Pedagogical changes in higher education to promote higher-order thinking: An

exploration of practice in a federal university in the UAE

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Dedication

This dissertation is dedicated to the loving memory of my parents, Alfred and Brigid Morris who instilled in me, the value of education and personal growth not only for personal gain but also to contribute to the world and others around me

It is also dedicated to the memory of my late husband, James and son Steven

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Abstract

UAE Vision 2021 is a driving force leading the United Arab Emirates (UAE) towards a globally competitive knowledge economy. Higher-order thinking skills (HOTS) are competencies in employable graduates that are deemed crucial for success in knowledge economies. Cultivating HOTS amongst national students in federal universities as a part of its Emiratisation policy to develop leaders for a resilient knowledge economy is a national priority. Framed within the context of UAE Vision 2021, the knowledge economy and Emiratisation, this mixed-methods case study examines whether constructivist pedagogic approaches facilitating the deep approach to learning that promotes HOTS were practised in a federal university in the UAE.

Applying quantitative and qualitative inquiries using surveys, interviews, focus group discussions and document analysis, faculty and students from two female colleges within this university were invited to participate. The theoretical framework underpinning this study includes constructivist learning theories, the deep/surface approaches to learning model and higher-order thinking skills. The findings indicate that although constructivist pedagogies and a deep approach to learning are largely practised at both colleges, there are several constraints that impede their full implementation, especially at the foundation college. Significant implications for theory surfaced as the limitations of the deep / surface learning model to the UAE context were identified. A learning model unique to the UAE context evolved from this study. Other findings of the study point to a lack of balance between the expectations of adhering strictly to accreditation requirements and the flexibility to adapt as best suited for context. A lack of student college readiness at the foundation college hampers students' capabilities to access the deep approach to learning readily.

Numerous ambitious policy directives have been initiated in recent years to address these issues. Federal universities experience the direct impact of these changes. Understanding

the influence of these policy directives, the changes and adjustments experienced at the administrative, faculty and student levels and whether change is indeed occurring would address a research gap. Therefore, this study is significant, as it addresses a research gap at this time in this constantly changing higher educational system in the lead up to the deadline of UAE Vision 2021; its findings, such as the enabling and constraining factors that surfaced, could stimulate policy adjustments to the current system.

Keywords: *UAE Vision 2021, knowledge economy, constructivist learning approach, deep and surface approaches to learning, higher-order thinking skills*

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Acronyms

ABP – Academic Bridge Program
APM – Academic Programme Model
ASSIST – Approaches and Study Skills Inventory for Students
ATI – Approaches to Teaching Inventory
HE – Higher Education
CAA – Commission for Academic Accreditation
CAEP – Council for Accreditation of Educator Preparation Continuous Improvement Commission
CEPA – Common Educational Proficiency Assessment
DAL – Deep Approach to Learning
D/SAL – Deep / Surface Approaches to Learning
EMI – English as the Medium of Instruction
FGD – Focus Group Discussion
GCI – Global Competitiveness Index
HOT – Higher-Order Thinking
HOTS – Higher-Order Thinking Skills
LOT – Lower-Order Thinking
LOTS – Lower-Order Thinking Skills
MOHESR – Ministry of Higher Education and Scientific Research
MBRF – Mohammed Bin Rashid Al Maktoum Foundation
NCATE – National Council for Accreditation of Teacher Education
NQA – National Qualification Authority
OECD – Organisation for Economic Co-operation and Development
QAA – Quality Assurance Agency for Higher Education in the United Kingdom
QFE – Qualifications Framework Emirates
RQ – Research Question
SAL – Surface Approach to Learning

SCP – Student-centred pedagogy
SUV2021 – Support for UAE Vision 2021
TALIS – Teaching and Learning International Survey
TCP – Teacher-centred pedagogy
TQA – Teaching Quality Assurance
UAE – United Arab Emirates
UNDP/RBAS - United Nations Development Program/Regional Bureau for Arab States
UNESCO – The United Nations Educational, Scientific and Cultural Organization
UK – United Kingdom
US – United States of America
WEF – World Economic Forum

Chapter 1: Context

The purposes of this study—exploring the United Arab Emirates' (UAE) transition to a knowledge economy, the role of higher education in knowledge economies and the UAE Vision 2021 as a catalyst for rapid change—are discussed in this chapter. The research context of the educational, political and cultural background placed against the backdrop of Emiratisation (a policy promoting the development of the nation's youth) is traced. As the case study is undertaken in a gender-segregated federal university for female Emirati students, national policies in pursuit of achieving a gender balance are also acknowledged below. The rationale for the study, research aim, research questions and the significance of the study are discussed in the latter half of this chapter.

UAE Vision 2021, launched in late 2010, is both a catalyst for change to drive the UAE's oil-based economy towards a knowledge economy, as well as a vision to secure the UAE a place amongst the top-ranking knowledge economies globally. Barrow (2003), Bratianu and Bolisani (2015) and others suggest that global economic competition in the 21st century is knowledge-driven and is the main factor that impacts the development of the labour force. The Arab Knowledge Index (AKI), specific to the Arab region, was initiated in 2011 to stimulate quality in higher education (HE) and drive economic growth in the region (Mohammed bin Rashid Al Maktoum Foundation [MBRF] & United Nations Development Program/Regional Bureau for Arab States [UNDP/RBAS], 2011). As the AKI 2015 outlines, HE has a pivotal role in knowledge economies, and workers who can integrate "innovation, creativity and apply knowledge" become central to a country's economic development (MBRF & UNDP/RBAS, 2015, p. 30).

The Arab Knowledge Index 2014 (AKI) uses the terms, "transfer, production, localization and usage of knowledge … in daily activities" (MBRF & UNDP/RBAS, 2014, p. 25) to describe growth and development in a knowledge economy. Knowledge generation,

transfer and processes therefore are essential skills required in the workplace to compete in the knowledge economies. Brookhart (2010) and Barahal (2008) explain that knowledge transfer and knowledge processes are skills or abilities to connect and use knowledge for practical applications in new and differing contexts. The terms "abilities," "skills" and "competencies", though specific in meaning, are also interchangeably used in relation to knowledge development for the labour markets of the knowledge economies. The Arab Knowledge Report 2011 describes "skills" as acquired cognitive abilities such as "information processing, analytical/critical thinking, crisis management, problem solving and decision making" (MBRF & UNDP/RBAS, 2011, p. 5). It further defines "competencies" as knowledge, skills and abilities that are acquired from teaching or training or as "an inner potential" (MBRF & UNDP/RBAS, 2011, p. 5). This study will adopt the term "skills" in referring to skills, abilities and competencies that are essential for the knowledge economies, specifically in relation to higher-order thinking skills (HOTS) and outcomes of the deep and surface approaches to learning.

The AKI 2014 asserts that it is critical to empower youth in the "19–29 age group" in the Arab region with skills necessary for knowledge economies (MBRF & UNDP/RBAS, 2014, p. 25). The same report explains that "youth are the most important pillar of every nation and the most important resource … for achieving sustainable development" (p. 3). The UN defines youth as those within the age bracket of 15 – 24 (UNESCO, 2017). Students in the undergraduate programme at the university under study are aged between 19 – 27, and therefore are a significant group that needs to be developed in order for the knowledge economies to prosper. As Davenport and Prusak (2000) and Powell and Snellman (2004) explain, the quality of HE becomes critical to develop workers who are competent and equipped with the skills essential for the 21st-century labour markets.

Kirk (2010) among others assert that the UAE is stimulating educational innovation in its federal universities being driven by UAE Vision 2021. The year 2021 is a landmark year as it celebrates the Golden Jubilee of the federation. The National Qualifications Authority (NQA) defines this agenda as:

A knowledge economy agenda [which] implies a shift in the education system, in the teaching and learning process mainly. It aims to equip students with high-order thinking skills including creativity, analysis, planning, reordering, problem solving and developing information into knowledge capital to be distributed and used again (2013, p. 11).

The NQA's definition of higher-order thinking skills (HOTS) resonates with the findings of Baviskar et al. (2009), Biggs and Tang (2007), Entwistle and Ramsden (2015) and Brookhart (2010) amongst others. They argue that constructivist pedagogic approaches in a student-centred learning environment using a deep approach to learning (DAL) can promote outcomes of HOTS such as critical thinking, analysing, evaluating, creativity and synthesising knowledge. Constructivist pedagogic approaches and HOT will be discussed further in the literature review.

Past research studies, such as those by Ridge (2012), Farah (2012) and Tabari (2014), consistently point to the UAE educational system being entrenched in teacher-centred pedagogy that primarily uses rote learning methods. Marton and Säljö (1979) and Biggs and Tang (2007) amongst others claim that rote learning methods are a surface approach to learning (SAL). The deep/surface approach to learning (D/SAL) dichotomy is used widely in educational research and will be discussed at length in the literature review. However, as this paradigm is used consistently throughout the study, a concise definition is provided here. SAL

is described as a superficial engagement with content committed to short-term memory, while DAL is described as meaningful engagement through understanding, connecting, applying and synthesising content (Biggs & Tang, 2007; Entwistle and McCune, 2004; Entwistle & Ramsden, 2015).

The educational transformation expected within this comparatively short period of the UAE's given 10-year deadline has prompted many policy directives and constant changes. One example is the government accelerator programme (UAE Ministry of Cabinet Affairs, 2016), which was initiated to accelerate progress for each of the UAE Vision 2021 objectives. The goal of the programme is to address challenges and develop policies, indices and services "to achieve ambitious goals within short periods of time" (para. 2). The speed at which changes are integrated into the educational system at the federal universities to meet the deadline adds to the complexity of obtaining a true picture of the state of the quality of HE. Empirical research studies, such as those by Al Rasbi (2014), Lovering (2012), McLaughlin and Durrant (2016), Solloway (2016) and O'Sullivan (2016), indicate that although students prefer student-centred pedagogy (SCP), teacher-centred pedagogy (TCP) continues to remain dominant in the federal universities. However, considering the numerous policies that have been implemented in recent years, there could be changes in pedagogic structures that could offer valuable insight.

One such paradigm change in 2016 was the merger of the Ministry of Education (MOE) with the Ministry of Higher Education and Scientific Research (MOHESR)—the ministry responsible for HE. This merger is expected to streamline policies, improve the efficiency of implementation and allow for the improvement of students' college readiness (Swan & Hanif, 2016). Research studies published as recently as 2016 may subsequently lack relevance, as conditions might have changed following new policies. Therefore, exploring the pedagogic practice now, just two years away from the 2021, as policy makers race towards the deadline, is significant and presents a research gap. This comparative study between two colleges can

reveal current implications and inform policy makers of enabling and constraining factors from the perspectives of both faculty and students. For the purpose of this study, the terms "faculty" and "faculty member" will be used for instructors and professors who are engaged in the teaching and learning process at these colleges. The students in this study, being in the last half of their final year at university, draw their insights from their long-term experience at both colleges.

1.1 Diversification of the Economy

In 1971, seven Trucial States in the Gulf gained their independence from Great Britain and formed a federation to become the United Arab Emirates (UAE Ministry of Culture and Information, 2003). At the time of its formation, the UAE had a small population of 250,000. As recently as 1960, before the first exportation of petroleum, there were no roads, no hospitals and not much of an infrastructure in the country (UAE Ministry of Culture and Information, 2003).

