified course. Educators taught the course in all higher education institutions with a certain amount of customisation in each school. The participating educators considered the contextualisation of the course content vital for ensuring appropriate course objectives.

Document and interview analysis also showed that national or institutional entrepreneurship education policies were non-existent, despite being necessary to ensure that all stakeholders agreed on the implementation and the assessment of entrepreneurship education programmes and initiatives. Although participants agreed that entrepreneurship education was a precursor for entrepreneurial activity, there was no consistent definition of entrepreneurship. The data demonstrated a belief that entrepreneurship caused economic growth. However, the absence of a clear and concise definition of entrepreneurship in the context of the UAE and its economy resulted in vague entrepreneurship education programmes.

A uniform definition of entrepreneurship in the context of the UAE is especially important when considering the characteristics of Emirati students and the societal expectations of such students as future players in the advancement of the country's economy. All participants considered experiential learning and learning-by-doing the most effective teaching methods for entrepreneurship. Data analysis also showed that participants considered the roles of faculty members and students in entrepreneurship courses to be unique and different, thus necessitating student independence. The next chapter will present the findings, research implications, recommendations for practice, and conclusions.

Chapter 5: Discussion of Findings

This chapter discusses the findings of the study in the context of the theoretical framework and the reviewed literature from Chapter 2. Also discussed will be theoretical and practical implications, as well as recommendations for future research. Following is a discussion of findings presented in the form of answers to the study's questions.

5.1 Overview of the Research and Summary of Key Findings

The purpose of this qualitative study was to explore entrepreneurship education in UAE higher education institutions. Before data collection, I had encountered a major initiative launched in 2016 to integrate entrepreneurship education across all undergraduate disciplines in UAE higher education institutions. However, at the time, there was little information about this initiative in the public domain. When I started searching websites and the academic catalogues of higher education institutions, my assumption was that faculty members at some of those institutions had already integrated entrepreneurship courses into third-year or fourth-year undergraduate study plans. I expected to find entrepreneurship courses in the study plans of a communication and media sciences major, for instance, or in a graphic design major. However, this was not the case.

Instead, most higher education institutions provided their students with a compulsory general education course as part of the undergraduate study plan for every major with three primary components: innovation, entrepreneurship, and leadership and growth. The course titles indicated the content: for example, Innovation and Entrepreneurship and Fundamentals of Innovation and Entrepreneurship. Most higher education institutions offered the course during students' second or third year of study. After making this discovery, I identified a need for

research focused on understanding participants' views and experiences of this course, as it was the most widespread, cross-disciplinary undergraduate entrepreneurship course.

The study therefore provided a means to address gaps in the literature by uncovering the views and experiences of individuals with roles and responsibilities in the implementation of entrepreneurship education in UAE undergraduate programmes. Most of the researchers on such topics have used quantitative approaches to measure students' intentions towards entrepreneurship in relation to variables such as family background and education. This study was a way to add to the current body of knowledge, with a qualitative research approach utilised to add depth and nuance to the literature. The study also provided another perspective on how those responsible for implementing entrepreneurship education experience understand and view the implementation process. It was important to study and comprehend the perspectives of these individuals, as they have the potential to affect the implementation process.

Means of data collection for this study included semi-structured interviews with higher education institutions' entrepreneurship faculty members, academic leaders and educational policymakers. National and institutional policy and strategy documents and other documents underwent analysis for an in-depth understanding of the perceived opportunities and challenges of undergraduate entrepreneurship education. Qualitative data analysis with a thematic approach was the means to answer the research questions. Data analysis was performed on the responses from 16 interviews and 32 documents, which resulted in the formation of the 10 main themes outlined in Chapter 4. The study was based on the following questions:

Q1: How do entrepreneurship faculty members, university academic leaders, and educational policymakers understand entrepreneurship?

Q2: What is the entrepreneurship education policy in the UAE?

Q3: How is entrepreneurship education implemented in undergraduate programmes in the UAE's higher education institutions?

Q4: What are the views of entrepreneurship faculty members, university academic leaders, and educational policymakers about the implementation of entrepreneurship education in undergraduate disciplines in the UAE?

A summary of the key findings of the study as they relate to the research questions and identified main themes is shown in Table 13. These findings are discussed in relation to the research questions of the study and in the context of previous literature in the next section.

Research Question	**Main Themes**	**Key Findings**
How do entrepreneurship faculty members, university academic leaders, and education policymakers understand entrepreneurship?	• The meaning of entrepreneurship	• Some participants believed that entrepreneurship requires new business creation • Others viewed it more as a mindset • Lack of formal documentation defining entrepreneurship
What is the UAE's entrepreneurship education policy?	• National entrepreneurship education policies • Institutional entrepreneurship education policies	• No documented national policies on entrepreneurship education in UAE • Participants referred to federal or local initiatives or to Vision 2021 • Integration of entrepreneurship education mandated by the prime minister in 2015, but institutions have flexibility on the form this takes • Need to tailor entrepreneurial education to UAE context
How is entrepreneurship education currently implemented in undergraduate programmes in the UAE's higher education institutions?	• Integration of entrepreneurship education into undergraduate programmes • Who is teaching entrepreneurship education?	• Based on a 3-year partnership between the UAE's MoE and Stanford University in the US • Provides professional development for UAE faculty members to teach INE course and train other faculty members to do so • Faculty selected to undertake the Stanford training from diverse backgrounds, some entrepreneurial
What are the views of entrepreneurship faculty members, university academic leaders, and policymakers about the implementation of	• Is entrepreneurship education for everyone? • Roles of faculty members and students in the teaching and learning of entrepreneurship	• All participants believed that entrepreneurship is teachable • Faculty act as facilitators or mentors rather than formal teachers • Importance of experiential learning

entrepreneurship education in undergraduate disciplines in the UAE?	• Importance of experiential learning • Role models and mentors in entrepreneurship education • The case of Emirati students • Creating an entrepreneurial environment in the higher education institution • Course evaluations and impact assessment	• Students must be open-minded and take responsibility for own learning • Some Emirati are enthusiastic about entrepreneurial learning • However, there are concerns that Emirati students do not pursue entrepreneurial goals • Importance of incubators and industry connections for reinforcing entrepreneurial education • Difficulties and inconsistencies in evaluating student performance

Table 13: Summary of the study's key findings

5.2 Discussion of Findings

5.2.1 The Meaning of Entrepreneurship

The literature review revealed two main perspectives on entrepreneurship that educators use to design and deliver entrepreneurship education. The first view indicates that entrepreneurship is about creating new business ventures, and the second views entrepreneurship as a mindset and a skill set that does not require the creation of a financially rewarding company. As indicated in Chapter 2, the variety of entrepreneurship definitions is largely a result of how scholars in different disciplines—such as economics, business, psychology, and education—conceptualise and understand entrepreneurship.

The interview findings of the current study revealed that entrepreneurship education was primarily viewed by the participants as being concerned with the development of entrepreneurial or innovative mindsets and attitudes, regardless of whether such outcomes result in the creation of profitable ventures. This view is aligned with the perspectives on entrepreneurship and innovation of Davey, Hannon, and Penaluna (2016b), Drucker (1985), Fayolle (2008) and Room Fitrianto (2014). The study's participants also discussed the importance of intrapreneurship (El-Sokari et al. 2013; Matlay 2005; QAA 2018) and social entrepreneurship, demonstrating that their conceptions of what constitutes entrepreneurship

extend beyond the commercial context. For example, six participants described how entrepreneurship education is a way to encourage graduates to become intrapreneurial as employees in different organisations. According to Chakravarti (2017), employees in all present-day sectors are encouraged to be innovative and self-starting. Some participants further explained that students could benefit from entrepreneurial skills in different aspects of their personal and professional lives.

In the absence of formal policies on entrepreneurial education in the UAE, the views of these participants may be influential in shaping the current approach to entrepreneurship education in the UAE. However, views were mixed, with several participants arguing that entrepreneurship is primarily about creating and commercialising a new company. It was highlighted in the literature that a diversity of views or misaligned assumptions about entrepreneurship can complicate the development and implementation of education policies (O'connor 2013). According to Fayolle and Gailly (2008), "Each entrepreneurship education program should be based on a clear conception of entrepreneurship leading to a non-ambiguous definition of entrepreneurship education" (p. 573). The ontological understanding of what entrepreneurship is the first step educators should start with according to the ETM discussed by Fayolle and Gailly (2008). The non-unified definition of entrepreneurship among participants could be a direct result of the absence of policies that articulate it in the context of the UAE's economy. However, even the existence of policies does not always guarantee the use of a concise definition. Ten of the EU member states, for example, do not have an agreed definition of entrepreneurship at the national level (Bacigalupo, Kampylis, Punie, & Brande 2016). The EntreComp (entrepreneurship competence) Framework was therefore developed by the EU's Joint Research Centre in 2016 to provide a common definition of what

entrepreneurship as a competence is. The next section discusses entrepreneurship education policies in the UAE at both the national and institutional levels.

5.2.2 Entrepreneurship Education Policies in the UAE

It is challenging to craft entrepreneurship education policies because of the complexity of entrepreneurship and what it means to different stakeholders (O'Connor 2013; Hoppe 2016a). Policymakers must clearly define entrepreneurial activity to create productive entrepreneurship policies to achieve their desired outcomes (Hoppe 2016a). One of the objectives of this study was to investigate the presence, or lack thereof, of policies on the implementation of entrepreneurship education in the UAE's higher education institutions, which I achieved through interviews and documentary analysis.

5.2.2.1 National Entrepreneurship Education Policies

Entrepreneurship education is important for advancing national economies (UNESCO 2013). Therefore, entrepreneurship education policies must correlate with national strategies and overall entrepreneurship and economic development policies (Panigrahi 2016; UNCTAD 2010) with clear frameworks for desired outcomes (European Commission 2008). The literature also highlights the need for countries to decide how to approach the development of entrepreneurship education policies: as a separate national strategy or as part of other strategies such as education (UNCTAD 2010). Data from both documentary analysis and interviews showed that the UAE does not have formal policies at the national or the institutional (higher education institutions) level that provide a foundation for integrating entrepreneurship education in higher education, particularly at the undergraduate level. The absence of formal policies was especially evident from the interviews. Participants either indicated that they were not aware of such policies or referred to national or institutional entrepreneurship education initiatives instead of policies.

However, the literature indicates that the UAE is not unusual in this respect: though national policies on entrepreneurship education are important, many countries that support the advancement of entrepreneurship education still lack entrepreneurship education policies. In the UAE, the government actively regulates public and private universities through different federal and local government regularity bodies. The CAA, for example, as mentioned in Chapter 4, has clauses in its quality assurance manual for universities that include guidelines about entrepreneurship education. However, these guidelines only specify that universities incorporate innovation, entrepreneurship, and sustainability into undergraduate-programme learning outcomes and give the universities the choice to do so either by offering a standalone course or by embedding them into different courses. According to Kirby and Ibrahim (2013), among the countries in the Middle East and North Africa (MENA) region, only Tunisia includes entrepreneurship education in its national strategy. The same mixed message occurs in entrepreneurship education outside of the MENA region. In 2012, the European Commission found that not all EU countries had clear strategies for entrepreneurship education. The same report indicated that establishing entrepreneurship education policies and guidance frameworks for educational institutions was key for entrepreneurship education (European Commission 2012). Farnell, Heder, and Ljubić (2016) stressed the importance of establishing national multi-stakeholder partnerships, including ministries of education and ministries of economic development, to inform entrepreneurship education policies. Farnell et al. (2016) also contended that the stakeholders affected by these policies, such as university educators, should participate in the policy formation process.

Despite the lack of a formal national policy, the findings of this study show that the mandate for integrating entrepreneurship education into UAE undergraduate programmes is a top-down process and in line with national strategies such as Vision 2021. Although top-down policies

can facilitate enterprise, it may not be the best approach to individual skills for successful enterprise (Ahmad & Buchanan 2015). As shown in Chapter 4, several participants indicated that they were pleased with this mandate and with the fact that it was a top-down decision, primarily because they thought such an approach meant that higher education institutions took the implementation seriously. The mandate, which was launched in 2015, specifically recommends that all public and private higher education institutions in the UAE integrate innovation and entrepreneurship into their curricula. The initiative following this mandate launched in 2016 was the Stanford partnership in which a unified course was created and a professional development programme for faculty members took place. One of the strengths of the UAE's higher education system is that undergraduate education is free for all Emiratis. This high level of accessibility to higher education makes it easier for the government to develop entrepreneurial skills at this level, but clear and concise national policies should facilitate this mission.

5.2.2.2 Institutional Entrepreneurship Education Policies

Higher education institutions are under continuous pressure to prove that they are able to meet the needs of challenging and continuously changing economic and social conditions (Pinheiro, Wangenge-Ouma & Balbachevsky 2015; Schmitz et al. 2017). Despite the importance of higher education in achieving strategic social and economic goals, particularly entrepreneurship goals, the question remains as to whether faculty members at higher education institutions align their missions to developing students' entrepreneurial mindsets (Davey, Hannon & Penaluna 2016a). At the institutional level, the findings of the current study, based on the interviews and institutional documentary analysis, indicate that no higher education institutions in the study had a policy for integrating entrepreneurship education into undergraduate programmes. The lack of such policies may have a negative effect on the development of entrepreneurship education in higher education institutions (Weiming,

Chunyan & Xiaohua 2016). One of the problems that emerged in the present study was that most participants expressed the view that the entrepreneurship course content was not localised enough to meet the needs of Emirati students. The development of formal entrepreneurship education policies at both national and institutional levels may be helpful in ensuring that courses are tailored to the needs of undergraduate students and to the needs of the UAE economy.

5.2.3 Implementation of Entrepreneurship Education Across Undergraduate Disciplines in the UAE

5.2.3.1 Integration of Entrepreneurship Education into Undergraduate Programmes

Participants shared valuable information used to contextualise the study. Understanding the context was an important preliminary step for exploring the participants' views and experiences of the researched phenomenon. The findings demonstrate that a key aspect of the implementation of entrepreneurship education in the UAE had been the Stanford University partnership funded by the MoE, an initiative launched in 2016 led by the prime minister, MoE members, and Stanford University in the US. The interviews revealed that this partnership included curriculum development for a course that later became a mandatory general education requirement in many higher education institutions. The Stanford Partnership also included professional training for selected faculty members from UAE higher education institutions to prepare them for delivering the course at their respective schools. Members from the MoE and the prime minister thus launched the Stanford University partnership based on the principle of establishing a national project to promote entrepreneurship education and train entrepreneurship faculty members. One issue reported by participants was the intensity of the course and the fact that it was too complex for their students. Chakravarti (2017) in his study

found that students in the UAE thought that an entrepreneurship course would be widely accepted if such a course were simplified.

It is not uncommon for governments to develop and implement a unified general entrepreneurship education course with nationwide faculty-member training programmes as part of a national strategy for entrepreneurship education. For example, in 2003, China offered a similar project when government leaders recognised the importance of entrepreneurship education. In China, members of the MoE commenced a national training programme to train faculty members on how to teach entrepreneurship, create entrepreneurship courses, and help students move from the idea phase to the business phase (Weiming, Chunyan & Xiaohua 2016). More than 1,300 educators received training in the programme by 2012. Following the launch of another program in China in 2005, more than 4,000 faculty members had received training by 2012 (Weiming et al. 2016). Despite those initiatives, Weiming et al. (2016) reported that entrepreneurship education in China still lacked sound curriculum design, qualified faculty members, a monotonous model, and sufficient supporting mechanisms. The EU had a similar movement in 2006 to promote entrepreneurship. The 2006 Oslo Agenda, for instance, included various national strategies for the integration of entrepreneurship into national curricula and innovative faculty-member training methods (European Commission 2006). Similarly, the Malaysian government made entrepreneurship courses compulsory for all students in public universities (Ahmad & Buchanan 2015).