Significant oil revenues in the early '70s have rapidly transformed the economy, infrastructure and education systems over the last 40 years (Kirk, 2010; Wagie & Fox, 2006). A contributing factor to this significant progress is the national policy since 1971 to invest the UAE's large oil revenue in the development of the country and to diversify its economy away from petroleum (Said, 2016). The UAE is firmly rooted in its diversification strategies, having coped successfully with the 2008 financial crisis and the 2014 decline in oil prices, and shows positive economic growth (World Trade Organization, 2016). Figure 1.1 shows the diversification of the UAE's economy and its Gross Domestic Product (GDP) composition in 2015, released by the International Monetary Fund (IMF) Report (as cited in Said, 2016, para. 7). The biggest part of the economy is service-oriented, with just 31% relying on energy from

natural resources, denoting the shift to an economy that is increasingly dependent on knowledge generation, transfer and application.
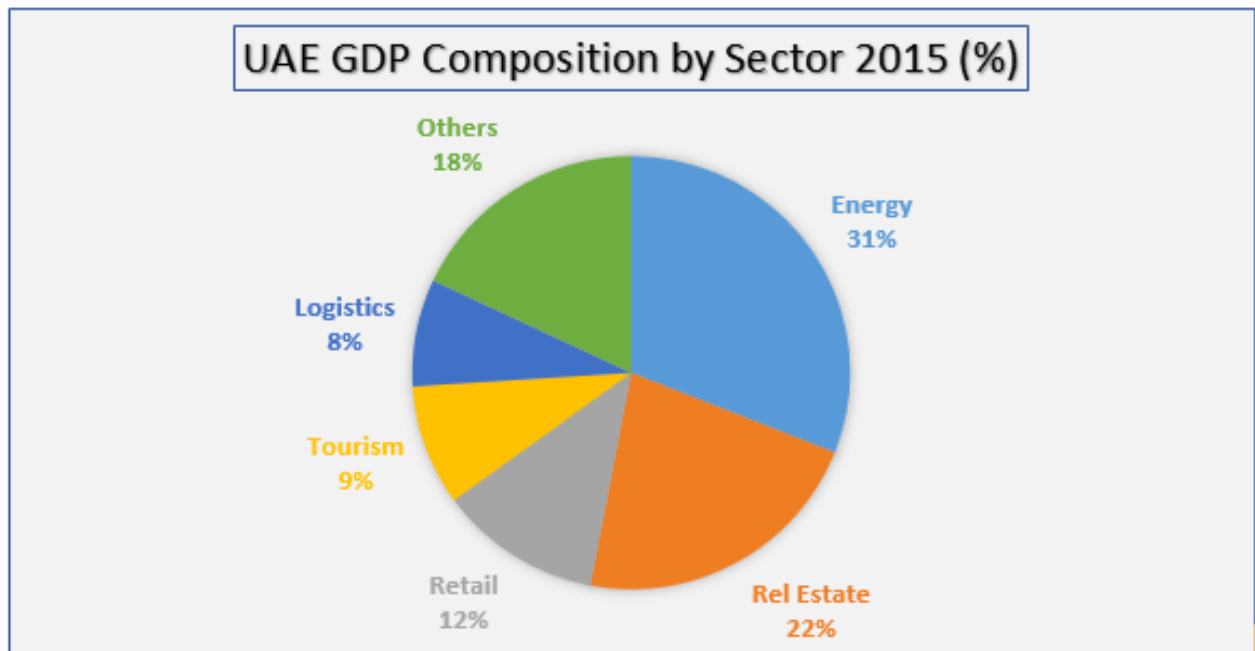
Figure 1. 1 Economic Diversification in Oil Exporting Arab Countries, April 2016.
Source: IMF, Economic Diversification in Oil-Exporting Arab Countries. (Reprinted from Economic Diversification Record, Said, April 2016)

Today, the UAE has the strongest diversification success amongst the Gulf Cooperation Council countries, with all indicators affirming the stability of the UAE economy and its potential to become a major economic centre in the region (Said, 2016; World Economic Forum [WEF], 2017). The International Institute for Management Development (IMD) World Competitiveness Report (the leading annual report marking competitiveness benchmarks) has ranked the UAE seventh in the overall rankings and fourth in the economic performance pillar worldwide amongst the 63 countries surveyed in 2018 (IMD World Competitiveness Center, 2018).

1.2 Contextual Study of the UAE

1.2.1 Progress of tertiary education in the UAE. At the formation of the UAE in 1971, the percentage of the population who completed primary education stood at 43%, with 74 established schools (Waggie and Fox, 2006 and Wilkins, 2010). There were no higher education institutions, therefore students had to go abroad for tertiary education (Waggie and Fox, 2006 and Wilkins, 2010). The literacy rates for males was below 50% and females below 30% (Davidson, 2008). The founding father of the UAE Sheikh Zayed Al Nahyan placed an emphasis on the role of education for the development of the country. He claimed, "The real asset of any advanced nation is its people, especially the educated ones, and the prosperity and success of the people are measured by the standard of their education" (NQA, 2013, p. 5). Consequently, raising literacy rates and establishing secondary and tertiary educational institutions became a priority focus in the UAE. By investing the oil revenue in developing the nation, state-funded primary, secondary and tertiary education was provided for the national Emirati population (Maitra, 2007).

The UAE government guaranteed entry for every national Emirati high school graduate to one of the federal universities providing they met the entry requirements (National Media Council, 2009). However, this had put tremendous pressure on the federal universities to expand their capacities with the increasing student numbers. Coupled with the transition to a knowledge-based economy and to meet the demand for HE for a growing population (which has doubled over the last 10 years), private universities have flourished in recent years (Wilkins, 2010; Kirk, 2010). Partnerships and joint ventures have encouraged some of the renowned Higher Education Institutions (HEIs), such as the Sorbonne, New York University and INSEAD University. The private universities are international branch campuses and transnational universities, mostly originating from Britain, the United States and Australia (Wilkins, 2010). Today, there are over 100 institutions of HE (of which only three are federal

universities) providing tertiary education largely to the expatriate community residing in the UAE, as well as to the international students from surrounding countries (Quality Assurance Authority, 2017). The UAE is one of the largest host countries for transnational universities, second only to China.

The three federally owned public universities aim to provide first-rate education to the national Emirati youth in order to raise strong young leaders equipped for knowledge economies (MOHESR, 2007; UAE Vision 2021, 2010). The first federal university (UAE University) was established in 1977, the second (the Higher Colleges of Technology, with 17 branches) in 1988 and the third (Zayed University, with two branches) in 1998. The UAE's federal universities are hailed as flagship universities in the region (NQA, 2015; Quality Assurance Authority, 2017); the federal universities have received large budget allocations and investments in the form of the importation of foreign educational expertise, curricula and accreditation, mainly from the United States (Emirates Competitiveness Council, 2014; Kirk, 2010). As Kirk (2010) and Waggie and Fox (2006) among others explain the priority over the last decade has shifted from raising literacy levels to raising the quality and relevance of education to meet the demands of the knowledge economy labour markets.

In order to understand how educational innovation and policy directives translate to practice in the UAE, a brief overview of the governance structure is described below.

1.2.2 The UAE's governance structure. The UAE's governance system is based on a federal constitutional system, meaning that it is ruled by its constitution (Government.ae, 2018d). The Federal Supreme Council, consisting of the rulers of each of the seven Emirates, is the highest constitutional authority and policy-making entity, with each ruler having a single vote (Frank, 2009; Government.ae, 2018c; National Media Council, 2016).

The Federal National Council, comprised of 40 members, is the consultative council or the parliamentary body of the UAE (Government.ae, 2018b). UAE Vision 2021 is a national charter and a strategic reform launched by the UAE legislative body of the Federal National Council (Government.ae, 2018b). A top-down approach has been adopted in the implementation of policy directives to bring about rapid change to achieve the goals of this initiative. Figure 1.2 in Reynolds and Saunders (1987) sourced in Trowler (2002) presents a view on how top-down structures unfold.
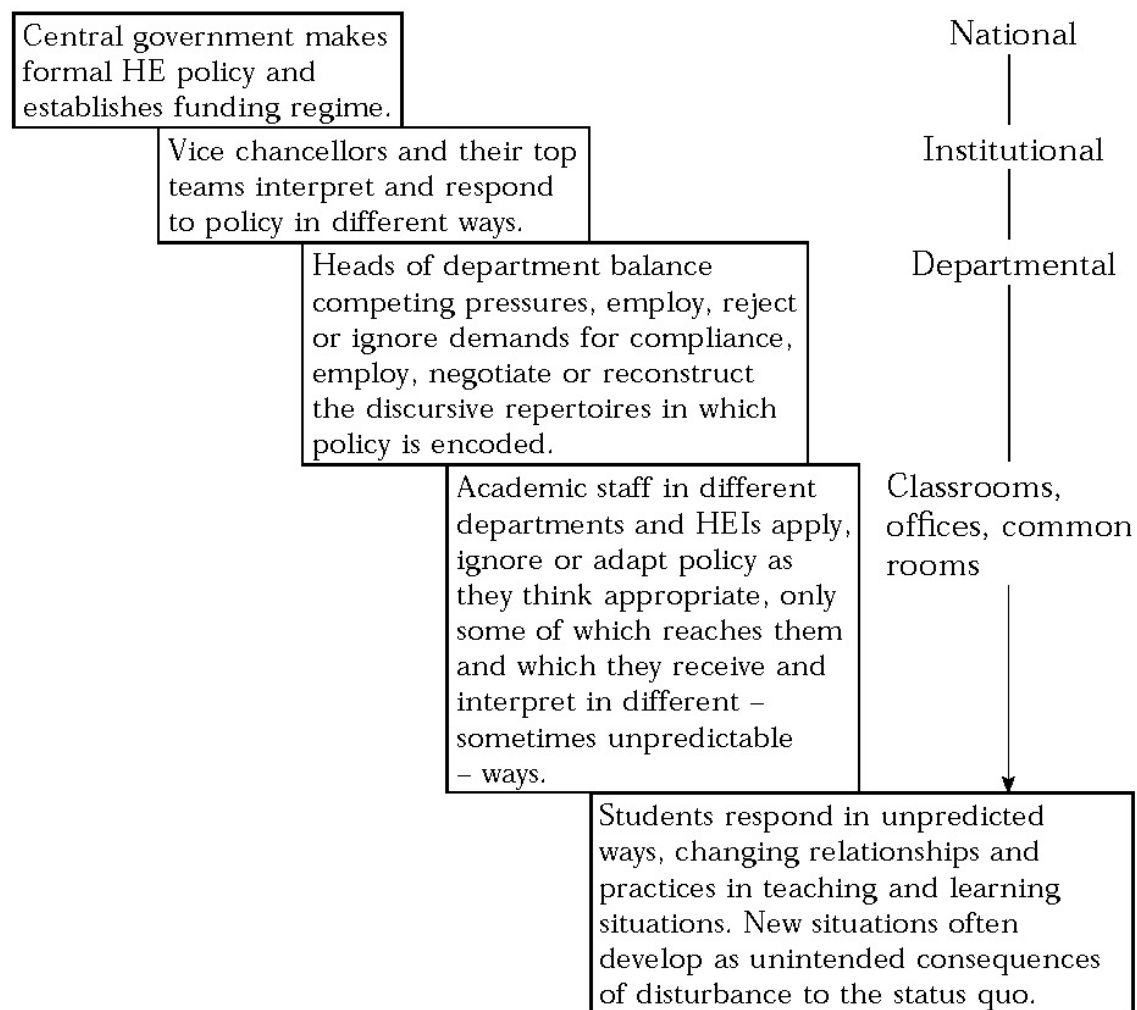
Figure 1. 2 The implementation staircase (Source: Trowler, 2002, p. 4).

"Policy," as defined by Harman (1984, p. 13) is the implicit and purposive course of action to be taken or followed to accomplish specific intended goals. Reynolds and Saunders

(1987) explain that policy can be refracted on its way up or down the "implementation staircase," creating gaps in the implementation process. As Reynolds and Saunders (1987) explain, the various factors that influence this refraction include differing perceptions, pressures, priorities, habitual practices, attitudes and the context of the institution. The policy directives to achieve the goals of UAE Vision 2021 are developed and sanctioned at the higher levels of the political system, as the "implementation staircase" theory by Reynolds and Saunders suggests. (1987, p. 44).

The top-down and bottom-up approaches have caused much debate in recent decades (deLeon & deLeon, 2001; Matland, 1995; West, 1984). Matland posits that the top-down approach begins with authoritative central bodies, who he says are "most relevant to producing the desired effect" (1995, p. 146). Elder (2011) notes that top-down policy implementation approaches are, in most cases, clear-cut directives from the government in the form of projects for the betterment of the people (as cited in Political Pipeline, 2013). As Kirk (2014) claims, top-down mandated reform models integrate new approaches into established practices, and along with multiple stakeholders and a long or rapid implementation process can lead to a "piecemeal approach to reform" or fragmented sectors of the system (para. 4). On the other hand, he also agrees that the incentive for change is often not present in bottom-up models, and government-led reforms are the primary catalysts and drivers for advancement and innovation, especially in large educational systems.