One question that arises, however, is whether faculty members at higher education institutions should have control over how they implement the policies, given that they understand their contexts and environments and know more about the availability and applicability of local resources. According to the ETM (Fayolle and Gailly 2008), the content of entrepreneurship

courses should enable students to identify the entrepreneurial situations that are consistent with their profiles. This implies learning about what motivates entrepreneurial behaviour. Contextualising and localising the course content may facilitate this process and make it easier for students. According to Berns and Erickson (2001):

> Contextual teaching and learning is a conception of teaching and learning that helps teachers relate subject matter content to real world situations; and motivates students to make connections between knowledge and its applications to their lives as family members, citizens, and workers and engage in the hard work that learning requires. (p. 2)

Localisation is defined as follows:

> [The] process of defining parts or components of the curriculum at community/local or school level, normally with the involvement of local staff, stakeholders and institutions, so as to address issues that are locally relevant and allow for more meaningful learning experiences. (UNESCO, 2020, para 1)

Culture may affect individuals' entrepreneurial values (Abaho, Salim & Akisimire 2013; Doğan 2016), intentions (Imran Sajjad et al. 2012; Liñán & Chen 2009), identity, and behavioural patterns (Doğan 2016). Therefore, successful practices in some countries are not necessarily useful in other countries. According to Kariv, Matlay, and Fayolle (2019), "Researchers and educators are driven to develop new educational forms to meet both entrepreneurial developments and the entrepreneurs' need for customised EE [entrepreneurship education]" (p. 3). These forms, according to the authors, include experiential learning, real-world stimulations, and programmes delivering transferable knowledge, skills, and abilities. The findings of the present study showed that educators did prioritise the contextualisation and localisation of the entrepreneurship course designed by Stanford University. Some indicated, however, that they found contextualising the course challenging because Stanford University faculty members had designed it in a different context to the UAE. These participants

mentioned that the faculty members from Stanford University designed the course with US-based ideas, principles, and case studies. For example, it is claimed that the individualistic culture of the US has dominated how the world views successful entrepreneurship (Doğan 2016). In contrast the UAE's culture is collectivist, which may be a reason for students not to accept entrepreneurship (Hameed et al. 2016). Entrepreneurship courses designed for Emirati student should therefore be able to effectively address these differences.

The unique place of Stanford University as a Silicon Valley affiliate, where many of the technology pioneers were founded and continue to be founded, usually by Stanford students and alumni, makes the context of the course irrelevant to the UAE. Although there have been initiatives to launch similar technology parks in the UAE, such as the Silicon Oasis Authority in Dubai to foster technology and entrepreneurship, it is as Wessner (2013) contended "generally recognized that it would be impossible to fully replicate the unique mix of individual genius, fortunate happenstance, and regional advantage that gave rise to today's Silicon Valley" (p. 219). Therefore, contextualising the course to include the not only the cultural but also social, and economic realities of Emirati students is important. Whereas several respondents reported some level of localisation during the designing phase, most thought the course needed a considerable amount of customisation to meet the needs of local students.

Granting higher education institutions more autonomy is seen to be the way forward for the UAE as presented in the National Higher Education Strategy 2017–2030. However, measures to achieve this goal have yet to be implemented. Islamic principles are the guiding values in the MoE's Strategic Plan 2017–2021, and, in the case of entrepreneurship education, there are certain Islamic teachings and restrictions on business practices (Oukil 2013) which are not present in other cultures. Although Islam encourages entrepreneurship (Faizal, Ridhwan &

Kalsom 2013), it is tied, like all other aspects of life, to the worship of Allah (God) and the reward for practising the Islamic stipulations (Faizal et al. 2014). For example, in a Hadith, Prophet Mohammad (Peace be upon him) had the following to say: “The honest, trustworthy merchant will be with the Prophets, siddeeqs [truthful people] and martyrs” (Islam Q&A para. 16). Although all entrepreneurs must act ethically, it is especially important for Muslim entrepreneurs to do so (Faizal et al. 2014). Halal (lawfulness) is a top priority in Islam and all economic functions are regulated with lawful (halal) and unlawful (haram) ways of earning money (Faizal, Ridhwan & Kalsom 2013).

Understanding cultural aspects, including those related to Islam, with an impact on Emirati students’ views of entrepreneurship, may be the first step in designing effective local entrepreneurship courses. Entrepreneurship educators should base entrepreneurship education not only on teaching a set of skills but on a holistic approach that includes students’ religious principles (Nikneshan, Saify & Sajjad 2015). Studies that explore the cultural underpinnings on entrepreneurial activity in the UAE are scarce (Facchini, Jaeck & Bouhaddioui 2020). Facchini, Jaeck and Bouhaddioui (2020) conducted a study that included students from UAEU and found out that student’s culture towards entrepreneurship is holistic and not hostile, which according to them could be the result of feal of failure. Addressing the cultural context of Emiratis students is vital in promoting entrepreneurship among them. Therefore, educators in higher education should prioritise the localisation of entrepreneurship education. This could be a challenging task, as many of the faculty members currently teaching entrepreneurship are expatriates who have different cultural and religious backgrounds to those of Emiratis. However, incorporating cultural principles in the early design stages of entrepreneurship courses and offering awareness sessions and training workshops for faculty members on how they can teach with these principles in mind is a possible solution.

5.2.3.2 Who is Teaching Entrepreneurship?

There is considerable debate in the literature on who should teach entrepreneurship courses (Henry 2013), but limited research has been conducted on the characteristics and backgrounds of entrepreneurship educators (Fayolle 2013). According to Fayolle (2013), entrepreneurship faculty members have the following requirements:

> [They] need to be experts in many different areas and notably in the fields of entrepreneurship and education. They need to understand the key concepts and theories from both entrepreneurship and education. They need to incorporate in their educational practice 'softer' entrepreneurial topics such as the entrepreneurial mindset, opportunity construction, work–life balance, managing emotions and learning from failure. They also need to demonstrate the usefulness of entrepreneurship theories and to regularly update their knowledge using entrepreneurship research. (p. 966)

In the present study, all participating entrepreneurship faculty members had received training through the Stanford University partnership, which did not require a specific academic background or experiences. They described their common experience (as described in Chapter 4) of undergoing the Stanford University partnership training and participating in the local community of practice as a result, and participating entrepreneurship faculty members were enthusiastic about the subject and their students' education. Faculty members in the study came from different educational backgrounds and had various work experiences, though some did have entrepreneurial backgrounds, either personally or based on their family's experience. Martin, McNally, and Kay (2013) contended that studying entrepreneurship-course faculty members' differences in skills and backgrounds is essential for understanding the effects of such courses on students.

Abreu et al. (2016) concluded that students benefited from academics with a broad range of experiences and academic backgrounds, with experience in problem-based entrepreneurial activities. The diversity of participants' backgrounds in the present study was therefore congruent with much of the entrepreneurship literature, which argues that educators do not require specific disciplinary knowledge to teach entrepreneurship (European Commission 2013). Since entrepreneurship is widely defined as a mindset, it might be worth considering developing and nurturing the entrepreneurial mindset of the faculty members teaching it over specific academic background or experiences.

However, some participants, particularly the educational policymakers and academic leaders, expressed concern about finding and recruiting qualified entrepreneurship faculty members and discussed the importance of recruiting those with real-world entrepreneurial experience. This is aligned with the argument of Kirby and Ibrahim (2013) that states that many entrepreneurship educators worldwide lack relevant entrepreneurial knowledge and skills, and with the recommendation of Martin, McNally, and Kay (2013) that future researchers should examine the skills and backgrounds of entrepreneurship course instructors to understand the effects of these variables on the teaching and learning of entrepreneurship.

Fayolle (2013) also argued that entrepreneurship education needs more qualified educators to perform the roles of both educators and researchers. Educators must possess a wide range of skills and knowledge deeply rooted in the field of entrepreneurship education, and it has been claimed that many of the best teachers of entrepreneurship are entrepreneurs themselves (Weiming, Chunyan & Xiaohua 2016). According to the European Commission (2008), "Students need to be taught by practitioners who have experience on which they can draw" (p. 63). For example, Gutierrez (2015) suggested that faculty members' entrepreneurial

experiences affect students' entrepreneurial intentions. Indeed, several participants in the current study expressed the view that entrepreneurial experiences were beneficial for students' entrepreneurial intentions.

Although participants in the present study acknowledged that recruiting full-time faculty members with entrepreneurial experience was not easy, they recognised that students greatly benefited from bringing in entrepreneurs as part-time faculty members, guest speakers, and mentors. According to the European Commission (2008), strategies to develop and enhance entrepreneurship faculty members' capabilities could include providing faculty members with sabbatical leave for enterprise, introducing them to mentors, and facilitating international educator exchanges. Training for faculty membership is also a suggested area to focus on. Aziz and Hariri (2018) recommended training entrepreneurship teachers to nurture their mindsets and equip them with pedagogical knowledge suitable for entrepreneurship courses. Bataineh and Maamar (2016) suggested partnerships with Western universities to train UAE entrepreneurship faculty members on modern and effective teaching methods. However, participants were concerned about the localisation of the knowledge they gained through such partnerships.

5.2.4 Views of Participants on the Implementation of Entrepreneurship Education tn the UAE

This section discusses other key findings from the interviews relating to the implementation of entrepreneurship education in undergraduate disciplines in the UAE. There is a gap in the literature on entrepreneurship education stakeholders' perspectives on higher education, especially those of entrepreneurship faculty members (Kilasi 2013; Olsen 2013). According to Hannon (2006), "The role of [the] entrepreneurship educator in [higher education] is

conceptually and pedagogically challenging" (p. 305). According to Gustafsson-Pesonen and Remes (2012), teachers' attitudes towards entrepreneurship are one of the most significant barriers to successful entrepreneurship education. Educators' different understanding, experiences, and beliefs may have an effect on curriculum design and teaching approaches (Hannon 2006). Fayolle (2013) also asserted that entrepreneurship educators need to reflect on their practices to advance the field of entrepreneurship education. Seven key themes emerged and are discussed in turn below.

5.2.4.1 Roles of Faculty Members and Students in the Teaching and Learning of Entrepreneurship

The research participants in this study argued that both faculty members and students have different roles and responsibilities when teaching and learning entrepreneurship, compared with many academic disciplines. They stressed, for example, that faculty members may need to act more as facilitators or mentors, to allow the students to take responsibility for their learning processes. In addition, students must adopt an open-minded, flexible approach to learning, accepting that there are often no right or wrong answers and the possibility of failure.

All participants highlighted the importance of moving away from traditional teaching methods such as lecturing, which they did not see as effective tools for entrepreneurship education. Those who were teaching entrepreneurship indicated a preference for experiential forms of learning over other teaching and learning strategies. They gave examples such as problem-based learning, project-based learning, case studies, real-world experience, and internships. In relation to the theoretical framework in which instructors base their selection of entrepreneurship teaching methods on whether the course objective was to teach *about*, *for*, or *through* entrepreneurship, participants were describing the "teaching for" entrepreneurship approach (Volkmann & Audretsch, 2017). If this approach is indeed being used within UAE universities in the ways suggested by the participants, it is likely that students are being taught

the types of skills required to become entrepreneurs, such as self-learning and critical thinking, and that faculty members are guiding and facilitating this process rather than, for example, providing textbook-based learning about business practices.

Fayolle and Gailly (2008) stressed the importance of involving entrepreneurs as role models in the classroom. Nearly every participant in this study also indicated the importance of involving role models in entrepreneurship education, as well as providing students with opportunities to connect with mentors, especially during the process of venture creation and incubation. Several participants discussed the importance of alumni entrepreneurs as role models for the students—specifically, the value of using successful Emirati entrepreneurs as role models and mentors. Hameed et al. argued that involving real-world entrepreneurs as adjunct faculty members to share their practical knowledge and inspire students. This was echoed by Bataineh and Mamaar (2016), who also suggested inviting UAE entrepreneurs to share their success stories with students. However, several participants mentioned that involving role models and mentors in entrepreneurship education was challenging, mainly due to the existence of complex administrative procedures for bringing guest speakers into classrooms. This demonstrates how important it is that institutions and the UAE government recognise the ways in which effective entrepreneurship education differs from formal academic education and takes steps to remove any potential barriers to this effectiveness, such as administrative complexities.

5.2.4.2 Is Entrepreneurship Education for Everyone?

The tension revealed in the literature about whether or not entrepreneurship is teachable did not manifest in the interviews, perhaps because all participants were actively implementing entrepreneurship education in their higher education institutions. In contrast with previous researchers, who have argued that entrepreneurship skills cannot be taught (e.g. Hindle, 2007), all interviewees expressed the view that entrepreneurship is teachable. They all also agreed that

entrepreneurship is cross-disciplinary and important for all undergraduate students irrespective of their major. However, the primary research and review of the literature indicated that entrepreneurship education was historically only taught within business schools at some UAE institutions. Several participants agreed that entrepreneurship education should be a mandatory requirement for all undergraduate students, and some suggested that students would benefit from learning about entrepreneurial skills at an earlier stage of their education. Integrating entrepreneurial learning in schools is a strategy followed implemented in several countries. In Brazil, for example, a special Entrepreneurial Pedagogy Methodology was designed to support entrepreneurial learning for ages 4 to 17 (UNCTAD 2012). EU member states such as Sweden, also integrate entrepreneurship education in their school system (Hoppe 2016).

According to Manimala and Thomas (2012), entrepreneurship education is no longer only about creating new ventures but is also concerned about the development of enterprising skills that can be used whether an individual is self-employed or employed by others. Adopting the approach of including entrepreneurship education at all educational levels and across disciplines is likely to provide the UAE with future increased entrepreneurial thinking and activity across all sectors of the economy, according to the findings of studies conducted internationally (European Commission 2009; Seikkula-Leino 2008; Volkmann & Audretsch 2017).

5.2.4.3 Role Models and Mentors in Entrepreneurship Education

The GEM (2017) maintained that access to positive role models and mentorship opportunities can inspire and encourage youth entrepreneurship. This study confirms this vital role of role models and mentors in encouraging and inspiring students to become entrepreneurs. The majority of participants mentioned that in teaching entrepreneurship it was important to involve various individuals such as local entrepreneurs, alumni, and other experts from the industry to

facilitate a learning environment for their students where they can be exposed to real-world experiences. This was of particular importance for students who showed interest in moving forward with their ideas and had the potential of transferring them to real businesses. Showcasing role models who students can access and relate to is recommended to promote an entrepreneurial mindset among students (Kelley, Singer & Herrington 2015). Fayolle and Gailly (2008) maintained that using entrepreneurs as role models in the classroom is an important dimension in teaching students to become entrepreneurial. Guerrero et al. (2012) argued that engaging role models is an important factor in developing entrepreneurial cultures in universities. Aziz and Hariri (2018) argued that in teaching entrepreneurship, at least one entrepreneur should be invited to share their experience with students. Similarly, Jabeen, Faisal, and Marios (2017) mentioned that providing students with opportunities to interact with role models is a strategic driver in encouraging an entrepreneurial mindset for UAE universities. Engagement of mentors and role models that relate to the context of students is essential because they represent the "true aspects of entrepreneurship" (European Commission 2008, p. 63). It has been concluded that in some cases, engaging entrepreneurs as role models had a greater influence on students' entrepreneurial activity than other support measures or even education and training (Guerrero, Urbano & Fayolle 2016).

5.2.4.4 Entrepreneurship Education and Experiential Learning

The literature on entrepreneurship education emphasises the importance of teaching methods such as active learning, experiential learning, learning by doing, and real-world pedagogies (Fayolle 2013). This study confirmed these aspects of the literature and the ELT aspect of the theoretical framework as participants affirmed that teaching entrepreneurship is best done through teaching methods that implement experiential learning. The study's participants discussed various experiential-learning pedagogies they believed helped their students learn entrepreneurial skills such as project-based learning, problem-based learning, team-based

learning, case studies, and business plans. The findings of this study, as discussed earlier, support a broad view of entrepreneurship which suggests encouraging students to develop an entrepreneurial mindset and entrepreneurial skills (Gibb & Hannon 2006). The broad view of entrepreneurship, as discussed in the literature review, encourages the development of pedagogies that are centred around real-world experience (Gibb & Hannon 2006).

The findings also indicated that participants' understanding of entrepreneurship education is closely related to the teaching philosophy where educators teach *for* entrepreneurship, rather than *about* or *through* entrepreneurship. Experiential learning, in this case, is seen as one of the most suitable teaching methods where students are encouraged to think creatively and to visualise opportunities (QAA 2018). Mwasalwiba (2010) concluded that most researchers questioned the use of traditional teaching methods in teaching entrepreneurship and affirmed that action-based approaches are more appropriate. A number of participants affirmed that although entrepreneurship is to be taught using experiential teaching methods, a certain amount of theoretical knowledge needs to be included. This is also echoed by Mwasalwiba (2010), who contended that theoretical knowledge should not be completely abandoned in entrepreneurship teaching. Academic theory, as Nakagawa et al. (2017) contended, "gives us rational and logical ways of thinking about technologies and management" (p. 37).

5.2.4.5 The Case of Emirati Students

The policy documents analysed for this study showed the importance of encouraging indigenous entrepreneurship for advancing the country's economy. All national and governmental policy documents included in this study showed the importance of building the youth's entrepreneurial capabilities for the development of national human capital and the advancement of a knowledge economy. UAE leaders see entrepreneurship as central for economic success, and they have embedded entrepreneurship as an area of focus and

development in all recent nationwide strategic plans. The interviews thus provided an opportunity to explore the participants' perceived effectiveness of providing entrepreneurship education to Emirati students.

Participants reported mixed thoughts and views about this. Several individuals described Emirati students as more confident and enthusiastic about entrepreneurial education than students from other nationalities. They attributed this, at least in part, to the ways in which these students obtained information through the courses about government funding programmes for Emirati entrepreneurs and were inspired by the courses to work towards implementing their business ideas. Most participants stressed that they encouraged their Emirati students to consider entrepreneurship as a career, believing that the quality and quantity of national entrepreneurs are likely to affect the country's level of economic growth. The UAE encourages entrepreneurship among Emiratis because of the belief that it is a major source of economic growth (Hameed et al. 2016). However, some participants expressed concern as to whether Emirati students would actively pursue their entrepreneurial goals in practice, due to the competing appeal of secure and financially lucrative UAE government jobs. This is a wider challenge facing the UAE, where the private sector does not provide similar compensation and benefits as government jobs, as discussed in the literature review of this study. As a result, Emiratis are likely to fear the consequences of instability when entering non-government sectors—either as an employee or as an entrepreneur—particularly during times of financial crisis. Some of the participants identified fear of failure as a barrier to learning entrepreneurial skills among these students and argued that many Emirati students need to shift their general mindset about entrepreneurship and learning in order to help overcome their fears. Tok (2020) found a similar pattern among Qatari citizens, who also presented risk-averse behaviour towards entrepreneurship, which is why many entrepreneurs in Qatar either come from a

business family or are part-time entrepreneurs with government jobs. Such risk-aversion is attributed, according to Tok (2020), to Qatar being a young country with no history of innovation and industrialisation, which is also the case for the UAE. According to Nabi, Walmsley, Liñán, Akhtar, and Neame (2018), entrepreneurship courses need to be designed to examine how students view failure and explore ways to make the students see risk as a positive opportunity rather than a negative threat. Hameed et al. (2016) proposed that the government in the UAE fund small student projects at school and higher education levels to encourage students to overcome a fear of failure and enhance their risk-taking propensity.

5.2.4.6 Creating an Entrepreneurial Environment in the Higher Education Institution

The National Innovation Strategy (2015) highlighted education a key enabler for the creation of an innovation environment in the UAE. Both the participants' responses and the selected national and governmental policy and strategy documents indicated the importance of creating university-based incubators to support entrepreneurship. University-based incubators are important for supporting students' start-ups and for building links with industry (Bikse, Lusena-Ezera, Rivza & Volkova 2016). These incubators can assess students in the early stages of business development, help them raise funding, and connect them with experts and entrepreneurs through training and mentoring (Miniaoui & Schilirò 2017). For example, one of the Stanford University business incubators is Launchpad. Each spring semester, the incubator works with 10 Stanford student ventures to incubate and launch 10 real businesses in 10 weeks. The incubator provides students access to experts such as lawyers, investors, and market experts as well as workspace in Silicon Valley. It also offers support during and after the programme. Sixty per cent of ventures launched through Launchpad are in business to this date (Hasso Plattner Institute of Design at Stanford University 2019). Many of the participants in the present study mentioned that incubators were important to support students interested in taking their ideas further and launching new ventures from those ideas. Indeed, it was found

that four of the higher education institutions in this study already had innovation and entrepreneurship centres or incubation spaces to provide students and alumni with mentorship, training and workshops, access to funding, working spaces and other resources.

The study's participants also highlighted a need for more collaboration between universities and industry, such as partnerships with venture capitalists, local incubators, and accelerators, and many stressed that it is critical to engage students in the world of entrepreneurship by establishing and maintaining industry connections. Ghafar (2020) stated that it is paramount for higher education institutions in the UAE to build industry partnerships to facilitate experiential-learning experiences for students. The National Higher Education Strategy document also discusses the importance of collaboration and indicates that university-industry partnerships are key performance indicators for innovation. There are numerous ways to foster and develop university-industry collaborations. University-based incubators must also receive support from industry alliances to provide students with the necessary opportunities for learning and development. Faculty members at higher education institutions must enhance their environments to encourage students' entrepreneurial activity. Faculty members can support an entrepreneurial culture through initiatives such as incubators.

5.2.4.7 Course Evaluations and Impact Assessments

Previous researchers have argued that the evaluation and impact assessments of entrepreneurship courses are complex (Lackéus 2015; Neck & Greene 2011). The findings from this study were consistent with the literature and showed that measuring the quality and impact of entrepreneurship education is not easy. Most of the studies that evaluate entrepreneurship education against entrepreneurial skills and attitudes acquired by students do so based on evaluating their intentions (Liñán et al. 2011). Though intentions are considered a precedent for future behaviour, they still cannot give an accurate measurement. Therefore,

longitudinal studies that measure graduates' entrepreneurial behaviour, whether they apply their entrepreneurial skills in starting their own firms, or the extent to which they are entrepreneurial as employees and citizens are necessary. Longitudinal studies are rare and are difficult to carry out (Henry 2014; Seikkula-Leino et al. 2013). Participants were ambivalent when they discussed how they evaluated their courses. Some participants mentioned comparing summative student assessment methods to learning outcomes and students' end-of-semester course evaluations. Others shared anecdotal accounts of how their students said that they liked and benefited from the course. Participants did not use a concrete method to measure the courses' impact on students' mindsets. Overall, there is no evidence from the interviews or documentary analysis of a clearly defined strategy or methods for evaluating and measuring the impact of entrepreneurship courses within the universities, the MoE, and other educational regulatory bodies in the UAE.

Fayolle et al. (2006) stated that capturing actual entrepreneurial behaviour when it occurs years after an individual has completed an entrepreneurship education programme is a common strategy for assessing entrepreneurship education. However, it is difficult to prove that entrepreneurial education caused the individual's successful entrepreneurial behaviour. There are other factors that should also be measured such as personal and environmental factors, parental role models, and prior entrepreneurial exposure among others (Fayolle & Gailly 2008). Several participants in the present study similarly stressed the challenge of measuring the long-term impacts of an entrepreneurship course and explained that this is in part because of the range of different components of the course as well as the difficulties of measuring these components, especially at the national level. Fayolle (2013) found minimal scholarship on the assessment and measurement of entrepreneurship education programmes and courses. One study, for example, followed three cohorts of high school students who participated in an

entrepreneurship training programme in Sweden for 16 years after their graduation from high school (Elert, Andersson & Wennberg 2015). The study found that the students' participation in the training programme increased their long-term probability of starting a firm. Fayolle (2013) also affirmed that the society in which entrepreneurship is embedded is the client of entrepreneurship education: therefore, "Entrepreneurship outcomes should adequately meet the social and economic needs of all the stakeholders involved (pupils, students, families, organizations and countries)" (p. 700). There is little evidence from the findings of the current study that the institutions or the government are actively evaluating the impact of entrepreneurship education on the needs of the UAE's society and economy, highlighting a gap which needs to be filled in order for future entrepreneurship education strategies to be most effectively targeted.

5.2.5 Triangulation of Findings

This section presents a how this study's findings compare to the findings from the literature.

Theme	Findings from the literature	Study Findings
The meaning of entrepreneurship	Two main definitions found in the literature: 1) entrepreneurship as a venture creation act and 2) entrepreneurship as a mindset	Most definitions were similar to the two definitions found in the literature
Entrepreneurship education policies	Generally, there is lack of entrepreneurship education policies even in many countries that support entrepreneurship. Lack of policies is especially evident in GCC and Arab countries	No formal policies exist in the UAE for entrepreneurship education
Integration of entrepreneurship education into undergraduate programmes	Countries such as EU member states and China nationally integrate entrepreneurship education into undergraduate programmes	The entrepreneurship course currently taught as part of a mandate to integrate entrepreneurship education in undergraduate programmes in the UAE was developed in the US, thus the importance of contexualisation and contexualisation was raised
Who is teaching entrepreneurship education?	No consensus in the literature on who should teach entrepreneurship, however, some	Policy makers and academic leaders expressed the need for

	scholars argue that there is need for more qualified entrepreneurship faculty	more qualified entrepreneurship faculty
Is entrepreneurship education for everyone?	There is a growing tendency towards embedding entrepreneurship into all levels of education and for all students	Consensus that all students should be exposed to entrepreneurship education at some point of their educational journey
Roles of faculty members and students in the teaching and learning of entrepreneurship	Role of entrepreneurship faculty is challenging	Entrepreneurship faculty is a mentor, coach and facilitator and Students are empowered to be more responsible for their learning
Importance of experiential learning	Experiential learning is prominent in the entrepreneurship education literature as one of the most successful strategies to teach it	Traditional teaching is not appropriate and experiential learning methods are the most suitable for teaching entrepreneurship
Role models and mentors in entrepreneurship education	Access to entrepreneur role models and mentors can have a positive impact on students	It is important to involve mentors and role models particularly Emiratis
The case of Emirati students	Scarce literature on designing entrepreneurship education for the specific characteristics of Emirati students	Entrepreneurship courses should take into consideration the social, economic and cultural factors that affect students' views and perceptions of entrepreneurship as a career option
Creating an entrepreneurial environment in the higher education institution	University based incubators and industry partnerships are important	More incubators and partnerships should be planned to promote entrepreneurship culture
Course evaluations and impact assessment	Evaluations and impact assessments for entrepreneurship courses are seen to be complex	There is are evaluations and impact assessments done yet at the national level for entrepreneurship education

Table 14: Comparison of study's results to findings from the literature

5.3 Summary

This chapter presents the study's findings. An analysis of the data from the documents and interviews served to answer the research questions. The study provides additional knowledge of the means of implementing entrepreneurship in UAE undergraduate programmes. The findings are consistent with the literature, indicating a need to incorporate entrepreneurship education into all UAE undergraduate programmes. The absence of national and institutional policies on entrepreneurship education could present a barrier to consistent and systematic implementation processes. The findings further indicate the importance of contextualising and

localising entrepreneurship course content to fit the needs of Emirati students. The next chapter will provide the conclusion, implications, recommendations, and limitations of this study.

Chapter 6: Conclusions and Implications

The aim of this study was to examine the views of higher education institutions' entrepreneurship faculty members, academic leaders and educational policymakers on entrepreneurship education implementation in the UAE's higher education institutions. A semi-structured interview protocol was the means to examine the perspectives and experiences of members of these populations. Document analysis helped to address the research questions and triangulate the findings from interviews. Achieving the study's objectives was possible through thematic data analysis of interviews and documents, which resulted in 10 themes. This chapter presents the study's conclusions and their implications, as well as recommendations and limitations.

6.1 Research Implications

The findings of this study provided policy and practical implications for the MoE and higher education institutions in the UAE.

6.1.1 Implications for Policy

Members of the MoE can lead the formulation of nationally recognised policies to support effective entrepreneurship education in higher education institutions. The creation of policies that promote a culture of entrepreneurship through education is necessary for the advancement of UAE citizens' entrepreneurial activity. Entrepreneurial-education policies are also vital for high-quality and suitable entrepreneurship programmes for undergraduate students in various disciplines. Members of the MoE should act as liaisons between the different stakeholders affected by these policies, such as members of government bodies, higher education institutions, the industry, and the general public. These stakeholders should participate in the planning phase to ensure they inform policies with their views and opinions (Babatunde 2016;

QAA 2018; UNCTAD 2012). For example, an inter-ministerial partnership was formed between the Ministry of Higher Education and Science, the Ministry of Culture, the MoE, and the Ministry of Business and Growth in Denmark in 2009 by establishing the Danish Foundation for Entrepreneurship – Young Enterprise. Through this partnership, the four ministries meet annually with the foundation and other stakeholders to discuss development in teaching entrepreneurship.

The UAE needs comprehensive national strategies to ensure consistent policy implementation. Key stakeholders—including members from higher education institutions, ministries and government organisations, all business sectors, and community and local entrepreneurs—should collaborate on the development of entrepreneurship education implementation strategies. Although there is currently a mandate to integrate entrepreneurship education in all undergraduate programmes in all higher education institutions in the UAE, there are still universities that do not follow the mandate. Further, there still need to be more guidelines for higher education institutions on best practices for implementing the integration of entrepreneurship education. This should not, however, imply not giving some level of autonomy to higher education institutions to ensure that the implementation also suits their specific needs.

Educators struggle with the lack of definitional clarity while trying to implement entrepreneurship education (Lackéus 2015). Clear and consistent entrepreneurship definitions in the context of the UAE are paramount for the development of policies. Key competencies and learning outcomes based on those entrepreneurship definitions can provide a foundation for faculty members at higher education institutions to design entrepreneurship programmes and curricula. The definition of entrepreneurship must be explicit and comprehensive and

include a clear list of entrepreneurial activities suitable for the UAE's unique cultural and social environment (Hamdan 2019). A clear definition of entrepreneurship could help to improve the alignment between entrepreneurship education in higher education institutions and national policies. In 2018, members of the MoE launched the National Program for Advanced Skills to promote 12 lifelong skills in youth through nationwide initiatives. The skills are scientific literacy, creativity, critical thinking and problem solving, leadership, empathy, tech literacy, financial literacy, collaboration, communication, adaptability, social and cultural awareness, and growth mindset (National Program for Advanced Skills 2018). Entrepreneurship skills could also be part of this framework as key lifelong skills learned by young people in the UAE.

Mainstreaming entrepreneurship education into all educational levels in schools and higher education institutions is a suggested MoE strategy for promoting entrepreneurship in young people. In the UK, entrepreneurs who identified essential factors for the development of future entrepreneurs stressed the importance of a strong entrepreneurship education foundation, starting in primary schools (Anderson et al. 2014). According to the European Commission (2013), "Reinforcing entrepreneurial education in schools, vocational education institutions and universities will have a positive impact on the entrepreneurial dynamism of our economies" (p. 4). Ideas about entrepreneurship can begin to form at an early age (UNCTAD 2012). Therefore, government leaders should foster entrepreneurial skills as early as possible in primary and second school curricula.