In the case of the UAE, the governance structure may appear to be effective as a top-down structure as reflected in the tremendous development it has achieved over a period of four decades, going from a country with no proper schools, roads or hospitals to a regional economic and educational hub (Maitra, 2007).

Matland (1995) also argues that the top-down approach can raise discontent amongst implementers who may have alternate suggestions learned from practice. When the Federal

National Council was established in the early years, Sheikh Zayed bin Sultan Al Nahyan encouraged rule through consultation (Dajani, 2016; Government.ae, 2017b). Al Khateri, the Chief Justice who had been a council member from 1997–2011, said that since its foundational years the council maintained a moderate type of government with its highest priority being national welfare. He also added, "I remember how my colleagues and I worked as a team, focusing on issues that concern nationals, such as education and evaluating educational policies" (Dajani, 2016, para. 15). This could indicate that although a top-down approach is taken, structures to receive bottom and middle up feedback may be a part of the implementation plan. The literature review and the document analysis may provide further insights on the implementation process of the transition of policy to practice. Furthermore, exploring the perspectives of students and faculty who form the recipients and actors of the policies at the grassroots or bottom levels can offer valuable insights into how the transition from policy-to-practice unfolds and may reveal enabling and constraining factors.

  1.2.3 Significance of the study undertaken at a women's university. Federal universities are gender-segregated in accordance with the local cultural and traditional mores. *The Arab Human Capital Challenge: The Voice of the CEOs* report states that "the UAE is registering the highest rate of females in higher education in the entire world" (MBRF & PricewaterhouseCoopers Intelligence & Strategy Unit, 2007, p. 77). Records also reveal that 95% of female high school Emirati graduates apply for higher education (MOHESR, 2017).

  Conducting this study at female colleges is significant firstly because of the high rate of female attendees in HE in the UAE (Abdulla and Ridge, 2011). Secondly, many attendees are the first females in their families to enter HE as the lack of HEIs in the early years of the federation and the local culture that did not allow for women to go abroad alone gave no opportunity for HE for women until this decade (Swaroop, 2004). Today, as Pennington (2017) reports, the rate of females enrolling in universities is growing, with women making up 90%

of the student population in two of the three federal universities (which includes the university under study) and 60% in the third as seen in figure 1.3 below.
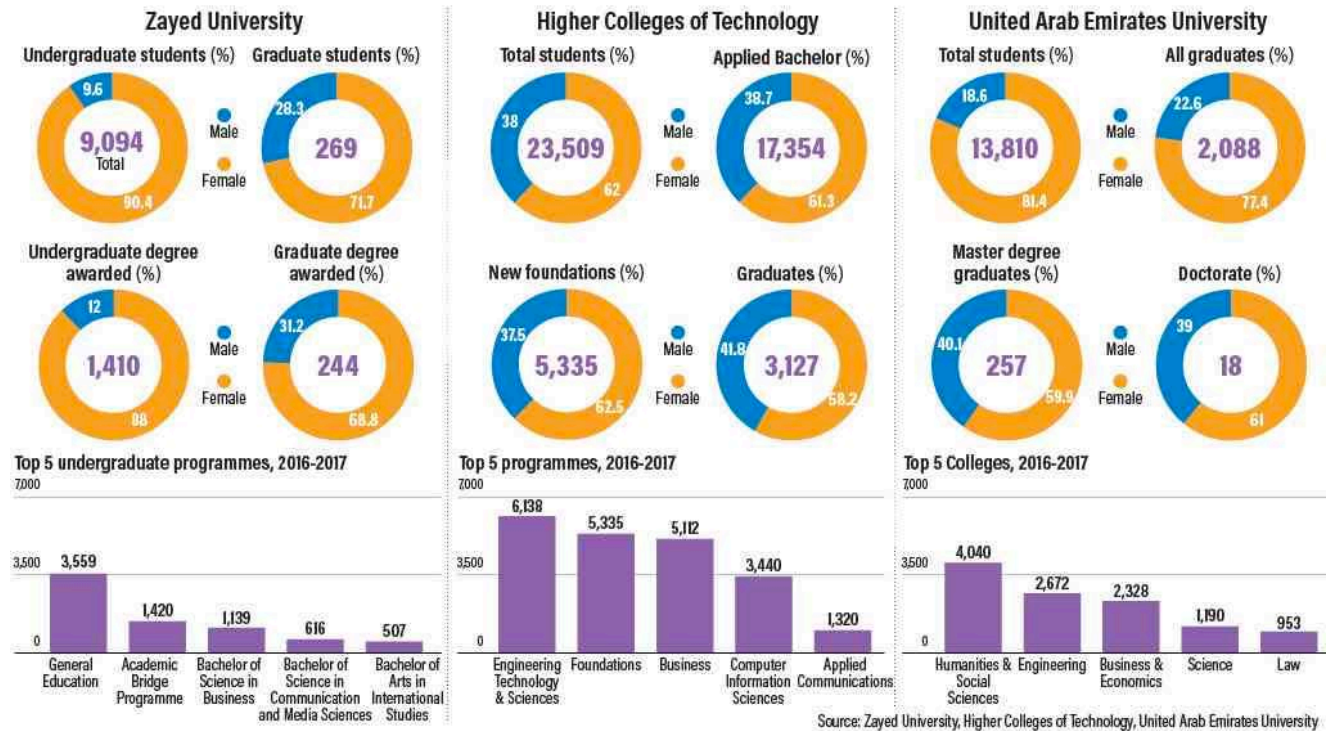
Figure 1. 3 Male and female populations in the three federal universities.

Source: Ramon Peñas, *The National*, cited in Pennington (2017).

Sheikh Zayed bin Sultan Al Nahyan encouraged education for women, both as personal empowerment in a male-dominant society and to contribute to the development of the country. He said, "The woman is half of the society; any country which pursues development should not leave her in poverty or illiteracy" (McFarlane, 2018, p. 6).

Against the backdrop of the patriarchal roots versus modernisation debate, the UAE leadership has pursued this vision of empowering women to be equal contributors to the country (Alibeli, 2014). Two major accomplishments in this arena have been achieved in recent years. The UAE Gender Balance Council was established in 2015, in partnership with the Organisation for Economic Cooperation and Development (OECD), to promote gender balance

in the public sector through clear procedures and action plans (Government.ae, 2018a; UAE Gender Balance Council, 2017). Furthermore, a bill endorsed in the Cabinet in 2018 declared equal wages for men and women and gender equality as a fundamental right (UAE The Cabinet, 2018).

Although strategic reformation for women's empowerment was undertaken, the UAE however ranked 120th out of 144 countries in the World Economic Forum's (WEF) Global Gender Gap Report 2017 (WEF, 2017). When the indicators are broken down, it was revealed that two of the four sub-indexes that brought down the overall rating are economic participation and health and services. Abdulla and Ridge (2011) explain that most women may not enter the job market due to family obligations taking precedence or the lack of finding a suitable job. A non-suitable job could be one that is not culturally congruent or a non-gender segregated working environment.

Patriarchal society, women's empowerment and gender balance, although they are not a focus of this study, will be explored in relation to educational innovation as outlined in UAE Vision 2021. The opportunities provided for women to take leadership roles as part of the Emiratisation process in order to be equal contributors to the development of the country, and their support or not of UAE Vision 2021, may influence their motivation to embrace learning strategies that promote HOTS.

1.2.4 Emiratisation strategy. Emirati nationals form 11% of the overall UAE population of 9,456,628 (Abu Dhabi 2, 2016). The diversification of its economy as it expands into services, trade, banking, real estate and tourism is raising the need for Emiratis to increasingly take on positions of leadership and ownership (Fox, 2007; Kirk, 2010). Given that a large part of the UAE workforce is comprised of expatriate residents, it is critical to educate and train its minority national population to fill leadership roles. Although the Emiratisation policy was initiated as a drive to provide more employment opportunities for Emiratis in the

private sector, it has expanded to investing in the skills and capabilities of Emirati nationals to lead the knowledge economy. The Emiratisation Strategy under the National Agenda encapsulates this vision as "unlock[ing] the potential of UAE nationals and enabl[ing] them to be a driving force of UAE's economic development" (Government.ae, 2017f, para. 1).

Most Emirati national youth attend the federal universities. It therefore becomes imperative to ensure that these universities provide a high-quality education that will equip them to cope with the demands of the 21st-century workplace (Quality Assurance Authority, 2017). A strategic objective of the university in which the research is set states: "Prepare qualified graduates in an innovative and supportive educational environment who demonstrate academic excellence and leadership skills" (University X Factbook 2017–2018, 2017, p. 8).

1.3 Rationale for the Study

1.3.1 Rapid growth. The UAE has developed at breakneck speed over the past 45 years, moving from a desert state to a major international business, education and tourist hub (CIA, 2017). Catherwood (2016) describes Dubai's remarkable transformation: "Through audacity, [and] far-sightedness … Dubai has created a futuristic mega-city in the Arabian dust that's now the fourth largest tourist draw on Earth" (para. 5).

The Global Competitiveness Index (GCI), despite its limitations, helps to illustrate the state of a country's progress in its annual report (WEF, 2018). The UAE is ranked 27th globally amongst 137 countries surveyed for the year 2018–2019, while only ten years ago, in 2008, it ranked 50th (Abbas, 2018). The UAE has also been ranked as the most competitive economy in the Arab World (WEF, 2018). Its higher score on the global rankings in 2018 may give the impression that the quality of higher education also ranks highly. However, when the indicators are broken down, they reveal that the UAE excelled in the financial, technology and labour market indicators but scored poorly (53rd) in the HE and skills indicator and 35th in innovation

capability. The GCI states that the poor scores on these indicators are a result of a weakness in the UAE's HE system (WEF, 2018). Buckley et al. (2010) suggest that the data compiled for each indicator perhaps may not be an accurate reflection of reality. This is evident in the HE and training indicator of the GCI, which measures both the rate of enrolment at secondary and tertiary levels and the quality of education (WEF, 2018). Besides measuring quality, it also measures enrolment rates for not only HE but also secondary education within the same indicator. Therefore, the ranking for the HE and skills indicator on the GCI is not an accurate indicator of the quality in HE.

Empirical studies over the past decade reveal that TCP is dominant in higher education in the UAE and that graduates are lacking HOTS (Ashour & Fatima, 2016; Hijazi, Zoubeidi, Abdalla, Al-Waqfi, & Harb, 2008; Lovering, 2012; Solloway, 2016). It can be argued that pedagogic change, being a qualitative process, is influenced by multiple factors. Some of these are the nature and nurture of the actors (such as policy makers, faculty members and students), the environment, the curriculum and assessment strategies (Entwistle & Ramsden, 2015; Webb, 1997). Cheng and Tam (1997) argue that, when it comes to education, "quality" remains a "controversial and vague term" (p. 23) and can be translated differently for different stakeholders (also see Pounder, 1999, p. 156). Internal actors such as administrators, faculty and students may have a different view from external policy makers. Dede (2006) contends that the transition to HOT is an evolutionary process rather than a revolutionary one and needs to be considered within historical context, and not as just one step in the process. The historical background of the UAE's educational system, which is based on TCP descending from the Egyptian models, presents a challenge for rapid progress (Farah, 2012; Findlow, 2005; Tabari, 2014; UNESCO, 2000).

1.4 Research Aim

Fostering HOTS amongst its Emirati national graduates to drive a resilient knowledge economy is a thread that runs continuously throughout the UAE's higher education policies (UAE Vision 2021, 2014). Quality education is encapsulated in UAE Vision 2021 as education that "goes beyond rote learning and encompasses critical thinking" (2010, p. 23). As noted earlier in section 1.1, the educational system in the UAE has been based on TCP (Farah, 2012; Ridge, 2012; Tabari, 2014). Therefore, in the goal of transitioning its educational system to embrace SCP within the tight 10-year deadline, the UAE has given itself a monumental task. Measuring the impact and progress of its policy directives and understanding the enablers and constraints experienced at the ground level would be crucial to its success.

This practitioner-based case study, which explores the pedagogic approaches in an undergraduate programme at two colleges, aims to identify if the SCP is being achieved from the perspectives of faculty and students. This study also aims to identify the enablers and constraints of the current pedagogic approaches practiced in relation to promoting HOTS.