Government leaders might also formulate policies at the higher-education level to ensure systematic and consistent integration of entrepreneurship education into all undergraduate curricula. It will be necessary to adapt higher education institutions' visions, missions, objectives, and outcomes to make room for entrepreneurship as a key graduate competency.

Educators of effective entrepreneurship programmes should focus on the development of lifelong skills such as resilience, persistence, basic start-up knowledge, and other entrepreneurial expertise transferable to work settings (UNCTAD 2012).

6.1.2 Implications for Practice

6.1.2.1 Implication for Practice for the MoE

6.1.2.1.1 Entrepreneurship Education Department within the MoE

Members of the MoE could consider establishing a central unit or department in higher education institutions dedicated to the supervision of effective entrepreneurship education policies and strategies. Members of such a department can be responsible for formulating policies in collaboration with leaders in other ministries and government authorities, such as the MoE and the Ministry of Human Resources and Emiratisation (MOHRE). Members of the department could also work to unite all relevant stakeholders to gather input from their opinions, views, and experiences when formulating policies. Department members can also ensure the coherence and alignment of entrepreneurship education policies with other national policies and strategies (UNCTAD 2012). Members of this department could also be responsible for evaluating national-level entrepreneurship education initiatives and projects to assess their impact on the advancement of students' and graduates' entrepreneurial mindset and skills.

6.1.2.1.2 Launching Best-Practices Reward Schemes

The leaders of the MoE should consider establishing an award and recognition system for faculty members at higher education institutions who excel at infusing entrepreneurship education into their undergraduate programmes. In the US, for example, the US Association for Small Business and Entrepreneurship (2020) and the Global Consortium of Entrepreneurship Centres honour university and college educators who make an impact in entrepreneurship education (Kuratko & Morris 2018). Receiving recognition and awards for

teaching excellence has been found to be valuable in motivating teachers to continue high-quality instruction (Green & Nolan 2011). MoE leaders could introduce rewards for best practices in various areas, such as implementing entrepreneurship across disciplines, creating extracurricular activities to support students' entrepreneurial activities, and collaborating with external stakeholders to promote entrepreneurship. Those who have pioneered research projects that advance entrepreneurship education practices in the UAE could also receive rewards.

6.1.2.2 Implications for Practice in Higher Education Institutions

6.1.2.2.1 A cross-curriculum and cross-disciplinary approach to entrepreneurship education

The findings from this study indicate the need to adopt the view that entrepreneurship is a mindset. Educators should integrate entrepreneurship into the curricula of all disciplines in an attractive way for students, regardless of their past experiences and future career goals (Gibb 2011). Educators can embed entrepreneurial skills into all curricula, not only entrepreneurship-specific courses (Anderson et al. 2014; QAA 2018). Leaders from the European Commission (2012) stressed the importance of integrating entrepreneurial skills into the curricula of all disciplines:

> Member States should foster entrepreneurial skills through new and creative ways of teaching and learning from primary school onwards, alongside a focus from secondary to higher education on the opportunity of business creation as a career destination. Real world experience, through problem-based learning and enterprise links, should be embedded across all disciplines and tailored to all levels of education. All young people should benefit from at least one practical entrepreneurial experience before leaving compulsory education (p. 4).

Entrepreneurship is multidisciplinary in nature (Ahmad & Hoffman 2008; Ahmad & Seymour 2008; Janssen et al. 2008; Kobia & Sikalieh 2010; Leitch, Hill & Harrison 2010; Leon & Gorgievski 2007; Peneder 2009). Educators at higher education institutions should demonstrate

the multidisciplinary nature of entrepreneurship by offering the class as an interdisciplinary subject and not just a business subject (Kariv, Matlay & Fayolle 2019). According to Gibb (2007), "By adopting an interdisciplinary perspective, students would be better able to understand issues that are relevant to managing a venture as it moves through different stages within the entrepreneurial life-cycle" (p. 1). Educators at many universities around the world are moving away from teaching entrepreneurship only in business schools and are offering entrepreneurship education as a "mainstream education component" (Gibb 2011, p. 3). This is an effective approach because people use entrepreneurial skills in a wide variety of real-world disciplines and careers (West et al. 2009). Employees in government or private organisations draw upon entrepreneurship skills as well. After all, all people may face different complex and uncertain situations that may require entrepreneurial ways of thinking (Gibb 2002a). Kuratko and Morris (2018) argued that "entrepreneurship today is truly everywhere … across campuses, across communities, and across borders" (p. 11).

Faculty members at higher education institutions should adopt cross-disciplinary approaches for teaching and promoting entrepreneurship on campus. Blenker et al. (2008) affirmed that "the essence of the entrepreneur lies in his ability to go beyond the difficulties others have had in foreseeing the opportunity" (p. 56). Entrepreneurship course content should include basic and essential business and management skills, as well as personal skills such as initiative, flexibility and adaptability, coping with the unknown, risk-taking, and the ability to change (Blenker et al. 2008). Faculty at higher education institutions might succeed in implementing a cross-curricula and cross-disciplinary approach by establishing central units for entrepreneurial learning within their organisational structures. Members of entrepreneurial units could enforce policies and create, implement, and evaluate institution-wide entrepreneurship education strategies. One potential challenge to a cross-curricula and cross-

disciplinary entrepreneurship approach is resistance, especially from faculty members (Sultan 2017; Woollard 2010). West et al. (2009) argued that one way to overcome faculty-member resistance is to present entrepreneurship as a way for students to learn about the creation of general value and not only of economic wealth. Different faculty members can then interpret and incorporate value creation into curricula as they see fit. The entry of all stakeholders involved in the process is an essential success factor.

6.1.2.2.2 Contextualisation and Localisation of Entrepreneurship Programmes Content

One of the most important issues in higher education in the UAE is finding the balance between globalisation and localisation (Kamel 2014). Educators at higher education institutions face the challenge of preparing students to cope with global changes while also preserving their cultural values, beliefs, and national identities (Kamel 2014). The UAE's higher education institutes are heavily reliant on internalisation and policy borrowing from other courtiers, mainly Western ones. Internalisation and policy borrowing were initially ways to help higher education faculty members effectively and quickly prepare educated and skilled locals. However, these acts have not necessarily produced the desired outcomes, as challenges such as workforce nationalisation, the percentage of Emiratis working in the private sector, and graduate skills gaps persist (Badry 2019). Educators in higher education institutions must prioritise the contextualisation and localisation of entrepreneurship curricula. The process of making entrepreneurial learning more relevant and more meaningful for Emirati students is essential. Educators can facilitate contextualised teaching through experiential learning (Berns & Erickson 2001). The findings of this study show that participants who taught entrepreneurship education adopted experiential-learning strategies, such as project-based, problem-based, and team-based learning. Entrepreneurship educators can use experiential learning to facilitate the process of fully contextualising and localising the content.

6.1.2.2.3 Engaging Mentors and Role Models for Entrepreneurship

Connecting students with experienced entrepreneurs from the community is important for entrepreneurial learning (Hägg & Politis 2014). Kariv, Matlay, and Fayolle (2019) argued that entrepreneurship programmes should be enriched with a "blended teaching staff" that provides students with the benefit of learning from academic professors, entrepreneurs, government officials, and venture capitalists. According to Sikdar and Prakash Vel (2011), UAE entrepreneurs lack entrepreneurship mentoring. The findings of this study indicate that stakeholders strongly support involving entrepreneurs in teaching and mentoring students. The involvement of entrepreneurs as part-time or full-time faculty members, guest speakers, mentors, or coaches is valuable for students. Through industry and community partnerships, educators at higher education institutions can connect students with inspirational mentors who share valuable first-hand experiences. Faculty members at higher education institutions together with leaders from the MoE should try to resolve the complex administrative procedures required for inviting people to on-campus events and activities. The findings of this study showed that complicated administrative procedures are obstacles to entrepreneurial hands-on student learning.

6.1.2.2.4 Partnership with the Industry and the Community

The literature and the findings of this study showed that students best learn entrepreneurship experientially (Neck & Greene 2011; Politis 2005). Faculty members at higher education institutions can leverage support from the industry and community to provide more opportunities for real-world experiential entrepreneurial learning. Fostering partnerships with the industry (Etzkowitz 2013; Guerrero, Urbano, Fayolle, Klofsten & Mian 2016) and community (Gibb 2012; Gibb & Hannon 2006; Ratten 2017; Sultan 2017) should be strongly encouraged as part of the strategies for implementing entrepreneurship cultures in higher education institutions. Collaborative efforts include initiatives such as the following:

- Creating mentorship programmes for students in collaboration with experienced entrepreneurs from the industry, particularly local entrepreneurs.
- Inviting and involving entrepreneurs and experts from the industry, start-ups, businesses from different sectors, and financial-support establishments in designing entrepreneurship programmes and course curricula.
- Providing funding for students' entrepreneurial projects and initiatives through government and private funding bodies.
- Collaborating with operational incubators, accelerators, creator spaces, and labs that operate in the UAE.
- Designing internships programmes with the concept of "learning by doing" by collaborating with for-profit and not-for-profit ventures and start-ups.
- Collaborating with industry leaders in launching and funding competitions and awards specifically for undergraduate students.

Faculty members at higher education institutions can collaborate with the industry and the broader community in many ways. However, these partnerships must provide opportunities for students to learn and practice entrepreneurship.

6.2 Contributions of the Research

6.2.1 Contributions to the Literature

In the past, researchers on entrepreneurship education in UAE higher education institutions have mainly presented students' attitudes and intentions of entrepreneurship using quantitative approaches. This study provides knowledge through a qualitative exploration of the perspectives of underrepresented stakeholders in the literature other than students. The qualitative approach was appropriate for an in-depth investigation of stakeholders' perspectives on the reality of entrepreneurship education integration into undergraduate

programmes as well as of stakeholders' views on the challenges and opportunities of entrepreneurship education. The field requires more qualitative researchers to contribute to theoretical and practical knowledge.

This study was also valuable because it confirms the important role higher education plays in equipping students with essential skills and in advancing the economy. Building on the HCT, entrepreneurship education is seen to be effective at equipping students with the required entrepreneurial knowledge skills, and attitudes. This was confirmed through both interviews and documentary analysis as it was evident that study participants, as well as the creators of the analysis documents, view entrepreneurship education as an important component that needs to be integrated at all educational levels. Entrepreneurial knowledge skills and attitudes are seen as precedents for increasing both the quality and quantity of entrepreneurs, who are expected to play a key role in economic development and the transition to knowledge economies. This was also confirmed through this study by participants, who stressed the importance of preparing Emiratis to play an important role in economic growth and was also evident in analysed documents, especially the national policy and strategy documents. The study also confirms the importance of the multidisciplinary nature of entrepreneurship education and the need to infuse entrepreneurship into the curricula of all undergraduate programmes. Therefore, integrating entrepreneurship learning into higher education for all students is one of the strategies the UAE can develop to ensure the development of entrepreneurial human capital among young Emiratis.

6.2.2 Theoretical Contributions

The study was theoretically based on the ETM, used to explain the different aspects of designing entrepreneurship education courses within higher education institutions. The *what*

or *content* part of the model requires further explanation. This study is a contribution to the theory and shows the importance of localising entrepreneurship education content for successful and effective entrepreneurial learning. The findings from the study show how faculty members used content localisation to make the entrepreneurship courses appealing and effective for Emirati students. Certain content and knowledge are suitable for some countries but not appropriate in other contexts. The suitability of certain content is particularly important to highlight, as the entrepreneurship education movement in the UAE is receiving significant attention from the highest levels of the government.

6.2.3 Methodological Contributions

The qualitative design of this study was the means for understanding participants' views and experiences in ways not possible with other research designs. There is a need for more qualitative research for an in-depth understanding of the effect of cultural values and norms in entrepreneurship education on Emirati students. Data collection methods such as interviews, focus groups, and documentary analysis are ideas for future research in the field.

6.3 Limitations of the Research

One of the limitations of this study is the number of interviews conducted. The initial plan was to perform at least 25 interviews of faculty members, academic leaders, and educational policymakers, a goal that went unmet for several reasons. One reason was a limited research time frame because the data came from higher education institutions in different emirates. Following approval from the Institutional Research Board at the British University in Dubai, there was a gap of about one month before I could contact higher education institutions' faculty members for participant access and recruitment, as it was summer break and the target individuals were on vacation. Upon initiation of the process in late August 2019, it was a busy time at those higher education institutions, which resulted in delays in obtaining approvals.

During the access and recruitment process, emails were sent to 10 UAE higher education institutions to request participation. Similar emails were also sent to members of the MoE, the MOHRE, KHDA, and the NQA for recommendations of relevant individuals for interviews as well as the provision of several requested policy documents. Seven faculty members at higher education institutions responded with initial approval and granted access to the satisfaction of their specific Institutional Research Board ethics applications.

After I had submitted the ethical clearance applications to those higher education institutions, sent many follow-up emails, and scheduled calls and face-to-face meetings, five of the higher education institutions provided approval to proceed with participant recruitment and data collection.

The first ethics approval came in late September 2019. Most participants asked for contact at later dates because they were busy at the start of the new academic year. As a result, the first interview did not occur until mid-October 2019. As a full-time faculty member myself, it was challenging to schedule and conduct interviews while also fulfilling teaching and other duties. Therefore, some interviews took place after working hours to suit the schedules of both the interviewees and me.

Although all of the study's participants were comfortable with audio-recording their interviews, one higher education institution indicated concern about such a practice. After meeting with an ethics approval committee member and providing assurance of participant confidentiality and anonymity during the research process, the committee members still expressed concern and hesitation about participation. I decided not to include this higher

education institution in the study as I believed taking notes during interviews was not sufficient for producing data of sufficient quality.

The fact that some higher education institutions had few faculty members involved in entrepreneurship education integration affected the number of study participants. One university, for example, had only one faculty member teaching the subject. The faculty member showed interest in participating but was unreachable despite multiple reminders and phone calls. Recruiting and scheduling interviews with policymakers was more challenging due to their busy schedules. I was unable to procure interviews with relevant individuals from the MOHRE and NQA, despite regular follow-ups by email, telephone, and in-person visits. However, documents were available through their websites, which I included in the documentary analysis of this study.

Another limitation was the inclusion of only faculty members, academic leaders, and educational policymakers as participants. The study could have also involved other stakeholders, such as members of on-campus entrepreneurship centres, incubator managers, career and alumni relations professionals, students, and alumni. The inclusion of a wider sample population could have provided more holistic and inclusive perspectives. Widening the target population to include higher education institutions with less than 50% Emirati students may have added to the scope of the study's findings as well. The number of data collection methods used in this study also presented limitations. Researchers strengthen qualitative studies through the triangulation of data-collection methods. Additional qualitative methods such as focus groups, observations, and reflective writing could have been used to improve data corroboration and triangulation. As a result of the previously discussed limitations, it was not conclusive whether or not this study's findings were generalisable. In Chapter 3, I related

that it was not my intention to generalise the findings but instead to provide an in-depth understanding and analysis of participants' views and experiences. However, this study also lent insight into the implementation of entrepreneurship education in the UAE's higher education institutions. The meaningful findings of this study serve as a foundation for understanding different ways to improve the process of entrepreneurship education implementation.

6.4 Scope of Future Research

Future researchers may build on the findings of this study in several ways. First, scholars can conduct quantitative impact studies to measure how students and alumni view and assess the current entrepreneurship education offerings at their institutions. Researchers could measure students' responses to the objectives, content, faculty-member experiences and backgrounds, and pedagogies and teaching methods of entrepreneurship programmes and courses. Scholars could also measure students' satisfaction with extracurricular activities and other institutional support services to enhance their entrepreneurial learning. Qualitatively exploring students' views and experiences is another way to obtain in-depth accounts and a more well-rounded understanding.

Second, future researchers can build on the findings of this study by surveying other stakeholders, such as industry representatives, for their opinions and perspectives on the effectiveness of entrepreneurship education in the UAE. Stakeholders such as professionals working in incubators, accelerators, and funding establishments could provide a better understanding of how to improve entrepreneurship education so that Emirati students feel inspired to embark on entrepreneurial endeavours that require strong skillsets, such as participating in idea-pitching competitions or fundraising activities.

Third, more scholars should explore the effect of content contextualisation and localisation on the effectiveness of entrepreneurship education for Emirati students. Understanding how to make learning more meaningful to Emirati students is a way to contribute to an impactful entrepreneurship programme and course development. Future research can involve students themselves and survey them both quantitatively and qualitatively about approaches that can better support their learning in context.

6.5 Concluding Remarks

Countries encourage higher education in their socio-economic development (Gibb & Hannon 2006). Government leaders in the UAE consider general and higher education key for preparing and developing citizens (human capital) capable of becoming key players in the implementation of the country's future growth and development strategies (UAE Sustainable Development Goals 2030 2018). There is limited research on entrepreneurship education despite increased attention on the importance of entrepreneurship education for the UAE's social and economic development. In particular, the impact of implementing entrepreneurship education in higher education institutions on stakeholders' views, opinions, and experiences was previously unexplored. This study provided insight into the experiences of entrepreneurship faculty members, academic leaders, and education policymakers who were part of the entrepreneurship education implementation process. The findings from this study were in alignment with the theoretical framework of how and why entrepreneurship education should be available in all UAE undergraduate disciplines. The participants supported the view that entrepreneurship education is both a mindset and a skill set that all students in undergraduate programmes should be exposed to, a view that was apparent in the stipulations of the UAE's national strategies.

The findings also indicated how faculty members at higher education institutions could support entrepreneurship and the creation of entrepreneurial cultures. The faculty-member participants reported the potential for further developing and improving their entrepreneurship courses and programmes. Higher education faculty members could improve on-campus support systems and focus on industry and community partnerships to strengthen the already robust entrepreneurial ecosystem in the UAE with improved entrepreneurship education implementation. This study provided what could be considered the first step towards a more in-depth understanding of what entrepreneurship education in higher education might look like in the UAE. Further investigation into stakeholders' experiences is recommended for a better understanding of the entrepreneurship education process.

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Appendices

Appendix A: Entrepreneurship Faculty Interview Protocol

Introductory Protocol

First of all, thank you for agreeing to participate in this research project. You have been selected because you have been identified as someone who has a great deal to share about entrepreneurship education at university level. The study focuses on the improvement of implementing entrepreneurship education, with particular interest in understanding how teaching faculty in different academic programs view this implementation, and whether we can begin to share what we know about making a difference in undergraduate education. The study does not aim to evaluate your techniques or experiences. Rather, I am trying to learn more about faculty practices that help improve entrepreneurship education implementation in UAE universities.

The interview is planned to last no longer than one hour. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete the line of questioning. As a reminder, I would like to note that you have agreed to audio-record the interview by signing the consent form. The recording will start now.

Demographic data
Name: _____
Gender: _____
Age: _____
Nationality: _____

Background questions
1. What motivated you to become an entrepreneurship education faculty?
2. Tell me about your professional journey? What type of training did you receive for teaching in higher education?
3. What type of training did you receive for teaching entrepreneurship courses?

Research Question	Interview Questions
Q1: What is the entrepreneurship education policy in the UAE?	1. Are there any national policies for EE (that you are aware of)? 2. Are there any policies in your university for EE (that you are aware of)? a. Do you use any particular strategies to achieve alignment between the national entrepreneurship education policy and the policy of your university and your specific course/s?
Q2: How do entrepreneurship faculty understand entrepreneurship education?	1. What does entrepreneurship mean in your opinion? 2. Do you think of entrepreneurship education as an academic discipline? 3. In your opinion, what do entrepreneurs need to know to be successful? 4. Who do you think may benefits from entrepreneurship education? 5. What do you think is the value of entrepreneurship education for students?

Q3: What are entrepreneurship education faculty's views of entrepreneurship education implementation across undergraduate disciplines in UAE's higher education?	1. What is your view about including entrepreneurship education in all undergraduate programmes? a. Is entrepreneurship education currently being implemented across disciplines in your university? b. Is there any value to implementing entrepreneurship education across disciplines in you view? 2. What do you think is considered "good teaching" for entrepreneurship courses? 3. Can you share the main objectives/goals of the entrepreneurship course/s you teach? a. Can you share how these objectives/goals are designed? 4. Did you design the course content? Yes/No a. if yes, could you share with me the process of designing the course? b. if the course is not designed by you, could you share with me what you would consider as essential when designing? 5. How do you get to know your students? What do you do to understand their backgrounds, challenges, aspirations, etc.? a. What do you do to ensure the course responds to the specific needs of the students enrolled in it? 6. How do the assessments used in the course compare to other courses? Is there anything different/unique about entrepreneurship courses assessment? 7. How do you know you have achieved the goals/objectives of the course? 8. Does your department have a policy/guideline for reviewing courses? Do you review your courses? How often? 9. Are there any practical activities (internal/external) that you use to develop students' entrepreneurship abilities? 10. Are students rewarded for participating in extra-curricular entrepreneurial activities? Can you give examples of those activities and rewards? 11. Do you teach both Emirati and non-Emirati students? a. Do you think that teaching entrepreneurship to Emirati students is different from teaching it to students from other nationalities? How? 12. Are there any challenges/anything you would improve? Why? How? 13. What opportunities do you see your department/university could utilize to help in the development of entrepreneurship education, especially when it comes to Emirati students?
Is there anything you would like to add? Any question you expected me to ask but I did not?	

Appendix B: Academic Leaders Interview Protocol

Introductory Protocol

First of all, thank you for agreeing to participate in this research project. You have been selected because you have been identified as someone who has a great deal to share about entrepreneurship education at university level. The study focuses on the improvement of implementing entrepreneurship education, with particular interest in understanding how academic leaders in different academic programs view this implementation, and whether we can begin to share what we know about making a difference in undergraduate education. The study does not aim to evaluate your techniques or experiences. Rather, I am trying to learn more about academic leaders' practices that help improve entrepreneurship education implementation in UAE universities.

The interview is planned to last no longer than one hour. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete the line of questioning. As a reminder, I would like to note that you have agreed to audio-record the interview by signing the consent form. The recording will start now.

Demographic data

Name: _____

Gender: _____

Age: _____

Nationality: _____

Research Question	Interview Questions
Q1: What is the entrepreneurship education policy in the UAE?	3. Are there any national policies for EE (that you are aware of)? 4. Are there any policies in your university for EE (that you are aware of)? a. Do you use any particular strategies to achieve alignment between the national entrepreneurship education policy and the policy of your university and your specific department course/s, strategies?
Q2: How do university academic leaders understand entrepreneurship education?	6. What does entrepreneurship mean in your opinion? 7. Do you think of entrepreneurship education as an academic discipline? 8. In your opinion, what do entrepreneurs need to know to be successful? 9. Who do you think may benefits from entrepreneurship education? 10. What do you think is the value of entrepreneurship education for students?
Q3: What are university academic leaders' views of entrepreneurship education implementation across undergraduate disciplines in UAE's higher education?	14. What is your view about including entrepreneurship education in all undergraduate programmes? a. Is entrepreneurship education currently being implemented across disciplines in your university? b. Is there any value to implementing entrepreneurship education across disciplines in you view? 15. What do you think is considered "good teaching" for entrepreneurship courses? 16. Can you share the main objectives/goals of the entrepreneurship course/s in your department/college? i. Can you share how these objectives/goals are designed?

	17. Could you share with me the process of designing the course? Who designs them/how is content decided? 18. Are there any strategies you use to ensure that entrepreneurship courses in your department/college respond to the specific needs of the students enrolled in them? 19. How do the assessments used in the course compare to other courses? Is there anything different/unique about entrepreneurship courses assessment? 20. How do you know that the goals/objectives of the entrepreneurship courses in your department/college have been achieved? 21. Does your department have a policy/guideline for reviewing courses? Do you review your courses? How often? 22. Are there any practical activities (internal/external) that you use to develop students' entrepreneurship abilities? 23. Are students rewarded for participating in extra-curricular entrepreneurial activities? Can you give examples of those activities and rewards? 24. Having a mix of Emirati and non-Emirati students in your department/college, do you think that Emirati students respond differently to entrepreneurship courses from students from other nationalities? How? 25. Are there any challenges/anything you would improve? Why? How? 26. What opportunities do you see your department/university could utilize to help in the development of entrepreneurship education, especially when it comes to Emirati students?
Is there anything you would like to add? Any question you expected me to ask but I did not?	

Appendix C: Policy Makers Interview Protocol

Demographic data
Name: _____
Gender: _____
Age: _____
Nationality: _____

Research Question	Interview Questions
Q1: What is the entrepreneurship education policy in the UAE?	5. What national policies regarding entrepreneurship education are aware of in the UAE?
Q2: How do policymakers understand entrepreneurship education?	11. What is entrepreneurship? How would you define it? 12. Do you think of entrepreneurship education as an academic discipline? 13. What do entrepreneurs need to know to be successful? 14. Who do you think benefits from entrepreneurship education? 15. What do you think the value of entrepreneurship education is for students?
Q3: What are policymakers' views of entrepreneurship education implementation across undergraduate disciplines in UAE's higher education?	27. Is entrepreneurship education currently being implemented across disciplines in universities? 28. Do you think it is being done successfully? Why? Why not? 29. How are the policies regarding entrepreneurship education designed? Who is involved? Why? 30. How are the policies communicated to the concerned parties in universities? 31. What do you think should be the main objectives/goals of the entrepreneurship course/s? 32. What is expected from universities in terms of integrating entrepreneurship education? 33. What is done to ensure universities incorporate entrepreneurship education policies in their plans and strategies? 34. How /when do you know you that entrepreneurship education policies have achieved their goal/s? 35. Do you feel that Emirati students respond differently to entrepreneurship education than students from other nationalities? How? 36. Are there any challenges/anything you would improve? Why? How? 37. What opportunities do you see universities could utilize to help in the development of entrepreneurship education, especially when it comes to Emirati students?
Is there anything you would like to add? Any question you expected me to ask but I did not?	

Appendix D: Informed Consent (Faculty)

Informed Consent Form

My name is Reem Thani (MEd), a doctoral candidate at the British University in Dubai. I would like to invite you to participate in a research project about entrepreneurship education in higher education in the UAE.

Research Purpose

The purpose of my doctoral thesis will be to investigate entrepreneurship faculty members, university academic leaders, and education policymakers views on the implementation of entrepreneurship education in UAE universities.

Research Method

If you decide to participate, you will also be asked to email a copy of your CV, syllabus and lesson plans for the entrepreneurship course/s you currently teach. You will then be invited to participate in an interview that will last between 30 to 45 minutes. Your answers will be included with the other research participants and returned to you for your comments. A copy of the analysed data and results will be sent too for member checking.

Your Professional Opinion

You will be asked for your professional opinion about entrepreneurship education and its implementation at your institution. The research results will be shared with the research participants. The research results may be beneficial to research participants in many ways such as an improved understanding of how to integrate entrepreneurship education across disciplines in higher education.

Confidentiality - Anonymity - Security

If you decide to participate, your identity as a participant in this study, and any other personal information gathered about you during the study will be kept strictly confidential and will never be made public. All data containing personal information from which you could be identified will be stored in a locked file cabinet in my office during the study. Electronic data will be password protected. When the study is completed, I will destroy all data containing personal information. The published results of the study will contain analysed data from which no individual participant can be identified.

Okay To Say No

You are being asked to make a voluntary decision whether or not to participate in this study. Please read and think about the information given above. If there is any part of the information you do not understand, please ask me to explain it. You will always be free to discontinue participation at any time, and all data collected up to that time as a result of your partial participation will be destroyed without being used in the study. If you decide to participate, please provide your signature as indicated below. Your signature below indicates that you have read, considered, and understood the information provided above, and that you have decided to participate.

Signature of Participant Date

Print Name:

Contact Information

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A copy of this consent form has been given to you for your records and reference.

Appendix E: Sample Interview Transcript (Faculty Member)

Interviewer
So, what motivated you to become an entrepreneurship education faculty?

Responder
Oh, okay, yeah, sure. So, for me, I think it's... my background is in helping in student services. So, I've been working in career services and student services for maybe 10 years. And I've seen the change that's sort of going on in economy. I worked in South Africa and in the US. So, economies are more knowledge based and entrepreneurial oriented. So, I think this preparation that UAE is doing sort of nationally is something that's very innovative and kind of forward thinking, and so I thought it would be cool to be involved in that.

Interviewer
Okay, good. Tell me a little bit about your professional journey. What type of training did you receive for teaching in higher education?

Responder
Okay, yeah, so first I have a master's degree in student development, but what my focus was on was on career development, career education. And so that's what my master's degree is in. And my doctorate is in the same thing, but my studies are really focused on international faculty and student development in their success, so my master's and doctorate are in higher education administration. So, that's kind of where I've done a lot of my work in. And professionally, like I said, I've been working in career development and academic development of college students for maybe 15 years now. So, for me the entrepreneurship education component just connects with what I've already been doing. Now, as far as entrepreneurship specifically, I've got my training in innovation entrepreneurship in the Design School at Stanford University.

Interviewer
Okay, okay. So, yeah, that was my next question. I was going to ask about what type of training did you receive for teaching entrepreneurship courses. So, that was in the Stanford University. Can you tell me more about it?

Responder
Yeah, so it's a certification. I'm a trainer for innovation and entrepreneurship curriculum. So, when the UAE designed... when they partnered with Stanford's to design their curriculum, they picked the faculty who have been involved in this entrepreneurship space, education space, and to sort of spearhead some of the help with designing the curriculum, and it was designed to implement that with the faculty across the UAE. In that first cohort of faculty, they chose to work with Stanford auditors. So, Stanford has trained us in new ways of innovation and entrepreneurship.

Interviewer
Okay. Is there any follow-up that you need to do from time to time to just update your knowledge or something like that?

Responder
Yeah, yeah, for sure, I mean that's really what... so, I have been through some follow-up trainings two summers in a row. Yeah, so I was at Stanford for the second time to get some training, and then Stanford came to the UAE and did some follow-up training for this trainer certificate, and then, of course, they did all my online program, so all of this was really taking courses through Stanford online.

Interviewer
Okay. Good. Are you aware of any policies, national policies that are related to entrepreneurship education?

Responder
Yeah, so, I know that in 2015 when we had the initial entrepreneurship education with Sheikh Mohammed offered, and this has all sort of been about this initiative. And so, I mean, I was involved in that part of it, that was done at the national level, but I was at the first meeting that they had. It was at the Radisson hotel in Dubai. We had a meeting initially to sort of talk about this and then UAEU was spearheading the project; they were sort of in charge of it.

Interviewer
Who was that?

Responder
UAEU.

Responder
UAEU. Ah, okay. So, it was the UAE University.

Responder
Yes, the UAE University, but the ministry was sort of in charge of it, but they had bit and processes from UAEU... I don't remember the details but Sheikh Mohammed, actually UAEU was sort of spearheading the project. And then the following January with had a big meeting with Sheikh Mohammed and Sheikh Hamdan, and they got us started with it.