1.5 Research Questions

The main research question (RQ1) is: Do the pedagogical approaches practised in two colleges within a female federal university in the UAE promote the deep approach to learning in order to generate higher-order thinking and are there any differences between the two colleges?

The secondary questions are:

RQ2: Is UAE Vision 2021 recognised amongst students and faculty as a driver of the deep approach to learning in the two colleges?

RQ3: What are the major enablers and constraints to embracing the deep approach to learning during this period of transition?

RQ4: Have other factors, such as pedagogic practice in compulsory education, contributed towards the university students' approaches to learning?

RQ5: Do perceptions regarding change vary between students and faculty in the two colleges and are there any differences between the two colleges?

1.6 Significance of the Study

As the UAE seeks to rapidly transition to a knowledge economy, this study is significant on multiple levels. The study can contribute positively to an understanding and realisation of adapting policy to practice. Enabling and constraining factors emerging from this research could make a useful contribution to the current pedagogic practices to achieve the quality aimed for in HE: they can help to inform policy makers of the current state of the pedagogic approaches; they can be valuable for faculty in helping to understand the perceptions of students and strengthen their approaches to teaching; finally, they can strengthen students' approaches to learning, providing them the context and reasoning for the changes occurring in their learning practices from the viewpoint of policy makers and faculty.

This study also has significance for the UAE's Emiratisation policy (Government.ae, 2017f), as it can broaden Emirati students' perceptions and awareness of the national goals and the responsibility they carry as future leaders of the knowledge economy.

Past empirical studies undertaken in the federal universities over the last decade indicate that the quality of education—and thus the nation's ability to provide skilled graduates for the knowledge economy—is lacking. Empirical studies conducted by practitioner researchers at the federal universities examined some aspects of the SCP. They were conducted from a singular perspective, exploring insights from either students or faculty. In contrast, this

study explores the pedagogic trends from the perspectives of both students and faculty and a comparative study between two colleges elevates this research beyond the boundaries of past research. Other factors that distinguish this study include the following:

a) This study was conducted using a mixed-methods research design that includes a quantitative inquiry, qualitative inquiry and a document analysis. The corroboration of these data sets can provide comprehensive findings through triangulation. It can also draw on the strengths of both methods and offset the weaknesses of the individual type of inquiry (Bryman, 2006; Greene, Caracelli, & Graham, 1989). Except for Solloway, the past research studies cited above were based on either a qualitative or quantitative inquiry. Although Solloway (2016) used a mixed-methods approach, his sample sizes were small: 20 for the quantitative survey and 10 for the qualitative inquiry. Lovering's (2012) sample was 10 faculty members. This study, in comparison, uses a larger collective sample of 302 students and 34 faculty members for the quantitative inquiry and 26 students and 21 faculty members for the qualitative inquiry.

b) It is a comparative study between two colleges, namely the foundation college (FC: the first two years of the undergraduate programme) and the College of Education (COE: the final two years of the undergraduate programme). Past studies have explored first-year students in a single college, except for Al Rasbi (2014). Although her study explored multiple universities, her enquiry was limited to only one aspect of SCP which is the cooperative learning method.

c) This study explores both the approaches to teaching by faculty and the approaches to learning by students, as opposed to past research studies, which have explored either student learning approaches or faculty teaching approaches.

d) The tight deadline has stimulated large investments of financial resources, foreign expertise, curriculum revisions and policy changes. Past research studies that were published even as late as 2016 were conducted before some of the recent government changes, such as the merging of the MOE and the MOHESR in 2016 (Government.ae, 2017e), the Ministry of Education Strategic Plan 2017–2021 (UAE Ministry of Education, 2016) and the launch of the revised 2030 Abu Dhabi Plan (Bell, 2016). Therefore, there exists a research gap in exploring the effects of the ongoing and recent policy changes in HE.

e) The introduction of the electronic quality assurance system in 2016, the decision to abolish the Academic Bridge Program (ABP) in 2018 and the introduction of the Emirates Standardisation Tests (EmSAT) in (2017) are factors that directly influence the pedagogic trends in federal universities. These are recent changes that past studies have not explored.

f) As an outsider researcher at this case study site, researcher bias would be limited and a pragmatic analysis of the data is expected. Most of the past studies were conducted by insider researchers. Ashour and Fatima (2016) based their study on an extensive literature review.

1.7 Dissemination of the Research Findings

The plan for the dissemination of this study is to distribute it to all the parties mentioned above: the policy makers, inspection boards, faculty and students at the federal universities. To this end, dissemination will be achieved through a variety of means, such as publishing in national articles, journals, report centres and websites of the federal universities. It will also be forwarded to the following strategic centres and organisations: The UAE Ministry of Education, Arab Human Development Reports, the Mohammed bin Rashid School of

Government, Center for Higher Education Data and Statistics UAE, the Delma Institute and the Dubai Chamber of Commerce. Articles will also be submitted to international journals on higher education; papers will be submitted to national and regional conferences on education and pedagogy.

1.8 Researcher Positionality

The researcher's knowledge, experience and cultural understandings gained from the role of a youth and teacher educator in the Arab region over the past twenty years, twelve of which were in the UAE, provided the background knowledge and tacit understanding in conducting this dissertation. As a practitioner-researcher, directly involved in curriculum development of 21st century and STEM-based courses for youth, exploring the pedagogic approaches in HE in the federal university under study is anticipated to impact the researcher's professional practice in multiple areas. The extensive literature review and empirical research is expected to stimulate critical reflection on constructivist pedagogy, how it differs from traditional rote learning methods, the impact of globalisation, knowledge economies and the skills required in graduates for the knowledge economies. These are true realities to navigate and apply daily as a professional educator and in curriculum development in the UAE.

Therefore, both professional interest and the current relevance to the UAE and global context and the need to understand and strengthen these areas of the researcher's direct practice motivated the research choice for this study. The researcher also aims to contribute to the changing educational trends in the UAE and contribute to the knowledge of learning and teaching practices.

1.9 Organisational Structure of the Thesis

Although this study is exploring the pedagogic trends in the federal universities in the UAE, an understanding of the background and context of the country may be essential as

external and internal factors may influence pedagogic practices. The historical background, economic development, governance structure, female empowerment, culture and UAE's pursuit of a knowledge economy has been discussed in this chapter.

Chapter 2, the literature review, provides a contextual review of the global pedagogic shifts in recent decades, and the UAE's alignment to the influences of globalisation and internationalisation. It also traces milestone initiatives and policy directives in the UAE's young HE system, debates and justifies the theoretical framework for the study and reviews significant past research studies that are relevant to this one.

Chapter 3 reviews the ontological and epistemological perspectives of this study and justifies the chosen research design and the researcher's reflexivity on the chosen methodology. The type of mixed-methods approach chosen, data collection, samples and ethical considerations are described.

Chapter 4 reports the findings of the document analysis of the relevant and pertinent information found in publicly available documents such as policy papers and media articles. Internal documents obtained at the site are also analysed. The findings of the comparative quantitative and qualitative data obtained from faculty and students from the two colleges are reported in this chapter.

Chapter 5 analyses and discusses the findings in response to each research question. The implications of the study to the local educational sector are considered.

Chapter 6 examines the implications that surfaced from this study in relation to the deep/surface approaches to learning (D/SAL) that are specific to the context of the UAE HE system. Recommendations, the strengths and limitations of the study are discussed before the conclusion.

Chapter 2: Literature Review

This chapter will explore the literature associated with pedagogical changes in higher education in the federal universities in the UAE as it transitions to a knowledge economy. The UAE's alignment to the global pedagogic shifts, the promotion of deep approaches to learning (DAL) in higher education and the role of UAE Vision 2021 as a driver of change will also be examined. The chapter will also discuss the chosen theoretical framework of constructivist pedagogies and argue the use of the deep/surface approaches to learning (D/SAL) model within the context of the UAE educational system and debate the learning styles that promote HOTS.

The impact of globalisation and internationalisation is profound in HE in the emerging countries of the 21st century as HE and the essential skills for the knowledge economy are connected to a country's economic success (chapter 1, para. 4). A working definition used in this study for globalisation as explained by Altbach, Reisberg and Rumbley (2009) is:

> … the reality shaped by an increasingly integrated world economy, new information and communications technology, the emergence of an international knowledge network, the role of the English language and other forces that are beyond the control of academic institutions (p. iv).

Internationalisation is defined as the policies, programs and practices adopted by governments and universities in response to globalisation for economic and commercial advantage (Altbach et. al., 2009). However, as Knight and de Wit (1997) explain, the country's unique culture, traditions, history and priorities can influence the changes and how globalisation is localized. (p. 6). The study will maintain perspective of these influences within the UAE context in responding to the research questions of UAE's transition of its educational system to SCP.

2.1 Global Shift in Pedagogy and the UAE's Alignment

Globalisation and internationalisation have had a direct impact on the policies influencing the direction of the UAE's economy and educational system; UAE being a member country of the GCI is an indication of this as discussed in Chapter 1 (section 1.3.1). As Brookhart (2010), Nitko and Brookhart (2011), Entwistle and Ramsden (2015) and others argue, the global shift in pedagogic approaches over the last two decades primarily seeks to elevate learners' thinking skills from acquiring basic literacy skills like reading, writing, arithmetic and memorisation to critically analysing, evaluating and solving complex problems. The UAE, in seeking to transition to a knowledge economy, has aligned itself to the pedagogic trends encouraged globally in some of the areas described below.

2.1.1. The UAE: A member country in Education for All programmes. The UAE participated in the WEF programmes led by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The UAE, one of 183 member countries, in 2000 adopted the Dakar Framework for Action: Education for All (UNESCO, 2000), which outlines six goals to be achieved by the year 2015. The sixth goal calls for governments and Education for All (EFA) partners to provide quality education. The report notes: "Successful education programmes require … well trained teachers and active learning techniques" (UNESCO, 2000, p. 17).

Past studies conducted in the last decade in the UAE report that education in the UAE is teacher-centred with a rigid curriculum that offers little flexibility for incorporating active learning methods (Farah, 2012, Muysken and Noor, 2002; Ridge, 2010 and Tabari, 2014). Interestingly, *Education 2030 Incheon Declaration: Towards Inclusive and Equitable Quality Education and Lifelong Learning for All*, launched in 2015 by the WEF, affirmed that only one-third of the 183 participating countries met all the measurable goals of the Dakar Framework. One of these unachieved goals was to provide quality education, reinforcing the

need for learning and teaching to continue to move "towards a learner-centred pedagogy" (UNESCO, 2015, p. 14). Learner-centred or student-centred pedagogy, as described within the theoretical framework of this study, stimulates the use of DAL in to promote HOTS (section 2.4.4). The slow progress may indicate that shifting to a student-centred educational system is a far more complex process than anticipated. There may be hidden factors that empirical and in-depth case studies may unveil.

      2.1.2. The Arab Knowledge Project. In alignment with globalisation and the thrust to achieve the status of knowledge economies, the Arab Knowledge Project was launched in 2007 by the Mohammed bin Rashid Al Maktoum Foundation (MBRF) and the United Nations Development Program (UNDP). Its primary goal is to promote HOTS as a key driver for economic development in the Arab region (MBRF & The United Nations Development Programme/ Regional Bureau for Arab States [UNDP/RBAS], 2016). The initiative being led by the MBRF, a UAE national organisation, is indicative of UAE's own vigorous desire to develop its human capital and become a competitive knowledge economy. The Arab Knowledge Report 2010–2011 acknowledges that the main findings of the research studies in the Arab Knowledge Report 2009 point to a knowledge gap in the Arab region and the need to develop its human capital, that is, investing in its citizens to help them reach their potential. (MBRF & UNDP/RBAS, 2010/2011, p. 24).

      2.1.3 Regional and global measuring indices. Many countries participate in annual global and regional measuring indices to assess priority areas that drive economic growth. Perhaps it is important to note that the GCI report states that although the GCI takes the appropriate measures, it cannot guarantee that the data provided by the participating countries is accurate (Schwab, 2018). In the 2017–2018 GCI, UAE ranked 17th in the overall rating while in the 2018-2019 GCI, UAE's ranking came down to 27th with 53rd in HE and 35th in innovation capabilities (Schwab, 2018). The rankings achieved in 2017–2018 and 2018–2019 vary

substantially. This may be a further indication that although global indices can identify general areas for improvement, they cannot replace research studies that provide in-depth insights on the state of the quality of education in a nation.

The Arab Knowledge Index (AKI) developed in 2015 is an outcome of the findings of the earlier Arab Knowledge Reports. The reports pointed to the lack of an evaluating and monitoring system for higher education specific to the Arab region (MBRF & UNDP/RBAS, 2016). The AKI is a composite of international measuring indices adapted to suit the local context, its challenges and the role of the Arab youth in a knowledge economy (AKI, 2016). The AKI is also specific to each country. The approach used for developing this index was to focus on knowledge as an output and a tool for economic advancement. The knowledge capital and knowledge production output indicators include quality education characterized as knowledge creation and an aptitude of higher order thinking. The Arab Knowledge Report of 2014, explains this indicator as, "… innovation, scientific research and constructive criticism." (p. 114).

Its findings also state that dependence on "traditional teaching methods based on memorization" … [and the] "lack of active student participation" (p. 31) is experienced in pedagogical approaches in higher education institutions in the UAE. Reports have suggested that university students in the UAE "do not read books, but memorise parts from the summaries and the presentations of the professors" (MBRF & UNDP/ RBAS, 2014, p. 92). The UAE ranked highest overall and in HE of all the participating Arab countries in the AKI 2016. However, when compared to the quality of HE education in developed countries, the AKI reveals that Arab countries are lagging and require continued focus (AKI, 2016). Figure 2.1 shows the results of the Arab HE Index.
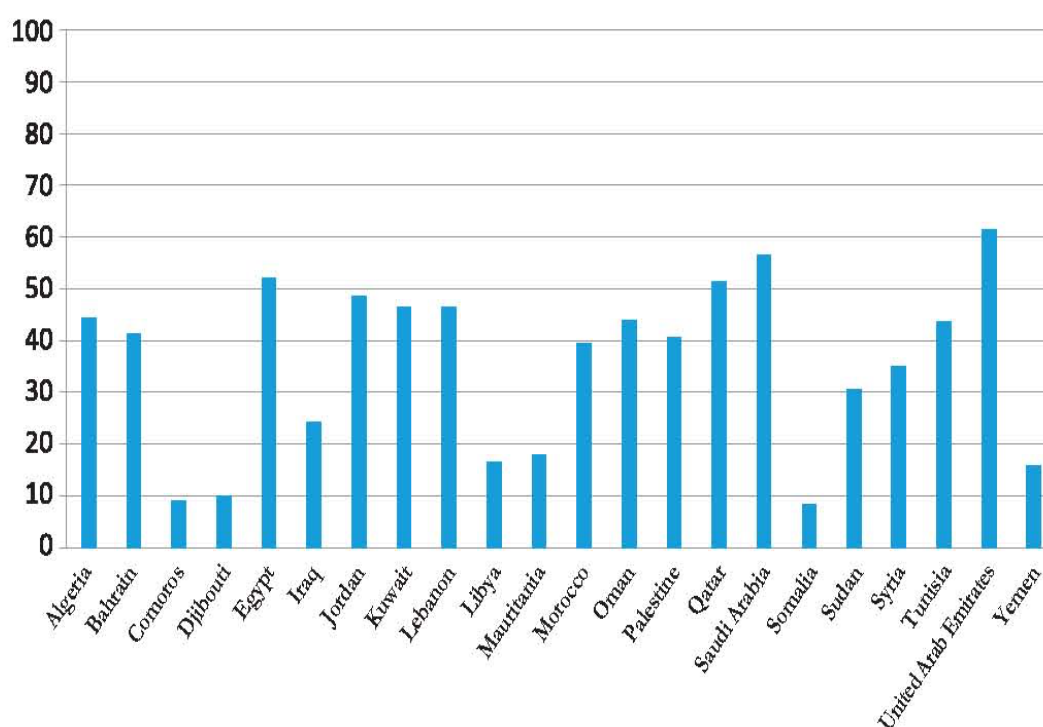
Figure 2. 1 *Arab HE Index 2016.* (Source: MBRF & UNDP/RBAS, 2016, p. 49).

2.2 UAE Vision 2021: Leading the UAE Into the Knowledge Economy

UAE Vision 2021 was initiated in late 2010 to lead the UAE into the knowledge economy by driving growth in six national priority areas. Education is given prominence as it is anticipated that growth in the educational sector will influence growth in the other sectors. The National Agenda explains this goal as:

Education is a fundamental element for the development of a Nation and the best investment is in its youth. For that reason, the UAE Vision 2021 National Agenda emphasizes the development of a first-rate education system, which will require a complete transformation of the education system and teaching methods. (UAE Vision 2021, 2014, para. 12).

UAE Vision 2021 envisions that this change in its educational system will be achieved "through a progressive national curriculum that will go beyond rote learning to encompass critical thinking … equipping our youth with essential skills and knowledge for the modern world" (2010, p. 23).

As discussed in Chapter 1, TCP using the rote learning approach has been dominant in the UAE. Thus, the UAE faces a huge challenge in moving its educational system from TCP to SCP. The UAE Vision 2021 National Agenda, launched in 2014, is a seven-year plan developed by over 300 government officials to monitor progress and drive continued change. The Agenda includes performance measurement indicators that are compared to global benchmarks in each of the national priority areas to ensure targets are achieved by 2021 (UAE Vision 2021, Although emphasis for change is placed on both compulsory education in public schools and federal HEIs, there are no performance indicators to measure the quality of higher education amongst these indicators (UAE Vision 2021, 2014, p. 5). The current indicators include the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Studies (TIMMS), both of which assess students in compulsory education. As there are no similar international assessments to evaluate HE, monitoring and evaluations are undertaken within universities and through empirical research studies. This may account for the lack of accurate measurement for the GCI, which as discussed in Chapter 1 (section, 1.3.1) revealed that the HE and training indicator is a measurement of both the rate of enrolment and quality of education (Schwab, 2018).

2.3 Western Models Within an Emirati Context

The Emirati culture, traditions and religion are rooted in the dominant Arab and Islamic identities of the Middle East. Findlow (2005) among others reports that the UAE adopted the Egyptian model of education in the early years of the federation, largely due to the strength of

the Arabic language and its Islamic identity, which it sought to preserve as a young nation. Suliman (2000) and Khelifa (2010) note that curriculum, textbooks and teachers from the surrounding countries were predominant in the UAE's educational system until 1985 when UAE developed its national curriculum. Farah (2012) claims that the curriculum was however restricted to textbooks and prescribed activities within them without the flexibility for educators to add alter resources. These models being based on TCP, as Davidson (2008) argues, impeded the UAE's educational system from using SCP.

Fox (2008) claims that it was inevitable for the UAE to raise the quality of HE over the last decade as it pursues economic development for the 21st century, where education and development run parallel. As Altbach et al. (2009) discuss, the English language is taking prominence in global contexts in recent decades due to its dominance in scientific and information and communications technologies. Therefore, globalisation, knowledge economies and the need to develop its human capital were causes for the shift in the UAE to transition from the Egyptian-based curriculum to western models with the English language as the medium of instruction in HE (Khelifa, 2010).

As Khelifa (2010) reports, western educational systems, being forerunners in educational quality, were anticipated to change the UAE's educational system from one steeped in TCP to one that promotes SCP. Fox (2008) amongst others explains that two of the UAE's three federal universities adopted western models, largely imported from the United States (US). However, as Khelifa (2010) and Abdulla and Ridge (2012) report, there is concern that adopting western models may lead to an increase in the influence of western culture and ways of thinking amongst the Emirati youth. The faculty at the federal university where the case study was undertaken are western or western-educated, who, being in daily contact with students, may inadvertently and subconsciously exert an influence. The university therefore has stringent requirements when it comes to academic freedom. There is no restriction on

freedom of information and ideas that expose the students to a wide range of viewpoints however this must be balanced with the respect for the principles of Islam and the values of the Emirati culture (University X's Faculty Handbook 2017–2018, 2017). As Kelifa (2010) argues, the UAE's strong hierarchical, patriarchal and tribal cultural background, which prioritises strong family bonds and alliances, remains dominant, making the influence of western culture superficial.

One of the goals of the National Agenda over the next five years is to train 10,000 Emirati teachers who will take up 90% of teacher positions in Public Schools (UAE Interact, 2015, Zaman, 2016). The College of Education (COE), one of the colleges under study, is a teacher education college that trains Emirati students for teaching positions in compulsory education. Graduate teachers from COE are anticipated to influence the educational transition from TCP to SCP in compulsory education, having been taught in that way in their undergraduate teacher preparation program. Aiding in this educational transformation and nurturing the UAE identity and culture are significant reasons for hiring Emirati teachers in public schools (UAE Interact, 2015).

However, this goal stated above may be an unrealistic goal as Pennington (2014) and Buckner (2017) claim that teaching jobs are least desired by Emirati males due to lower salaries and perceived low status. Statistics in the 2013–2014 academic year revealed that only 5.8% of the teachers working for the MOE were male (Swan, 2016). Dajani (2016) further affirms that low salaries, being overworked and a lack of motivation are driving Emirati male teachers to leave their jobs. Buckner (2017) also found that Emirati female teachers in public schools were the least satisfied with their professions in comparison with expatriate teachers in public and private schools. She clarifies that this dissatisfaction arose mainly from factors such as restrictive administrative policies, lack of autonomy in decision making and lack of professional support (p. 30). These findings may indicate the monumental task that may be

ahead for policy makers in the quest to transition to SCP and for preserving cultural identities amidst the influence of western educational models.

Before taking a closer look at the various policies and strategies that have influenced this change in HE in the UAE, the theoretical framework for this study and the definitions that are used consistently throughout this research paper (HOT, LOT, SAL and DAL) will be explored in more detail. This will set the foundation and focus for the rest of the thesis, influencing the choice of the research design and the analysis and discussion of the findings.

2.4 Theoretical Framework

The theoretical framework for this study is embedded in the epistemological viewpoint of constructivism, the basic premise of which is that knowledge is essentially constructed by the learner, wherein the learner is in the centre of the learning process and is actively engaged (Baviskar et al., 2009; Guba & Lincoln, 1994; Schunk, 2012). Much debate surrounds the ambiguity of the meaning and use of constructivism (Harlow, Cummings and Aberasturi, 2006). In the strictest sense constructivism is termed as a philosophical and epistemological understanding of the nature of learning: however, as Schunk argues, general predictions made of constructivism can be tested even if interpretations such as, "what does it mean that learners construct their own meaning?" vary (2012, p. 30). Proponents of constructivist theorists argue that truth is not absolute but is mentally constructed from the personal beliefs and experiences of an individual and is subjective, differing from person to person (Simpson, 2002). Constructivism is aligned to social cognitive theory (Schunk, 2019) which Bandura (1997) and Bredo (2006) claim that the interaction of the situated context, beliefs and values influences the learning process.

Constructivist learning theories have become more prominent in recent decades. Schunk (2012) proposes that they have affected research and theory influencing curriculum and teaching practices.

2.4.1 Constructivist learning theories. Entwistle argues that it is challenging to classify constructivist learning theories into a single framework, as there is not a single cumulative and linear theory on the nature of constructivist learning (2000). This dilemma has led to this study being underpinned by multiple leading constructivist theories, including those of Piaget (1953, 1973) and Vygotsky (1978), which have been the cornerstones of constructivism. Dewey (1933, 1938) and Bruner (1960, 1966, 1973, 1996) also contributed to the constructivist models used in learning and teaching today.

Schunk (2012) and Baviskar et al. (2009), amongst others, note that Bloom's (1956) classification of higher and lower levels of educational objectives have been pervasive in learning and teaching methodologies for almost 50 years. Although these levels may overlap and may not be clearly delineated, they appear to provide a basis for categorising the types of thinking skills generated. Baviskar et al.'s (2009) explain that the constructivist framework of the four critical elements in constructivist pedagogy runs parallel to the learning theories of Piaget, Dewey and Bruner. These are: building on prior knowledge; creating cognitive dissonance (the learner is aware of the difference between prior knowledge and new knowledge); application of the knowledge and reflection on the learning.