Interviewer
Okay. And at the university level, what are the policies that you are aware of regarding entrepreneurship education, whether at the university level in general or at the college level?

Responder
Yeah, so because this is a government mandate from the PMO in the education, both the university and college have sort of set some goals for entrepreneurship education. So, some of

those goals are promoting entrepreneurship awareness in students, and so we do that through the course in university, college, but also in each of the colleges they were supposed to be designing a second entrepreneurship innovation course. So, our course in the UAE would be the first course with introduction to fundamental innovation and entrepreneurship. Then each of the colleges would then in turn have the second entrepreneurship course where they can sort of learn about entrepreneurship and innovation, but kind of specific to their discipline. I don't know if that's been implemented, the second stage, but the first stage has been implemented and that's in general education.

Responder
Yes, and so this has fundamentals of innovation and entrepreneurship which sort of are talking about the basics of understanding to sort of bring an awareness of it. Now, we've also collaborated with the new Innovation and Entrepreneurship Centre. That's one of the Colleges of Business with Dr. […….] in business. We work to him as they are establishing an incubator. So, we help the students that are connected to the incubator and Innovation Centre, so they can develop their ideas further. So, the ideas that they come up with during the first course, we pick some of their projects from the first course and we send them to the Innovation Centre where then they are provided with incubation phase.

Interviewer
In general education, yes. Okay.

Interviewer
So, now I want to know what your views or what your understanding of entrepreneurship is. What would you say entrepreneurship means, in your opinion?

Responder
Entrepreneurship is essentially leadership. It's leadership in implementing an idea or strategy. So, that's to me what entrepreneurship is. It's being a leader who can implement a certain type of idea. It doesn't have to always be an original idea, but entrepreneurship is a leader who can implement strategies and programs, and goals. That's what an entrepreneur is.

Interviewer
Okay, good. And in your opinion, what do entrepreneurs need to know to be successful?

Responder
I'm sorry. One more time. Could you please repeat the question?

Interviewer
So, in your opinion, what do entrepreneurs need to know to become successful?

Responder
Oh, so what do you need to do to become an entrepreneur?

Interviewer
Yes, to become a successful entrepreneur?

Responder
Oh, okay. I just want to make sure I understand - what are the common attributes of a successful entrepreneur, what skills they have or how do you become a successful entrepreneur?

Interviewer
How do you become a successful entrepreneur? Did you hear that?

Responder
You know I didn't.

Interviewer
So, it's how do you become a successful entrepreneur?

Responder
Oh, how do you become. I think there's a lot of pieces to that puzzle. It's a complex sort of thing because it's not only having a good idea, but that's one of the things you need to have. You need to have an eye to that people, users or potential users need. So, it has to be a good idea, but you also have to be able to find creative ways to make that idea reality. And so, for me it's not just having an idea, but knowing how to make that idea reality and then more importantly getting feedback to make that idea better and develop it. To me that's the mark of a lot of good entrepreneurs that have a good idea, they are able to implement that idea and they are able to continue to improve the idea by talking to their customer.

Interviewer
Okay, good. And what do you think is the value of entrepreneurship education to students?

Responder
I think before I got involved in entrepreneurship education, I was doing traditional career education where most of the work was about finding a job with somebody, a company, so that was my work before. But what I found was that was really limiting students when you just say, "Oh, just go work for a company." Right? It pushes them into one direction. What I love about entrepreneurship education is that you develop a skill set, you develop skills to be successful in life in general, not just working for a company, not just making money, but skills that will also help to improve society. And to me that's what I love about this work is that it gives you skills to be successful at your home, outside of your home, at work, in the community, it's good for innovation and growth.

Interviewer
Okay. And would you say that all the students benefit from this type of education or only some students? Who are those students who benefit from entrepreneurship education?

Responder
So, to answer the first part, I think all students can benefit because everybody needs to develop their leadership capacity. So, for me, every student can benefit. Do all of them do? Of course, not. Some of them, they just view it as a general education course. So, they're not really into it because all they want to do, "Hey, I want to be an international relations major, so I want to study international relations." The class is not on international relations, so not all the students benefit from it, but it's true that it doesn't matter what your major is; if you go work for a company, if you go work for a government, or go start your own business, all of these skills can be useful to anybody.

Interviewer
Do you think of entrepreneurship as an academic discipline?

Responder
Absolutely, absolutely. I mean, I don't think we quite have a... you know like people want to put it in business, or people want to put it in [name of a specific department]. I believe that entrepreneurship is a discipline across a variety of areas of learning, so it could be applied in education. So, it is a discipline, but it's not one that we can categorize going in one faculty because it goes across many, many disciplines.

Interviewer
So, this leads to the next question. What is your view about including entrepreneurship education in all undergraduate programs? So, we can say it's implemented across disciplines in universities, right?

Responder
Yeah, yeah.

Interviewer
So, what do you think of that?

Responder
Again, I will admit about education that some people do not value it. They think it's not worth it, but for me I think to have to be able to be developed holistically, and so for me I think general education is important. Education is important in that you're developing skills. So, entrepreneurship provides you with skills to make you successful in life, so absolutely it should be because I believe that general education should be skills-based courses. And so, for me I think they should be aimed at general education and every student should take them because it will help them to progress no matter what they want to study or do with their life.

Interviewer
Okay, good. And what do you think is considered good teaching for entrepreneurship course?

Responder
Good teaching? I think designed teaching; a critical design teaching should be a critical part of entrepreneurship education.

Interviewer
Okay.

Responder
Design thinking is a pedagouge; it's a pedagouge that helps students to interact with all the people they want to create for. I don't think you should be trying to create something with people you don't know, you don't interact with. You don't do that. And so, for me entrepreneurship education should be interactive and engaging to connect to the users that you want to create for. That's what it should be.

Interviewer
Okay, good. And you mentioned the partnership with the Stanford University. Did they design the course or was it designed by the university itself?

Responder
It was a combination of the two. So, Stanford had some of the contents, and then they localized the content here to make it relevant for you. So, we've kind of taken the foundation of what was created, but with Stanford then we've kind of localized it. Now, Stanford is the first co-author faculty that gave the information on how to develop the course, so we have been involved in the development of the course as well.

Interviewer
Okay. Yes, you want to add something?

Responder
Yeah, yeah, also... but even after we helped with designing the course, we still had to sort of personalize it for the university that we work in. So, we modify some things that UAE will, so there are still some modifications to develop it.

Interviewer
Okay. Okay, good. And now as a faculty, how do you get to know your students who are taking this course? What do you do to understand their backgrounds and challenges, aspirations and so on?

Responder
Yeah, so... I mean there are a few ways. We do a lot of activity in class, entrepreneurship activities. You know, we call it Souq; to get the class kind of started we have activities. In these activities we try to understand the students better. Tell me what your passions and interests are, what excites you about things that are going on in the UAE, you know, try to get a feel for how to take their interests and passions, and build that into our content for the class.

Interviewer
Yes, and when you are teaching the course, how do you make sure that you actually respond to those needs, to those specific characteristics of your students?

Responder
This take some skills. What I do is when we talk about what they're excited about, what they ditch, I will modify my lecture in the activities quest; I will modify those, and so, for example, some of our students they tell me, oh, they love to, for example, they're really into in the animal welfare, so we'll try to promote them to try innovative entrepreneurship ideas around that passion for animal welfare, I will use websites, I will use articles that talk about animal welfare to help bring to life the things they are into. I'm trying to find ways to implement those things into the notes

Interviewer
and compared to other courses that you may have taught before, what would you say is different or unique about the assessments of the entrepreneurship course you're teaching now?

Responder
Essentially, it's problem based, right? The students go out and they try to solve the things that are an issue in the UAE society. They don't go to find out what's the matter in America or the UK. They're looking at concerns and issues right here in the UAE, and then they design, they create entrepreneurial ideas specifically for the UAE, for Emiratis. And to me, that's the most value that this class adds because it helps the students think about how they can improve life for their family and friends.

Interviewer
And as a faculty member, how do you know that you have achieved the goals of the course by the end of it?

Responder
I mean, we have traditional kind of assessment, where we have a rubric and it's the ghost and if the students connect to the rubric, then sure. So, that's one level of success, right? But to me the best part is when we can we take some of the projects from that class, and we get them sent to the incubator. Do you know what I mean? They get to go and they incubate these ideas. I love this sort of idea of being able to take something that they've created and sort of develop it further. We only have 16 weeks with them, so, we really don't get a chance to see this sort of developed all the way, but those projects with a lot of promise we get to see those move on, and so I like that. So, for me, that's a good measuristic when you can have out of eight projects three of those go on to incubator, that's awesome! That's really awesome!

Interviewer
Yes, yes. So, tell me more about this. Have you had students take their ideas to the incubator and then progress from there?

Responder
No, I haven't been around for that long to see that. We just started the incubator last year. Now, it is not our project, sorry, again I don't want to make it seem like it is, it is the college of business in the university... So, last year was the first year. Now, quite a few of our students from this entrepreneurship innovation course were in that first cohort, but I don't know who has progresses from there on. You should talk to Dr. […….] about that.

Interviewer
Okay, sure. Other than the incubator, are there any activities, like external activities or other activities outside of the classroom that kind of promote this entrepreneurship or entrepreneurial mindset in the students?

Responder
Yeah. I want to say something about this because this is really important. Right now, we have a lot of restrictions because of security clearance where we can just get the students off. Like, honestly, if we really want the students to engage in the community, we have to be able to navigate those restrictions more efficiently.

Interviewer
Yes.

Responder
With the incubator now we realized that we can't get the students to go to, you know, like the Dubai SME as much as they need to and things like this, so we had to sort of develop this thing internally, but it would be ideal if we can get students out more, but it's just so hard to do that. And so, for me, one of the opportunity growth areas for entrepreneurship education is can this process be more efficient.

Interviewer
Yes, okay.

Responder
Now, to get back to your question. Yes, here in Abu Dhabi there's an incubator that they always invite our students to, but again it's hard for them to get to it, and we'd had students who stayed in that. Also, we have an internal... university and college has an internal competition where students have been able to showcase their ideas that they have developed in this class. So, there are a few competitions out there, and the University of Dubai invited the students to participate in a one-day workshop on developing their ideas, so, I mean, there are things out there, and we're sort of assisting students in this process. But like I said before, there are a lot of sort of formal processes that we haven't been able to investigate yet for some of that.

Interviewer
Yes, okay. And tell me about how do you review the course? Or how do you review it and how often do you review the course?

Responder
Yes, so the course is reviewed every semester by faculty and by students, so we do a semesterly investigation of it, assessment of the course. If you want details about that, you can talk to professor Umbreen Sheikh. Umbreen Sheikh. Do you know Umbreen?

Interviewer
No. Umbreen?

Responder
Umbreen, yeah. Sheikh, yeah. And she can get you connected with the university college dean's office if you need access to that date because we do assess it every semester.

Interviewer
And do you review the course based on that assessment every semester?

Responder
Yeah, yeah. The university has the kind of procedural politics that you can change assessment every two years, so I think they do a yearly sort of review of the course for sure.

Interviewer
And now I just want to know from your experience and from your knowledge about the UAE's culture, do you think that Emirati students view entrepreneurship differently than other cultures or people from other cultures?

Responder
I can't speak to the culture of things because I don't know other cultures that well, but I can speak to some practical things that I've noticed from my work in a few countries.

Interviewer
Okay.

Responder
One of the things that's really unique here in the UAE is that there is sort of a very robust entrepreneurial infrastructure here. I mean, that's clear by all of the nationalities here, all of the different companies, all of the competition that's connected to those companies and nationalities. So, I think Emiratis have a different context that they're operating from, which forces them to think more critically about being entrepreneurial. In other places where the entrepreneurship is more stagnant, because it's more directed toward maybe sort of traditional kind of businesses, entrepreneurship isn't sort of a vibrant thing, but here in UAE they have to be. You have to be very creative in order to have economic development and so because of the competition I think Emiratis think about things differently. Now culturally, I can't really speak to... I can tell you about the country that I'm from, I think creativity is a huge part of the US curriculum, but I think it's not just entrepreneurship. It's creativity in a lot of ways. That's why there's so much innovation there. And I think Emirati students have not had as much creativity

in all of their subject matters like in the US. And so, I think, in that way, it might be different because when you talk about designing, a lot of these ideas are new for students, like brainstorming and things like that. And for kids in the US this is something they do fairly sort of routinely in their primary school days.

Interviewer
Okay. Good. And you mentioned that there are some formal procedures or restrictions when it comes to, for example, taking students out to participate in activities.

Responder
And bringing lecturers in.

Interviewer
Yes, yes. Okay. Are there any other challenges that you face teaching this course?

Responder
You know, this course is a mindset shift, going from government job I want to go there, you know, to me it is a mindset shift, because we're telling them, "Go and create a space for you to work rather than go to somewhere that's already created for you." So, this is a challenge with students because you're shifting their mind from the traditional way of thinking about employment to thinking about being creative. So, I think that's definitely a challenge, but that's our job, to help with that mindset shift. But definitely those two things are kind of our biggest challenges.

Interviewer
Okay. Good. And this will be my last question to you. What opportunities do you see your department could utilize to help in the development of entrepreneurship education?

Responder
As a department?

Interviewer
Yes, as a department.

Responder
Yeah, so I really wish we had more access to professionals who are in the field, engaging ones, not just ones who want to talk, but ones that can engage about legal issues, about the different industries. So, we have a lot of things we're interested in culinary entrepreneurship, so just let's bring in some of these people. We really need to bring in some people who failed, not just people who were successful. You learn from failure. So, we want to... for example, I always give this example in class; I live in Ajman, and in the Ajman road in the first two kilometres there are eight hamburger stores. Eight.

Interviewer
Okay. Yes, it's true.

Responder
And so, every week one is closing and another one is opening it seems like, right? And so, I would love to talk to entrepreneurs who are designing these stores so they can share their experiences and insights with students. For me that brings it to life for the students, and not just me lecturing or them sort of guessing about what's going on, but this brings it to life. So, this is what I really wish we could do is maybe have like a group of people who get one big clearance, security clearance, like some entrepreneurship go through the process, and then we can just sort of go to this list and then we can sort of invite them based on this list rather than me finding entrepreneurs and then filling out the papers, and then the university, the government coming back with more questions, you know what I mean? This is a sort of convoluted, complicated process. So, for me, the best opportunity for us at this point is to get connected. Like I said, this is a very entrepreneurial oriented society, so we should be utilizing these resources that we have as Emiratis who are successful, who have experienced the growing pains. You know? This is what I hope.

Interviewer
Yes, true, true. So, is there anything else that you would like to add or maybe you expect me to ask a question that I did not ask?

Interviewer
So, these were my questions. Thank you very much again!

Responder
You're welcome

Appendix F: Sample Interview Transcript (Academic Leader)

Interviewer
Okay, good. So, the first question would be - are you aware of any national policies about entrepreneurship education?

Responder
Not specifically. I'm more aware of initiatives, but I don't know which area that they fall under. And I only am aware of this from when the [course name-code] course was first introduced to the university.

Interviewer
[course name-code]?

Responder
Yes.

Interviewer
And at the university level, are there any policies regarding entrepreneurship education that you are aware of?

Interviewer
Okay. So, we can say it's a policy that this course is required for all the students.

Responder
Policies? No. But curriculum - yes. So, also, it's depending on what you mean by policies. If policies mean like rules and regulations - no, but as a curriculum requirement, if you want to consider that to be a policy, then - yes. All incoming students have to take the innovation and entrepreneurship course, which I think aligns with entrepreneurship education.

Responder
Yes, absolutely.

Interviewer
Okay. Okay, good. Now, in your view, from your experience, what do you think entrepreneurship is?

Responder
I believe entrepreneurship is, and I will tell you mine is bias, because after going through the Stanford training, I've sort of picked up that view. So, I'll sort of tell you what my thought was before and then after. So, before I used to just think entrepreneurship is owning your own business, within any realm, but running your own company essentially, but I think my definition has changed. I think a bit more so as a mindset, how can we be more creative, how can we find ways to improve services and products, and whether that's making it faster, better,

more convenient. So, I think, my definition now is more on the design thinking plane of what I see as entrepreneurship. So, not everyone's going to own their own company, but everyone needs to have the entrepreneurial mindset of how can I be innovative in whatever it is that I'm doing to make it better.

Interviewer
Okay. Yes. Good. And do you think of entrepreneurship education as an academic discipline?

Responder
Absolutely. I do, just because I think in today's world, because things are changing constantly, and I think this goes back to your question about national policy, because our department, we offer all the Prime Minister's Office courses. So, the fact that innovation and entrepreneurship is mandated by the Prime Minister's Office, it tells you that this is something that is critical for students to learn, because the majors that they have today may not match what's happening in the society in the real world in a few years from now, because that's how quickly things are changing. And I think any way to get students to have that entrepreneurial mindset is what will set them up to be successful in the future, always thinking about how can I make things better, how can I think outside of the box with things that may not even exist yet.

Interviewer
Yes, yes. Okay. And what do you think they need to know to be successful entrepreneurs, the students?

Responder
I think they need to be vulnerable. I feel like our students are afraid to fail, or that failure defines them in some way. And I feel like, in order to be an entrepreneur, you have to be willing to take risks, and that taking risks are okay. And that when things don't work out, there's still lessons to be learned from that. And then I think also students need to remember that they do have the ability to be creative. Because one of the things that we teach in the class is creative competence. And I think it's so true that when you look at kids, they're so creative, they're doing all sorts of things, making artwork, and being playful, but as adults, we're so concerned about people judging us that I think we miss that element. And in order to have an entrepreneurial mindset, you need to bring that back and know that you have that ability.

Interviewer
Okay. Yeah. And would you say that all the students would benefit from this type of education or is there a certain student profile that benefit more from entrepreneurship education?

Responder
I think all students, and I like how the course... Sorry, I keep going back to the course but that's my framework. I like how in our class, it has all the majors. Because no matter what academic discipline you're coming from, you bring a different perspective to how you look at something. And even, let's say, I have a student who doesn't even plan to work after they graduate, let's

say their goal is to raise their family, I still think having that creative mindset and finding ways of how can I contribute, whether that's in my smaller community, larger community, I still think those skill-sets are essential.

Interviewer
Okay.

Responder
Yeah. Yeah.

Interviewer
Now, let's talk a little bit about the integration of entrepreneurship education in the problems in the university.

Responder
Okay.

Interviewer
So, other than [course name-code], what's your knowledge about how the university is integrating entrepreneurship education, maybe into programs or courses?

Responder
I know through the Innovation, Future and Strategy department, they have The Founder's Program, which supports students who do want to pursue an entrepreneurial venture. Beyond that program, I'm not familiar, and beyond our class I'm not familiar of other university activities.

Interviewer
Okay. And from your experience now as a faculty member and an academic leader now, what's your idea about good teaching for entrepreneurship education? What is good teaching for you?

Responder
I think the thing that would define good teaching is being comfortable in stepping outside of how we traditionally view teaching, but that almost goes for any topic. You have to allow the students to engage with the material, engage in the class in ways that are non-traditional. So, I know when I taught the course, if the students wanted to create a circle and sit on the floor, that's okay. If we need to take a break and have them discuss ideas in the coffee shop, that's okay. So, being in those environments that spark creativity, I think is important. And as instructors, we need to sort of also let our guard down and allow that to happen, and trust that our students are doing the work.

Interviewer
Okay. That's nice. And can you share with me the main objectives or the main goals of the [course name-code] course?

Responder
Yeah, so the main goals I would say are teaching students about design thinking, helping students determine are there ideas of viable business plans. So, even though you are learning about design thinking and how to be innovative, to produce services or to produce a product, in the end, you still need to decide is it a viable business plan or not. And then I would say another objective, which is not as explicit in the course, is as part of developing that entrepreneurial mindset is how are we developing you to be contributing citizens in society? And how those contributions can play out in different ways. But I think that's also embedded in the course, but I don't think we explicitly state it enough.

Interviewer
And how were those objectives designed? Or who wrote those objectives for the course?

Responder
Oh, that's a good question. I know the course was designed for us by Stanford University. There were a lot of efforts between Stanford University and Prime Minister's office as far as how the course would be designed for all the institutions in the UAE. So, I'm assuming it happened at that level, because I know for [university name], we have very limited ability to make changes to the courses. So, as faculty or teaching it, yes, they have wonderful ideas, but as far as changing anything in the syllabus, we're usually limited, so I think it happened at a national level.

Interviewer
What do you do to understand the students' profiles that come to you in [course name-code]? Like how do you understand their backgrounds, their aspirations, maybe their challenges?

Responder
Oh, that a good question. There's nothing that's set across the curriculum for all instructors. Personally, for me, I do a lot of like icebreaker activities at the beginning of the semester just to get to know students. I have like a worksheet where they tell me who they are, what do they expect to learn from this course, like what are they passionate about, what are their hobbies. But this is more of a general worksheet I use for most of my classes just to help me get to know my students.

Interviewer
Okay. Okay, good. And would you say that the assessments for the course are different than other courses, and in what way?

Responder
Absolutely. Because we do not have any traditional multiple-choice assessments. There are no exams in the class. It is primarily project-based. But the other thing that makes it unique, because, yes, we have a lot of classes that are project-based, but they're primarily group projects. Oftentimes students don't like to work in groups. But I think that's also a dynamic of learning how to work with individuals in any entrepreneurial project that you undertake. You

have to be able to work with others, navigate those different personalities. So, I think that's what makes this class very different.

Interviewer
Okay. Can you give me examples of their projects?

Responder
Yeah. So, in Project One, they're required to identify a challenge or a problem that they would like to solve, but it always has to be from the perspective of the user, like the people who are using whatever service or product it is. And they have to find out this issue through empathy. So, also teaching them how do you connect with customers, how do you connect with people and find out what do they care about, what little insights do you find in the way they experience something. So, in Project One, it's all about identifying that problem and defining it based off of the feedback from people. In Project Two, it's about, okay, we know what the problem is. Now, how do we redesign whatever it is to make that problem better or to make the problem go away? So, whether that's changing the way you offer the service, or changing or developing a new product all together to address those challenges that those users had. So, they come up with a prototype of whatever it is that they've designed, and they go back out to users to say, "This is what I've designed. Give me your feedback." Okay? And then they're also supposed to identify based off of the product you've developed, you have to do research. Who would be your competitors? How much would it cost to develop your product? How would you distribute your product? Is this going to be online? Are you going to have a storefront? So, that's where they figure out is my idea viable. And then project three, which I think is the most interesting one is very different. So, Project Three is the only individual project. And in that project, they take all of the concepts that they've learned throughout the semester, but they apply it to themselves, and they have to develop their own personal business plan. So, what is it that you want to do when you graduate? Who would be your competitors? When you're applying for a job, how do you make yourself stand out? What do you want to contribute to society that would be fixing a problem? So, it's sort of a culmination of everything you've learned, but now you're applying it to yourself personally.

Interviewer
It's like promoting their skills.

Responder
Exactly, yeah.

Interviewer
That's nice. And as an academic leader or as the chair of the department, how do you know that you have reached or achieved the objectives of this course?

Responder
Okay. Well, we have our assessments, our data measures. So, I think every other year, we are assessing - did we meet the benchmarks that we put in place for the students? As you know,

all classes have a common assessment. Ours is the second project. So, we look to see, first of all, did the students reach that benchmark for the class? Are they meeting those learning outcomes that we've put in place for the class based off of that assessment? We look at the student evaluations. We look at the faculty evaluations. But I would say on a more informal basis, we have a curriculum committee just for that class, of the faculty that teach that class. Constantly reviewing feedback that they get formatively from their classes, feedback from their teaching experience, because to me, it's still a relatively new course. So, taking their feedback to find ways to improve upon the material. And I think one of the biggest areas that we are trying to improve is making the content more contextual. Because Stanford University designed the course for us, a lot of the examples are the U.S., very Western based, but there's a lot of success stories for entrepreneurship here in the UAE. And so, we've relied heavily on our faculty to do the research, to get those examples and how can we integrate it into the class. And I think we need to also find ways to measure the effectiveness of that.

Interviewer
Yes, yes. So, you do have a room to do some modifications into the course?

Responder
Yes. So, we can't change things like the syllabus or the textbook, but as far as the way we deliver the content, we can definitely make modifications. We'll still deliver the content Stanford gave us, but we can always add our own additional content to make it a little bit more in-depth and relevant to the student experience. So, we're bringing a lot of examples of companies here in the UAE that they relate to. We have a lot of case studies involving Emiratis. We highlight especially... we just had our Women Entrepreneurship Week, we highlight cases from news stories about what individuals have done, what sparked their passion for the entrepreneurial ventures that they've embarked on.

Interviewer
Okay. Okay. And you do this each and every semester or as the need comes?

Responder
As the need comes, but the committee, they're meeting constantly throughout the semester and always giving feedback. And we're trying to document that feedback, so that we can develop a report to then pass up in hopes that it can become embedded changes within the course.

Interviewer
Okay, good. And other than the activities in the classroom, do you offer anything else like extracurricular activities for the students to maybe use those skills that they learn in the classroom outside of the classroom?

Responder
So, we've posted a few events, but they're sort of one-shot events. So, last year was our first time doing Women Entrepreneurship Week. It's an international program out of Montclair State

University in the U.S. And so, we were the only institution in the UAE to participate also this year. And so that was an opportunity for just to highlight women entrepreneurs. And so last year we invited two [university name] alumni to come who are entrepreneurs and share their story with our [course name-code] classes. This year, we did a showcase in the promenade, so any student, any faculty member, any staff member could come and participate to highlight what are some of the ideas students are generating from the class, but we also had a station where students who've never even taken the class can come and participate in the design sprint to see what ideas can you come up with. And then we also had a booth where students who are already entrepreneurs can share their contact information because we have a lot of students who actually have businesses already, and how can we develop that network. Outside of that, we do also participate in the innovation month in February. But in those cases, we did a design sprint as well, just trying to highlight to students different ways that you can problem-solve creatively.

Interviewer
Okay, and is there any reward for the students who participate?

Responder
Let's see, for the Women Entrepreneurship Week, just a certificate. We wanted them to be able to have time with an entrepreneur like one on one, but because of restrictions of planning and approvals, and permissions, we weren't able to do so. So, beyond the certificates, no.

Interviewer
So, what would you say that this is one of the challenges?

Responder
Yes, yes, I would say even hosting the event - very challenging. Just because there's a lot of procedures that you have to go through. Approvals can take time, and sometimes you run out of time, and then you end up having to change the nature of the event. So, even last year, when we had the two entrepreneurs come to campus, even though they're [university name] alumni, we still had to wait for security clearance. It was supposed to be an entire panel of entrepreneurs, but because the security clearance takes so long, we had to just limit it to those who are alumni because theirs were quicker. So, those types of restrictions make it very difficult for us to host more activities for the students.

Interviewer
Or even maybe take the students outside of this campus also because of the safety.

Responder
Yeah, absolutely. Absolutely. Yeah.

Interviewer
Okay. Now, teaching Emirati students, female Emirati students, do you think that they view or their reaction to entrepreneurship education would be different than students from other nationalities from the U.S., for example?

Responder
Um, I think when I first taught the course, because I taught the course when it was first rolled out, I think then - yes, but I feel like now I don't see the same hesitation or scepticism that I did when the course was first rolled out. I feel like now there's been such a promotion not only at the university, but even nationally, that I think everyone views it differently. Because I would say when I first offered the course, half of my students were like, "Well, I don't want to run a business. I don't want to be an entrepreneur. I don't need this." Right? And I was trying to help them understand like, "No, no matter what you go into, there's always a way to maximize on improving something, contributing to society in some way, big or small." And I find that teaching the course now those same questions and challenges are not coming up. It's like students come into the class like ready and eager to learn something. I don't know if it's because word has spread and they hear about the course, and they know what to expect now, but I don't see that same scepticism as I used to.

Interviewer
Okay. And other than the challenges that you have just mentioned, are there any other challenges in delivering this course or teaching this course?

Responder
Yes, resources, which is surprising to say because normally here there's no issues with resources, but having the actual classroom space that makes it conducive to learning. On the Dubai campus they have an innovation lab. We do not have an innovation lab here. Just because you cannot teach entrepreneurship in a regular classroom. You need to be in a space that has materials, resources, computers to do research online, places to make your prototypes, phones to be able to call companies. And I feel like if you created this space, students would really thrive and like run with it. The other resource is materials, because even to come up with your ideas, come up with a prototype, things like colour, paper, tape, those basic things we don't have. And it's a struggle to even get the materials from the bookstore. I don't know why, but it's definitely a challenge. And we're looking into trying to create our own budget so that we don't have to wait on others to get approval.

Interviewer
Okay, it's interesting stuff. [laughter]

Responder
Yeah.

Interviewer
Okay, so this is my last question.

Responder
Sure.

Interviewer
What opportunities do you see that the department could use to improve or develop the entrepreneurship education more?

Responder
I think one of the previous points I made is contextualizing it more. I think out of most of the departments, for UC we now have the highest number of Emirati faculty, and I think that's made a difference in how we teach the course. By observing their classes, I noticed they mentioned more opportunities within the community that I wasn't even aware of, and I was like, "Oh, they provide funding for this. This is fabulous! Why aren't we talking about this?" And so even as faculty, being able to share and collaborate, I made them all sit down and say, "Okay, share what you know. How can we make this more contextual?" I think that's the biggest area of improvement. But the other thing that I would like to see change is currently, we call the class "Fundamentals of Innovation and Entrepreneurship." I think more of the emphasis is on the innovation. So, like when you first asked me, "How am I defining entrepreneurship?", I feel like even just using that term is very limiting, and I'd rather us focus on the innovation part, because to me, that's what broadens people's scope about what the possibilities are. I think because we come in with preconceived notions of what entrepreneurship is, we limit ourselves in what it could be. And so, I kind of want to see the name change, like why does it need to be entrepreneurship education? Why couldn't it be like innovative education or something to just capture the true essence of all that it entails?

Interviewer
Yes, yes, yes. Okay. Good. Is there anything else you want to add?

Responder
Not that I can think of. These were good questions.

Interviewer
Thank you. Thank you so much. And would you have any documents that would maybe help me with the research and I think maybe related to the Stanford partnership or...?

Responder
I will go back through and look at it. I would definitely say, because when the course came out, I was not the chair. Right? So, if I can't find it, I can tell you the people who have. I don't know if you've already interviewed [faculty member name] or [faculty member name], because both of them are ambassadors for the program for [university name]. I would say more so [faculty member name]. was very integral in when that course first was rolled out in the planning. He was part of like the initial pilot group. So, he would have a lot of the documentation, but I can certainly look through my stuff and see what I can find. The chair, the people who were chairs

at that time have now left the institution. So, yeah... And the other one is [faculty member name]. She's also in Dubai.

Interviewer
Okay, thank you so much for your time.

Responder
I hope it was helpful.

Interviewer
Yes, definitely. You were helpful.

Responder
Other than that, I hope I can see your research when it's all done and call you Dr. Reem.

Appendix G: Sample Interview Transcript (Policy Maker)

Interviewer
So, the first question is, from your view or from your experience, what are the national policies on entrepreneurship education in the UAE?