Although constructivism encourages student-centred learning, constructivism advocates that the teaching practices and the way the lesson is structured can stimulate students to engage actively with the content (Schunk, 2012). Tasks can include reading, writing, being questioned, allowing questions, requiring students to construct a practical model to connect theory, reviewing through role play and quizzes and encouraging reflection (Biggs and Tang, 2007; Entwistle and Ramsden, 2015; Marzano, 2011).

Baviskar et al. (2009) affirm that constructivist learning features include being cognitively active, that is, using analysis and evaluation, with new knowledge built on prior knowledge and learning occurring by applying or constructing through self-reflection and critical analysis. These same skills are considered by policy makers to be essential for the 21st-century working world, and include understanding, analysing, evaluating and synthesising (NQA, 2013 cited in chapter 1, para. 5). Global pedagogic trends appear to be moving in the same direction (section 2.1) by requiring these same skills—identified as HOTS—to be cultivated in primary, secondary and tertiary education. For example, *Shaping the future, we want*, the final report of the UN Decade of Education for Sustainable Development, encourages the use of pedagogic strategies that "stimulate pupils to ask questions, analyse, think critically and make decisions" and are "more student-centred, moving from rote memorization to participatory learning" (UNESCO, 2014, p. 65). These same pedagogic approaches are encapsulated in UAE Vision 2021 (2010, p. 23) and the UAE National Qualifications Authority (2013, p. 11). The Vision, as well as the mission statements and strategic objectives at University X (where the case study was undertaken), state that student-centred pedagogic approaches are pursued, and skills like critical thinking, creativity, analysing, evaluation, innovation and research form a part of the institution's desired learning outcomes (University X Faculty Handbook 2017–2018).

The term "constructivism," however, remains vague and, as Cronje (2006) argues, constructivist pedagogic approaches can range anywhere from radical to moderate to "pseudo-constructivism." In radical constructivism, the learning process of discovery works from the bottom up, as it is led by the student (Schunk, 2012). In moderate forms of constructivism, knowledge is co-constructed between those who are knowledgeable (faculty members) and those who are competent learners (Bandura, 1986; Guba & Lincoln, 1994). Pseudo-

constructivism, as Techart (2003) explains, follows traditional TCP but is masked with constructivist terminology however, constructivism is not practised.

In analysing the UAE's policy directives, such as those mentioned in chapter 1 (para. 5), the direction sought in the UAE framework is one of a moderate type of constructivism, wherein knowledge is co-constructed by faculty and students (University X Faculty Handbook 2017–2018 and Coburn, 199). Coburn (1991) explains this interface of curriculum and student within a specific context can be influenced by the culturally held beliefs which Coburn (1991) termed as contextual constructivism. Coburn (1991) argues that contextual constructivism can raise new research questions and paradigms.

Based on these assumptions (linking constructivist pedagogic learning theories to the learning outcomes sought by the UAE educational systems and at University X) the moderate type of constructivism was selected for this study to form the theoretical framework.

Table 2. 1 Parallel Concepts of Constructivist Learning Theories

Piaget	Dewey	Bruner	Vygotsky
Prior knowledge	Metacognition	Prior knowledge	Prior knowledge
Metacognition	Critical thinking	Make meaning	Asking questions
Critical reasoning	Analyse	Inductive reasoning	Decision making
Self-reflection	Evaluate	Decision making	Support/guidance
Group work	Reflection	Problem solving	Problem solving
Activity-based	Problem Solving	Activity-based	Practical tasks

Therefore, the theoretical framework includes the foundational concepts as listed in Table 2.1 above as proposed by Piaget (1953, 1973), Dewey (1933) and Bruner (1960), whose terminologies may differ but the concepts remain similar. These theories align with numerous studies that followed, including Baviskar et al. (2009), Biggs and Tang (2007), Brookhart (2010), Cronje (2006), Entwistle (2000), Entwistle and Ramsden (2015), Guba and Lincoln (1994), Marzano (2011), Pask (1976) and Schunk (2012). The same concepts listed in Table 2.1 above are the characteristics of SCP stimulating DAL and the resultant expected outcomes

of HOT (Brookhart, 2010 and Hanover Research, 2011). These are promoted as key features of today's knowledge economies (UNESCO, 2000; WEF, 2015 cited in section 2.1).

Building on the foundational theories of constructivism, SCP / TCP, higher and lower-order thinking and the deep/surface approaches to learning critical to this study are explored below.

In this study, the terms SCP / TCP will be used to refer to teaching approaches used by faculty while the terms DAL, SAL and deep / surface approaches to learning (D/SAL) shall be used to refer to the learning approaches taken by the students

2.4.2 Higher-order thinking. Brookhart (2010) and Hanover Research (2011) propose that changes in the global economies over the last few decades have reshaped the types of abilities, competencies and skills that are essential for the job markets in the knowledge economies of the 21st century. As explained earlier, the term "skills" will be used throughout this study in reference to abilities, competencies and skills essential for the 21st-century knowledge economies. The term "higher-order thinking" (HOT) is ubiquitous in educational research and policy documents, as cited by numerous educators and researchers such as Brookhart (2010), Nitko and Brookhart (2007), Entwistle and Ramsden (2015), Zohar and Dori (2003) and the WEF (2015). However, it remains vague and its prominence in the learning and teaching process in the 21st century is an area of debate.

The policy directives in UAE Vision 2021 (2010) and the UAE NQA (2013) encourage quality education that promotes HOT in its higher education institutions (HEIs). The OECD developed a global Skills Strategy to aid countries in developing policies to promote essential skills in education to drive economic growth (Organisation for Economic Co-operation and Development [OECD], 2012). The OECD Skills Strategy shifts the way of thinking from the traditional measures of qualifications attained over a number of years of education to a wider view of the skills that can be used in the workplace (p. 27). OECD documents postulate that

critical thinking and creativity are two higher-order skills that are necessary in the 21st century (p. 27). The WEF (2015) *New Vision for Education* report encourages international pedagogical standards to stimulate HOTS, which it defines as:

> The ability to identify, analyse and evaluate situations, ideas and information to formulate responses to problems. Creativity is the ability to imagine and devise innovative new ways of addressing problems, answering questions or expressing meaning through the application, synthesis or repurposing of knowledge (p. 3).

Globalisation has influenced policy makers in the UAE to align national pedagogic practices to internationally recognised trends. In order to match the skills of graduates to those required in the labour markets the NQA (2013) states, "All skills needs of the labour market must be translated into relevant curricular and training programs" (p. 10).

Resnick (1987), one of the early proponents of HOT, an outcome of SCP posits that some of the attributes of HOT are that it is non-algorithmic, allows for the analysis of complex matters, addresses uncertainties, applies a variety of strategies and yields multiple solutions. Brookhart (2010) breaks down HOT by dividing it into three categories: transfer, critical thinking and problem solving. Brookhart argues that the transfer of information converts it into useable forms in the practical world outside of the educational institutions and, while committing information to memory requires thinking, it is the transfer of this information that requires HOT (p.3). Barahal (2008) describes critical thinking as the ability to analyse, reflect, critique, compare, connect, explore differing viewpoints and find complexity. Problem solving, the third category of HOT as defined by Brookhart, requires complex or HOT skills when learners are confronted with unfamiliar situations or problems.

Therefore, it can be argued that HOTS such as critical thinking, analysing, evaluating, applying and synthesising are essential for problem solving and the development of such skills would require more than the mere recall of information (Barahal, 2008; Biggs & Tang, 2007; Brookhart, 2010; Entwistle & Ramsden, 2015; Nitko & Brookhart, 2007; Zohar & Dori, 2003).

2.4.3 Deep and surface approaches to learning. The deep/surface learning framework is recognised as the most widely used framework in higher education in relation to approaches to learning adopted by students. According to Tormey (2013), the most cited authors associated with this concept are Biggs and Ramsden. This framework, as argued by Biggs and Tang (2007) and Entwistle and Ramsden (2015), suggests that specific teaching approaches can stimulate students to seek meaning and critically analyse content as opposed to memorising content for short term recall.

The origin and history of the deep and surface approaches to learning and categorising the varying levels of understanding is seen in the work of Marton et al. (Marton and Säljö, 1979). Their study indicated that learning processes are influenced by the reader's intention, whether it is to seek meaning or to respond to anticipated questions. They identified two distinctive learning approaches: SAL and DAL. SAL is characterised by content being committed to memory without making sense of it and with superficial engagement for short-term retention, aiming for achievements in assessments. DAL, on the other hand, is characterised by students reading to understand, analyse, evaluate and apply content to other contexts and use it for problem solving and decision making (Marton & Säljö, 1976).

Marton and Säljö's (1976) original model of SAL and DAL was further developed by a broad spectrum of researchers and academics, particularly by four groups who became major proponents of the model (Howie & Bagnall, 2013). The four groups are the Lancaster group led by Entwistle, an Australian group by Biggs, a Swedish group by Marton and a Richmond group by Pask (Beattie, Collins, & McInnes, 1997).

2.4.3.1 Learning Tasks. In Marton and Säljö's (1976) seminal work, the learning task was reading. Reading with comprehension signified that a DAL was being used while reading to memorise indicated that a SAL was used. Guthrie et al. (2012) report that reading to understand a complex text involves meta-cognitive skills. Guthrie et al. (2012) findings align with Marton and Säljö's (1976) seminal work of reading to understand being a complex process indicating that a DAL is being used. Pask (1976) proposed that students can be encouraged to apply DAL by creating active learning processes that include relating ideas, identifying patterns and using evidence to analyse the logic behind the argument.

Other learning tasks proposed by Marzano (2007; 2011), Barahal (2008), Brookhart (2010) amongst others include: visual representation through audio-visual aids, narratives, stories, drama or role-play; note-taking as it crystallises concepts from their personal and critical points of analysis; questioning or quizzes; collaborative learning and non-linguistic representations such as diagrams, maps, graphs, charts, physical models and pictographs where information must be analysed and processed.

In 2015, the WEF, in support of SCP, said that the largely unfulfilled goal of the Dakar Framework (UNESCO, 2000) to ensure quality education by moving "towards a learner-centred pedagogy" continues to be a priority (UNESCO 2015, p. 14). However, controversy surrounds the deep/surface approach to learning (D/SAL) model in recent academic literature. Table 2.2 lists the characteristics of the deep/surface approaches to learning (Biggs & Tang, 2007; Entwistle & Ramsden, 2015).

2.4.3.2 Critique of the D/SAL model. A prominent critique is that this model became a dominant and ever-expanding paradigm that is trusted and used exclusively in educational research prematurely, before it was adequately refined. Case (2008), Haggis (2003) and Malcolm and Zukas (2001) are a few of the proponents of counterarguments to this model.

Table 2. 2 Characteristics of the Deep/Surface Learning Approaches Model

Approaches to Teaching and Learning	Characteristics	Student Learning Approaches	Faculty Teaching Approaches
Surface Approach to Learning	Memorisation (Rote Learning Strategy) Finding "right" answers Lack of analysis Intent on passing grades Passive learner Lack of reflection Fear of failure Unable to apply content in other contexts	Memorisation for short term recall. Inability to understand content Main intent is to pass exams Non-academic priorities take precedence Workload is overwhelming Insufficient time High anxiety about exams Intent is to earn degree quickly and secure a good job	Lack of drawing out meaning from content Piecemeal teaching Providing insufficient time for tasks Breadth rather than depth Assessments are short answers or multiple-choice questions Exerts undue pressure
Deep Approach to Learning	Student actively engaged in the learning process Seeking meaning Meta-Cognition Active and critical engagement with content Connecting content to prior knowledge Critical analysis Applying content to other contexts Synthesising new knowledge	Curious Seeking meaning Actively engaged in learning process Excitement in learning Prior knowledge Evaluation Analysing Applying Synthesising new knowledge	Draw out meaning from content, Connecting prior knowledge Adult or peer support (scaffolding) Engaging students actively Uses questioning method Discussions Allows student questioning Provides problem solving situations Interlinking facts and not just independent bits of information Emphasises depth instead of breadth Outcome-based curriculum Formative assessments

They claim that the lack of competition from alternate models, as well as the need (at the time) for a unified framework to understand student learning approaches (and whether they were fixed or varied), resulted in the dominance of the D/SAL model.

Howie and Bagnall (2013) cautioned that the model's core meaning, theoretical base and structure were underdeveloped, given that it was quickly accepted without challenge. Tormey (2013) argues that this is a simplistic model, describing only two approaches to learning that are in opposition to each other (with SAL representing memorisation and rote learning and DAL, meaningful learning). Furthermore, this model has not evolved with changing learning theories or psychology over the last 40 years and lacks empirical predictive validity (p.4).

Tormey argues that the model does not take into account other factors such as motivation, psychology or effects of the educational environment that may influence educational achievements. Motivation can be an influencing factor in how students engage with the content as Willms (2003) explains that one of the biggest challenges that educators face is engaging students who lack motivation. Guthrie, Wigfield and You (2010) claim, "motivation is what energizes and directs behavior and often is defined with respect to the beliefs, values, and goals individuals have for different activities" (p. 602).

In relating this factor of motivation to students in HE, intrinsic motivation could be triggered by some factors such as an interest in the topic or personal satisfaction or reward; extrinsic if external rewards such as a reputable or high salaried future job prospect. Other factors that stimulate motivation are self-efficacy and social motivation. In the case of learning and teaching, as Guthrie et al. (2010) propose, motivation can influence behaviour and cognitive processes. High intrinsic motivation can stimulate effective and meaningful engagement in the application of the learning tasks. As Guthrie et al. (2010) explain, when the

cognitive skill is applied in the learning task of reading, the meaning of complex texts is generated by processing the individual words.

Haggis (2003) contends that although DAL is related to understanding and sense making, it is ambiguous how SCP would be applied in varying learning disciplines or with different educators. Interestingly, Lawless and Richardson (2002) found students in the arts disciplines scored higher when applying DAL than students in the science disciplines. Meanwhile, Yin (1999) found that students in language and health disciplines scored significantly higher using DAL than students in construction or engineering disciplines Entwistle (1997) also contends that the key features of the D/SAL model do not transfer equally across all disciplines. He claims, "specific processes involved in seeking deep understanding, as well as the balance between them, must vary across subject areas" (p. 216).

However, besides the deep/surface learning model, a third option emerged from research: the strategic approach to learning. This is described as a planned, methodical and monitoring approach to learning aimed at maximising performance in assessments and achieving high grades (Entwistle & McCune, 2004). However, Biggs, Kember and Luang (2001) contended that the dualistic deep/surface approaches to learning model was sufficient as these were the most essential factors for faculty when it came to selecting the pedagogical approach to use. Entwistle maintained the validity of the dualistic D/SAL model and argued that the strategic approach is not another learning approach, but rather presents factors that influence learning strategies such as organising, monitoring and managing time and efforts (2009, p.38). However, he modified the Approaches to Study Skills Inventory for Students (ASSIST) to include constructs for the strategic approach (Entwistle & McCune, 2004, 2009).

Although Marton and Säljö (1976) characterised D/SAL distinctly as meaningful learning and rote memorisation, in recent decade others have contended that memorisation can be a part of the DAL. Entwistle (1997) argues that memorisation, "is a necessary precursor for

understanding, and for other purposes is a way of reinforcing understanding' (1997, 216). This is also seen in research studies on the learning approaches of Chinese and East Asian learners, who are classified as rote learners, which consistently revealed higher academic scores in comparison to their western counterparts who used DAL (Watkins & Biggs, 1996, 2001). Biggs (1996) asserts that Chinese education is based on rote memorisation to the extent that Chinese learners are regarded as "tape-recorders" (p. 47). However, Watkins (2000) explains that memorisation in the Chinese learner is only one part of the learning process and On (1996), Marton, Dall'Alba and Tse (1996) and Cooper (2004) claim that memorisation through repetition deepens their understanding and leads them to reflection and questioning. Marton et al. (1996) defend this type of learning as memorisation with understanding. Mok (2006) also underscores that despite the constraints of TCP and assessment-driven approach, rote learning and large class sizes, comparative research studies reveal that Chinese learners are consistently outperforming their western counterparts.

On (1996) explains that memorisation and the learning approach in Chinese learners is rooted in their culture and traditions, stemming from Confucian teachings. This cultural and traditional influence has overridden the superficial engagement—on the contrary, repetition takes the learning to a deeper level (Cooper, 2006). Cooper differentiates this as memorisation with understanding as opposed to mechanical memorisation, which is rote learning as indicated in SAL (p. 293).

In attempting to further understand the continued use of the D/SAL as a leading model in educational research, as Biggs (2003), Ramsden (2003) and Entwistle (2009) note that it has been useful as a conceptual framework in HE and has helped faculty in constructing their teaching approaches and course development (Entwistle & McCune, 2004). Webb (1997) also justifies its use, as he explains that the model has gained foundational status in educational research, development and practice in HE due to the power of the metaphor, its simplicity and

universality. Webb (1997) cites Kuhn (1970), who argues that paradigm shifts provoke a tension between past concepts giving way to new ones, as it is easier to base research on accepted paradigms. Therefore, Webb proposes that the D/SAL metaphor became a readily embraced and convenient model as it presented a "paradigm shift" while maintaining a continuity with the past (1997, p. 196).

Giving due consideration to the use of the D/SAL framework for this study, the application of SCP to cultivate skills for knowledge economies has become a central paradigm in international and national policy documents. For example, one of the goals outlined in the Dakar Framework to achieve quality learning is termed "active learning techniques" (UNESCO, 2000, p. 17 as cited section 2.1). The Final WEF Report (2015) states that to ensure quality in education, learning and teaching should move "towards a learner-centred pedagogy" (section 2.1). UAE national documents specify that learning for the knowledge economy requires "[going] beyond rote learning to encompass critical thinking" (UAE Vision 2021, 2010, p. 23 as cited in section 2.2). The Arab Knowledge Report 2010–2011 explains this change required in pedagogic approaches as necessary "to make a quantum leap from 'traditional pedagogy' prevailing in the educational systems in the Arab region and which is based on memorisation and dictation into "constructivist pedagogy" (MRMF & UNDP/RBAS, 2010/2011, p. 43). The same report states that the skills of analysis, critical thinking, evaluation, problem solving, decision making and meta-cognition can be gained by applying the constructivist pedagogy. Ultimately, within the context of the UAE and the policy documents that influence the pedagogic approach in the federal universities, there appears to be a clear distinction of moving from TCP to SCP.

Another factor that weighed towards using the model is the availability of a widely used and validated instrument (ASSIST) if a quantitative inquiry was to be made. The independent

variables are clearly identified with four dependent variables to each one which indicates various aspects of the model can be tested.

Additional factors that can be explored through using this model are motivation and the influence of discipline variances in applying this model. The number of questions on the instrument appears to be the right number, not too few that it may provide insufficient data and not too many that it will be tiresome to complete.

If, alternately, a qualitative inquiry is chosen, the researcher being aware of the limitations could prompt questions to evoke responses that may inform how these other factors mentioned above influence pedagogic practice or the pursuit of constructivist pedagogy. Therefore, the D/SAL model was chosen as one of the theoretical frameworks for this study with an awareness of its limitations which was raised above are: i) D/SAL are at opposing ends of the continuum, ii) memorisation vs meaningful learning, iii) other factors such as psychology, achievement, motivation and content and iv) may vary across disciplines.

Haggis (2003) proposes research though aligned to existing theories should also stretch the boundaries to "know not only more but differently and to keep on extending the range of our different ways of knowing" (p. 389).

The awareness of the relevance of these limiting factors and ambiguities described above will alert the researcher in examining and evaluating the primary data (the findings) from the study. Divergent factors and differing outcomes will be weighed against the theory to evaluate the reality of the outcomes within this context. Lessons drawn from the studies of the Chinese learner, context and cultural influences on the learning approaches will be considered, analysed and debated in the discussion section of this study.

2.4.4 Constructive Alignment and SCP to promote HOTS. Biggs and Tang, who coined the term 'constructive alignment' in 1999, claim that in the constructivist theory of learning, alignment between the learning and teaching activities and the assessment tasks is

essential to achieving the intended learning outcomes (2011). The educator therefore aligns the learning environment, learning tasks and assessments and includes activities that can provide the practical application that is related to the content and intended learning outcomes. Student performances are assessed against the intended learning outcomes. Biggs and Tang (2011) contend that constructive alignment is not only about what educators do but it is also about how students learn. They agree with Suell who suggests "what the student does is actually more important in determining what is learned than what the teacher does' (1986: 429). Biggs and Tang contend that by using constructive alignment to design curricula, intended learning outcomes are achievable (2011, p. 97).

As Black et al. (2006) and Entwistle & Ramsden (2015) amongst others postulate, the instructional design of a course based on the constructivist learning theory can stimulate HOTS as outcomes of using SCP. SCP involves the student being an active participant in the centre of the learning process, by relating ideas and applying them in problem solving and decision-making processes (Biggs & Tang, 2007; Entwistle & Ramsden, 2015; Marzano, 2007, 2013; Pask, 1976, 1988). Black et al. (2006) posit that successful learners use meta-cognition such as self-regulation and cognitive knowledge to achieve understanding. They suggest that "learning how to learn … seems to have the potential to promote pupils' autonomy in learning" (p. 130), implying that the "learner can not only give meaning to the learning, but that she can also create new learning tools" (p. 129). HOTS are the intended learning outcomes pursued by UAE Vision 2021in the transition to SCP. Examples of HOTs include: thinking critically, analysing, processing information, synthesising information, problem solving and decision making. These outcomes can result from using SCP (De Bono, 1985; Perkins & Grotzer, 1997; Resnick, 1987 as cited in Zohar & Dori, 2003). This implies that teaching and learning experiences driven by SCP promote higher-order thinking.

2.5 The Influence of Faculty on Student Learning

Learning and teaching are inextricably linked, and to teach well one needs to be open to learning how students learn (MacFarlane, 2015; Entwistle & Ramsden, 2015). The Teaching and Learning International Survey (TALIS) says that beliefs, attitudes and practices of educators/faculty influence student motivation and achievements (OECD, 2009).

Windschitl (2002) argues that the main challenge educators face is not the learning of new skills, but rather in the choice of constructivist instruction strategies that will match the environment, traditions and culture of the students (Windschitl, 2002). Hargreaves (2004) contends that intrinsic motivation of the educator such as personal teaching philosophies can influence teaching methods. Dinham and Scott (2000), who explored international patterns of satisfaction and motivation amongst educators in seven countries, found that dissatisfaction amongst teachers or faculty often stemmed from external factors such as increased workloads, the rapid pace of change and pressure from government or employer directives. Educators argue that it is difficult to structure a model that will be an ideal framework for instructional strategies for every class and for every student, given the diversity of learners and classroom dynamics (Marzano, 2007). Marzano (1988) posits that the expert educator should have a good understanding of the content, will carefully plan the lessons, evaluate the process and would be willing to change strategies to best enhance student learning.

2.6 National Research Studies

In reviewing past research, the short life span (20–40 years) of higher education in the UAE federal universities and the speed at which it has grown must be considered. His Excellency Dr Ahmad bin Abdullah Humaid Belhoul Al Falasi, the Minister of State for Higher Education, frames this perfectly:

"Before we address higher education in the UAE, we must bear in mind that the

UAE was only established in 1971. We are a young nation. My late father had to

go abroad to Egypt for his education as this was the only option back then. (Oxford

Gulf and Arabian Peninsula Studies Forum" (2017, p. 32).

The progress gained in a relatively short period may indicate that there are rapid and

constant changes to improve the system in the UAE. Research studies conducted a decade ago

may not accurately portray the current state: they do however, provide a realistic lens of its

progression over the past decade.

2.6.1 Research studies in the UAE on the quality of education. *The Arab Human

Capital Challenge: The Voice of the CEOs* is a research study undertaken in 18 countries in the

Middle East to identify the issues hampering sustainable growth and development (MBRF &

PricewaterhouseCoopers Intelligence & Strategy Unit, 2007). The study identified weaknesses

in human capital development and deficiencies in the educational system as the major factors

hindering growth. Industry leaders rated analytical and innovative thinking skills (amongst

other transferable skills) at 90% or above as a requisite for employable graduates today.