Responder
Well, I think the entrepreneurship is becoming a crucial topic, internationally and nationally, because it will help the students to decide their future, to prepare themselves for the future, to be innovative, to think for new solutions, new ideas, also to find jobs and opportunities, whether it's going to be through the private jobs, government jobs, even starting their own jobs. I think this is really crucial for everyone, and we are glad that the country is very much supportive through different projects, whether through the projects that the ministries are helping the universities and guiding the universities or through the Dubai Future initiative, what you call free zone universities and all that. So, all these are great initiatives that the country is taking to help their students and the universities to embark on an entrepreneurship.

Interviewer
So, and does the Ministry of Education have written policies about implementation of entrepreneurship education? I mean, are there any written policies?

Responder
We need to understand what do we mean by entrepreneurship for each of the specialties because at the Ministry of Education, the commission for academic accreditation, we have close to 1500 programs, academic programs in close to eight universities. And these programs they run from English language program, Baccalaureate of Arts in foreign language, business program, nuclear engineering program, medicine, nursing and all that. So, for each of these specialties the implementation will be different. Of course, each of them they need entrepreneurship because it's an eye-opening course or subject that will benefit whether they are graduating as doctors or they're graduating as English language teachers. So, we have guidance, the Ministry of Higher Education that was sent to the universities. You know, what sort of... and the guidance will cover different themes into entrepreneurship. The way we ask universities to implement is we give them some sort of flexibility, because in certain colleges, for example, they have to take all the subjects in the form of theoretical interaction. In some cultures, they may take it as part of graduation requirement, they may have... in the college of engineering the students may be doing a research project, and what they do they do more of how to... and if they have a patent or if they have a research idea, how to promote the research. So, for each college it's going to be different. For business colleges it's probably more obvious that it has to be as a formal course, but if someone is studying history, then for them the entrepreneurship is going to be a little bit different. So, we have the guidance that will insist that the universities have to offer opportunities for their students for entrepreneurship. The way we implement it is a little bit different.

Interviewer
It's different... Okay. So now, from your experience and your view, your personal view, what do you think entrepreneurship is? How would you define it? Or what's the meaning of entrepreneurship? What do you think?

Responder
Well, I think the meaning of entrepreneurship... I tend to link it more towards innovation and make it close to innovation. Entrepreneurship is just innovating, plus publicizing what you have innovated and using what you have innovated for your future and for the country's future. So, if the students, for example, discover a new method of analysing water to see that this water is safe, the amount of nutrients in the water is sufficient, the water doesn't contain contaminations, with using new technology and new method, so now this student has been able to discover or at least to find a new way. The time is now for this new student to basically see who's going to be using this, what are the companies, is the student going to establish his own or her own company. Are they going to sell it? Are they going to basically make a patent, or what is the next stage? So, not to stop at the moment of discovery of new technology. The other aspect probably is more of a soft skill or soft aspect. It's also maybe looking at it from a different perspective. Maybe the students they want to not only learn the technologies, but probably they want to implement the theoretical knowledge that they have learned. They want to implement it differently. And we go back to the English language, for example. Okay? There are strategies and technologies that you can teach English language to non-speakers differently, and throughout the studies the students should be able to explore various methodologies of teaching English language to non-speakers. So, maybe the teaching of English language to non-speakers whose native language is Arabic is different than teaching English the non-speakers whose native language is Chinese, for example, and they want to do it differently. So, this is again similar to the discovery concept. The other aspect of it could be purely based on finding jobs and having lifelong learning skills that you know you yourself are leading and how these skills could help them in basically getting better jobs or providing better opportunities in the jobs that they have and contributing better. So, maybe these two concepts, you know, innovation concept is one concept of my understanding on entrepreneurship and how to take innovation forward to the next level. And secondly, how to get better prepared to be engaged in a job market, whether it's private, government or self employed. Maybe I'm not the expert in entrepreneurship. I'm just saying from the higher education perspective or from my perspective.

Interviewer
Yes, that's good. So, now based on what you said earlier, you give the universities the freedom to implement entrepreneurship education the way they see suitable for their students. Now, is this happening? Do you know if it's happening across universities in the UAE? Are they implementing entrepreneurship education in any way?

Responder
The project is new, it's one of the entrepreneurial projects, so we have not reached the level of evaluating all the universities and throughout all the programs. But the universities were guided

with the topics, with the themes, with the concept that they have to cover, including the leadership of entrepreneurship and all that concept. So, the topics, the concepts were given to the universities. The next phase, of course, is that universities have to be evaluated. So, the way it's evaluated basically, right now what we are evaluating is during the re-accreditation of the programs, so when the program... and it takes time a little bit so when they include new topics or new concept in any program it's going to take time. So, when we go for any evaluation of the program, when it's for re-accreditation or for audit visit, we will look into it, but most likely we are looking during the re-accreditation whether these concepts are covered or not. As I've said earlier, for certain programs we try to see if the course exists and how much of it is being face to face delivered. For some courses, we will look into what was... if the universities, for example, say, "We are not providing specific courses, we are... students are doing some research." So, we will ask them to provide us with the data on that, so what research was done by the students, give us samples of the student's research or maybe the students have been through this... It they have had a job experience, then they have to describe what was the job experience that student had. So, in any format whether the practical experience, or working on a practical job experience or discovery in the lab, or attending the courses, they have to provide the evidence.

Interviewer
Okay, so this is at the university level. You as [department name] and Ministry of Education, how do you know that the goal or the objective of the entrepreneurship education is achieved at the higher level?

Responder
That's a challenging question, in fact, and the]department name] is not very much looking at that directly, but indirectly. This should be or could be a long-term project that we'll look at it indirectly. For example, if and maybe someone else is going to continue your thesis, and then look into that, what we said. So, right now we just started implementing the entrepreneurship. And then imagine it takes three to four years for those students to graduate, and when they go to the local market, so then we could ask, survey or someone could survey the employers - are these students different than others? Are they first? Are they getting jobs quicker? Of course, there are different factors that play a role in getting jobs quicker, because maybe there are more jobs available today, and there are less jobs available tomorrow, or vice versa. So, but at least someone could do the research on this one, what was the impact of entrepreneurship education in finding jobs. Secondly, in the satisfaction of the employees, where the companies that employed these graduates who have the entrepreneurship ideas, are they happier with their performance, or they are not happy? Or maybe they say, well, we are not happy because they were taking so much entrepreneurship, but it was at the expense of their core courses. We don't know yet and we have to evaluate it. Because when you're going to introduce certain ideas or certain concepts and topics into the curriculum, definitely they're going to have questions, no doubt. But is that going to be at the expense of the subject area or is it going to be augmented by subject area? So, that's a philosophical question. I tend to agree that students have to be introduced to entrepreneurship, but not so much. At the end of day, the engineers who are going to graduate with engineering degree should know the difference between low voltage and high

voltage [laughter], should know that... I mean I'm giving a simple example. Their core knowledge has to be and depth and content has to be really up to the standards. Then on top of that they can have lifelong skills, team building, entrepreneurship, you know, different business concepts. All those are important, but not to be at the expense of the topics. So, to answer your question, this is going to be a long-term project, that not only the ministry but some of the researchers could evaluate to see the impact.

Interviewer
Okay, so maybe based on your answer now, maybe there is a possibility that universities introduce it outside of the curriculum maybe? Is this something that you are looking at or maybe asking the universities to do to provide extracurricular activities that will allow the students to be introduced to the topic, but not at the expense of their subject matter, for example?

Responder
Right now, what we are trying to do, we are trying to guide the universities to integrate it into the curriculum because it's so important and because it's mandate and it helps their future. But at the same time, we are not asking them to have so many hours to spend on it, or we are not tying them to certain methodology of teaching. That's why we are giving them full flexibility. So, it's not going to be at the expense of the curriculum. But at the same time the universities are willing and they are planning. We encourage them to have extracurricular activities. And extracurricular that's again is like a contractor is... it's extracurriculars, so students may attend or may not attend them. So, we don't mind if you notice they do have extracurricular activity in the form of activities, in the form of social clubs, in the form of grand lectures. That's possible.

Interviewer
Yeah, that's possible. And do you think that Emirati students will benefit differently from those courses, or there will be a difference in how Emirati students will benefit from these courses from other nationalities? My focus is the Emirati students.

Responder
I'm not sure. I mean, this is not my area of, you know, I'm not expert in business and trade, and finance and all that. But I know that Emiratis by their nature they are traders. They are... [laughter]. So, definitely they have this wealth of experience that they have inherited from their grandfathers when they were trading pills and maybe trading also camels, and all that, and so probably they find it interesting. But in the new market, to what degree they're going to benefit more than others? Someone has to study it. I'm not sure. I think they may find it interesting because it resonates with their past, business oriented or small business oriented, not big business community of Emiratis, so maybe they may find it interesting.

Interviewer
Because according to the statistics, it's basically non-Emiratis who are really becoming successful, especially the ones that are at younger ages. You see non-Emiratis who are doing,

you know, elevating, taking their innovations to the next level, while there are not many Emiratis inside UAE.

Responder
You're talking about inside or outside UAE?

Interviewer
Yes, inside UAE.

Responder
Well, I don't know about the statistics. I mean, you may have the right statistics, but I think there are, of course, other factors that play a role. I mean, I think Emiratis have the capability, they have the history, but probably sometimes they are dragged with different activities, so they don't pursue this one. Maybe that's the case. I mean, if as an engineer, for example, Emirati engineer you are given the task of doing more of an administrative job, you may not have the time to go and pursue your discoveries. So, that could be the case. But I think if there is an opportunity, they will do well. I used to run medical school and also education schools, and I've seen the graduates from medical schools, Emirati doctors, that they are doing fantastic. Of course, the numbers are small, so you may not see them, but many of them when they went to study abroad, they were asked to stay in Canada, USA to practice medicine. So, I think Emiratis have the capabilities. Whether they were going to do it or not, and they will be distracted with other activities, that's something you need to evaluate. Whether we are talking about again, whether we are talking about the discoveries, or whether we are talking about establishing businesses, the other definition of the entrepreneurship, I think in both they will be successful. But they are a small number, they are not obvious. We need to find them and encourage them.

Interviewer
This will be my last question. What do you see are the opportunities for universities to develop entrepreneurship mindset in their students? From your experience with the universities, their levels, what do you see the opportunities that are there for those universities to develop this?

Responder
I think the key element in some of the university activities is the qualified faculty. So, one of the areas that will help the universities will be to have faculty from the businesses and from the industries teaching in the classroom. So, that doesn't mean that you bring people who are less qualified. No, I mean, for example, in the medical field, we have the faculty who is doing research and they are full-time maybe with the medical school, but also there are excellent teachers, faculty professors, who are working in hospitals and have daily activities dealing with patients, solving problems, running their community, all that. So, they could become part of teaching stuff. That's one way of promoting the concept. Then the second way of promoting the concept is sending the students to do more training. And what I mean by training is part of the curriculum and also sometimes extra curriculum during summer and during vacations. This is where the students see entrepreneurship in nature. No matter how much you teach them and you talk to them about seeing companies, if they have not seen a company in action, how it

works, how it functions, they will not have the opportunity. And by company or industry we don't mean only the business company. Even if a degree, for example, is Hotel Management, they can go and see how hotels are run. So, the training and internship is another, having the qualified faculty is one. And also, what we have mentioned about introducing courses, whether as individual courses or separate, or integrated into other courses, it will help, I mean, definitely it will help, no doubt. Then there should be some sort of infrastructure at the universities, that the students could have the prototypes and the role models. So, basically, if there is a college of law, they could have simulated court, or if a college or business could have a simulated company that, you know, the students they go and they play a role or they take a small project, and they play the role of the chief finance officer of the company, and try to have a case or they get some of the real cases that this company is bankrupt now. How you are going to save the company or how you're going to just phase out the company? So, things like that, practical examples, or if it's engineering, there is a small lab that they could have, they could go and practice their ideas. Maybe they have hundred ideas that are failed. One idea could be successful. If it's successful, how they can take it to the next level etc. They may look at the drones that can tolerate high temperature, for example. I mean, the whole universe is full of new ideas that the students could explore. So, the universities could provide the opportunities for start-ups or opportunities for trial and error of their innovations.

Interviewer
So, that was my last question. Do you want to add anything else?

Responder
Well, no, I think it's a wonderful project as I said earlier in the introduction, and we encourage you to continue and research it more. The key element is how the entrepreneurship could be applied to different fields without jeopardizing the content and the depth of knowledge that the students are learning. And then the second phase, to see whether there is impact in terms of being employed, being better capable to run their job, whatever their job is in the future, or to what degree this is going to help them in bringing new products to the market and making more discoveries. This is the key element in entrepreneurship.

Appendix H: List of Documents Included in the Documentary Analysis

Policy and strategy documents at the national level:

1. UAE Vision and National Agenda 2021
2. UAE National Innovation Strategy
3. UAE 2071
4. UAE Sustainable Development Goals 2030
5. List of CoreLife Skills from the NQA

Policy and strategy documents at the MoE level:

1. MoE Strategic Plan 2017–2021
2. National Higher Education Strategy 2017–2030
3. Commission for Academic Accreditation Standards for Institutional Licensure and Program Accreditation

Institutional documents at the higher institution level:

1. Ten academic (course) catalogues, factbooks and annual reports from all higher education institutions with participants in this study
2. Four entrepreneurship course syllabi
3. Stanford Entrepreneurship and Innovation course syllabus

Personal documents:

1. Nine entrepreneurship faculty member curricula vitae or LinkedIn profiles

Appendix I: Documents Analysis Criteria

Planning – thinking through 'who', 'where', 'when', 'how' and 'what'	Creation of a list of documents to explore Access – how documents will be located and accessed Planning to control researcher's biases Strategies for ensuring credibility What to look for or try to find in the document Ethics/ethics approval
Reviewing	Assess the authenticity and credibility of the 'text' Explore the text's agenda, that is, reviewed the text and considered any inherent biases
Interrogating	Background Information Questions 'about' the text – Who produced it? What did they produce it for? What were the circumstances of production? When, where and why was it produced?
Analyzing data	Mode of analysis (qualitative analysis) through a reflective process

Criteria used for Document Analysis (adapted from O'Leary, Z. (2014)

Appendix J: Samples of Documents Included in the Documentary Analysis

2019

Standards

for Institutional Licensure and Program Accreditation

Commission for Academic Accreditation
MINISTRY OF EDUCATION
UNITED ARAB EMIRATES

وزارة التربية والتعليم
Ministry of Education

The Ministry of Education Strategy 2010 – 2020

Aiming in accomplishing a score of 10/10 in all of its initiatives

Ministry of Education Strategy
2010 – 2020

10 strategic objectives

Student Outcomes	1 Ensure **high quality curriculum** is in place so that students are best **prepared** for **the knowledge economy** 2 Ensure all students receive **excellent teaching** from all **education staff**
Student School Life	3 **Develop** primary and secondary **education** across the UAE and **minimize drop outs** 4 Ensure **excellent** learning **environment and tools,** to ensure that students needs are met
Student Equality	5 Install a **harmonized assessment** on **federal level** and ensure that **students** with **special needs** receive **extra** and **individualized support to integrate** them into the educational system 6 Ensure an **affordable**, **high quality** standard of Public and Private **education** is accessible to **all students**
Student Citizens	7 **Promote National Identity** and develop the sense of belonging of students 8 **Foster the society's direct contribution** to the school environment
Administrative Effectiveness	9 **Ensure** that **all support services** in **Zones** are conducted in a **timely** and **efficient way** 10 **Ensure** that **all support services** in **the Ministry** are conducted in a **timely** and **efficient way**

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United Arab Emirates

UAE NATIONAL INNOVATION STRATEGY