Countries in the Gulf region rely on a foreign and expatriate labour force due to their low

population rates. The study also revealed that the productivity and quality of expatriates in the

Gulf countries was far superior to the national workforce at all management levels (p. 5).

Attributing this gap to the educational system of the Gulf countries, up to 75% of business

leaders stated that the education system needs to shift from its current rote learning methods to

inquiry-based learning. In this study, inquiry-based learning is described as "a form of active

learning where progress is assessed by how much students develop their critical and analytical

skills" (MBRF & PricewaterhouseCoopers, 2007, pp. 29–30). This description is aligned to the

characteristics of the constructivist pedagogy and the D/SAL model (section, 2.4.3).

Muysken & Nour's (2006) study evaluated the quality of graduates entering the labour markets from both public and private universities in the UAE. The sample for the survey included 40 policy makers and educational experts and five interview participants. The findings conclude that a low-quality education in compulsory and tertiary education is a result of insufficient monitoring, planning and assessment of educational needs. They also conclude that graduates do not meet skills essential for the UAE labour markets.

Other research studies in the UAE exploring the pedagogic approaches in the federal universities were typically conducted by practitioner researchers within the universities they taught at. Russell's (2004) case study of 38 students he was teaching revealed that SAL for knowledge acquisition and DAL for meaningful understanding on a personal level was preferred by the students. Although Russell's research did not analyse the teaching practices of faculty, it helped to highlight the beliefs and preferences of the students who participated in the study regarding approaches to learning. Hijazi et al. (2008) conducted a literature review to analyse the Dubai Labour Market Survey of employers and employees to gauge the quality of graduates from the three public and 55 private universities in the UAE. Their findings concluded that one of the challenges impeding the progress of quality higher education is the lack of aligning HE courses to the needs of the labour market, and specifically to Dubai's strategic goals.

Lovering (2012) studied the perceptions of international faculty who designed and implemented the curriculum at a women's college. Again, this was a practitioner-based research study conducted at the college she taught at. The study explored the influence of social, cultural and religious factors on educational practice, standardised testing and the constructivist curriculum within the Emirati context. The results show that seeking meaning and the use of standardised testing co-existed in the site under study. The curriculum was co-constructed by her colleagues in her department.

Al Rasbi (2014), researched one aspect of SCP which is working in groups. She found that it is a preferred pedagogic approach from the perspectives of students. McLaughlin and Durrant's (2016) case study aimed at characterising the learning strategies of Emirati students in a first-year men's English for Academic Purposes programme using the D/SAL model. Their results indicated the possibility of the existence of an achievement domain emerging from SAL, based on affective factors such as motivation; further research was suggested.

Ashour and Fatima (2016) studied the strengths and weaknesses of the UAE's higher education system, including both private and federal universities. Their conclusions reveal that despite the huge investments and regulatory bodies, the quality of higher education does not meet the goals envisioned by the UAE MOE. They found that the quality of graduates, research involvement and education fall below expectations. Their study was based on an extended literature review and not on empirical research.

Mohammed (2017) used practice-based learning methods in his Emirates and Islamic courses at a federal university to explore whether his students preferred this way of learning. The study concluded that his students approved of the method and benefitted by gaining HOTS. It is important to note that he was not exploring the pedagogic transitions but researching whether practice-based learning develops HOTS amongst his Emirati students at a federal university.

Solloway (2016) investigated the attitudes of his students in a foundation year female federal university regarding using English as a medium of learning in tertiary education when it was their second language of study during compulsory education. He concluded that the students found using English in tertiary education to be a barrier to their learning and recommended that the language of instruction be changed to Arabic, which students transferring from the public schools are proficient in. However, a limitation in Solloway's study is the small number of participants: 20 for the quantitative survey and 10 for the interviews.

These research studies suggest that the SAL is dominant, and graduates lack the skills required for labour markets.

2.7 National Policies to Raise the Quality of HE

In 2016, a cabinet reshuffle brought about the merger of the Ministry of Higher Education and Scientific Research (MOHESR), the authoritative body for higher education since 1992, and the Ministry of Education (MOE), under the umbrella of the Ministry of Education. The current Ministry of Education (MOE) is responsible for the educational standards of both compulsory and tertiary education (Government.ae, 2017e). His Excellency Al Falasi, the Minister of State for Higher Education, highlights that the current phase of the educational system in the UAE is focused on boosting research and development, which he says "is fundamental to building a sophisticated knowledge-based economy" (Oxford Gulf and Arabian Peninsula Studies Forum, 2017, p. 33). He added that the MOE, in support of UAE Vision 2021, is investing in raising the quality of HE to develop a strong national leadership that can contribute to the national economic growth. He states:

"Education plays a key role in inspiring Emirati youth to think differently, be creative and approach problem-solving with a critical mind—these are skillsets of the future that are integral to driving the UAE's sustainable economic growth and development" (Oxford Gulf and Arabian Peninsula Studies Forum, 2017, p. 33).

This vision and policy are aligned with the Emiratisation strategy (section, 1.2.4).

The Commission for Academic Accreditation (CAA) was established in 2000 to enable quality assurance and promote educational excellence for courses delivered by foreign universities in the UAE (MOHESR, 2011). In 2013, the federal universities, which were

originally exempt from this requirement, were also required to obtain accreditation from the CAA (Swan, 2013). Prior to that point, the federal universities were subject to accreditation by their international partners, who provided expertise and curricula (University X website, "Accreditations," 2017).

The UAE National Qualifications Authority (NQA) was initiated in 2010 to help raise the quality of higher education (NQA, 2017). One of the aims of the NQA (2013) in support of UAE Vision 2021 is to promote the transition to quality in education to elicit HOTS in graduates (Chapter 1, para. 5). The UAE Qualifications Framework Emirates (QFE) was established in 2012 by the NQA with a primary purpose of having a single and unified qualification standard with learning outcomes based on the varying levels of the educational system (UAE MOHERS, 2012). Each course has its specified course learning outcomes which define the core purposes of the course and the expected outcomes. The QFE further specifies that the "range and type of teaching and learning activity on the course form the basis of the assessment activity" (UAE MOHESR, 2012, p. 13). The QFE therefore sets the predetermined learning outcomes required for each level of primary, secondary and tertiary education.

The list of key competencies or core generic skills of the course components for higher education include evaluating, analysing and applying information in different contexts, creativity, discovery and problem solving (UAE MOHESR, 2012, pp. 74-75). These are the same attributes identified for DAL and HOTS within the theoretical framework in chapter 2 (section 2.4.3).

Young (2007) explains that much of international literature supports National Qualifications Frameworks (NQFs) as a necessary, positive and modern development essential for all countries, as they can be the catalyst to establishing targeted educational standards uniformly. The obvious benefits are the issuances of nationally and internationally recognised accreditations that enable the movement of labour between countries. However, Young argues

that NQFs are limited because a single qualifications framework may not apply for all disciplines, e.g. students in an engineering or construction field would benefit from experience gained through internships while other fields, such as medicine or finance, may require more theoretical learning (Young, 2007, p. 450).

Most NQFs are outcomes-based frameworks. Allais (2007) argues that outcomes can be ambiguous, as not all inspectors evaluate each specified outcome in exactly the same manner. The more rigorous the classifications of learning outcomes, such as requirements, purpose statements and assessment criteria, the tighter the structure becomes (Allais, 2007). Most outcomes-based frameworks are broken down into layers of smaller units, which narrows the scope of the content and leads to ambiguity (Allais, 2007 and Young, 2007).

Although national qualifications frameworks are deemed to be a methodical and structured form of assessment, the argument remains that what happens in practice and the interpretation of the inspector may vary from the interpretations of the educational institution and the learner (Woodhouse, 2014).

Young (2007) further argues that NQFs should be viewed as an "enabling instrument" instead of a "driver of reform." Otherwise the pressures of "passing annual inspections" can overshadow the slower process of strengthening educational systems and adapting to curriculum changes (p. 455).

2.8 Prominence of English in the UAE HE sector.

Today, English is the global language for business and international exchange and is an essential resource to drive a competitive knowledge economy. With globalisation, English is being increasingly used as the most common language of communication and has become the global lingua franca (Mauranen and Raita, 2009).

The medium of instruction at the primary and secondary levels in the state-funded public schools is Arabic with English as a second language while English is the medium of instruction (EMI) in federal universities (Government.ae, 2017a). The sudden switch from a completely Arabic medium to a completely English medium creates a challenge for students to access SCP (Lovering, 2012; Ashour & Fatima, 2016). The Common Educational Proficiencies Assessments (CEPA) were introduced in 2002 as the entry exam that tests college readiness in English and mathematics with a minimum entry pass score of 150 points (Yousef, 2005). The average score for CEPA results of 2012 – 2013 was 159, showing only a small increase in performance. Only 20% of students who took the exam qualified for tertiary education (Olarte-Ulherr, 2013; Pennington 2017a). Students who did not pass the CEPA entered the Academic Bridge Program (ABP) for one to two years depending on their results to shore up English, science and mathematics skills required for the rigorous four-year undergraduate program. This meant that the regular four-year program could take five to six years for most students to complete. It also indicated that the proficiency level in the English language at the primary and secondary levels needed strengthening.

The Emirates Standardization Test (EmSAT) was launched in the 2016-2017 academic year to replace the CEPA as the entry test to qualify for HE. The EmSAT is also targeted to strengthen English, mathematics and science skills throughout the different grades of primary and secondary education (UAE Ministry of Education, 2017c).

2.9 Conclusion

UAE Vision 2021, initiated by the impact of globalisation and internationalisation, is a catalyst for change in the UAE during this time of transition towards a knowledge economy. The UAE's alignment to the global pedagogic trends, its membership in UNESCO and WEF programs and its active participation in the global competitive indexes strengthens this vision.

The literature revealed that in recent decades, acquiring HOTS through constructivist pedagogy is encouraged by international organisations such as UNESCO, WEF and IMF amongst others because of the shift globally to knowledge-based economies. The need to equip the labour markets with qualified graduates becomes imminent. In the UAE, imported western models and western-educated faculty are anticipated to encourage the desired pedagogic change in the federal universities.

Constructivist learning theories that underpin the theoretical framework for this study were evaluated first through the lens of dated sources which are deemed to be cornerstones of constructivism. These include those by Piaget (1973), Vygotsky (1978) and Bruner (1966, 1973 and 1996). Bloom et al.'s (1956) taxonomy of educational objectives was examined in relation to HOTS as Bloom's taxonomy has been widely discussed and used in academic literature even in recent decades. A study of more recent literature showed an expansion on these theories revealing patterns that display similarities to HOTS.

Marton & Säljö's (1976) D/SAL model which was popularised by prominent educators worldwide was debated as there were seemingly limitations to using this model. However, the model was chosen to be applied in this study for multiple reasons as explained earlier (section 2.4), with an awareness to its weaknesses. The researcher will seek to explore and evaluate deviances between the model and the findings of this study.

The influence of faculty on the learning and teaching process showed that faculty's approaches to teaching and their personal teaching philosophies can influence student learning. It also showed that dissatisfaction from increased workloads, rapid change and pressure from institutional leaders can negatively affect their experiences of and approaches to teaching.

Several studies conducted in the federal universities were analysed to situate this study and to determine significant gaps that can be pursued in this study. Although some of the studies have revealed that SCP is preferred by students, TCP was found to be the dominant

practice in the federal universities. Most of these studies also conclude that graduates are not equipped for entry into the 21st-century labour markets.

The constant changes to achieve improved HE models are juxtaposed against a backdrop of questionable college readiness hindered by a long-term rote learning system in compulsory education. This is coupled with the sudden switch in the medium of instruction for students transitioning from high school to HE. The establishment of governing and accreditation bodies such as the NQA, the CAA and the QFE were explored and compared with the other national policies to understand whether there could be potential inhibiting factors for the practice of constructivist pedagogy and DAL. The review also highlighted the need to remain aware of the special conditions affecting the UAE which, as a young nation with no higher education institutions in its formative years, rapidly grew to a regional educational hub within a period of 45 years.

Chapter 3: Research Design

This chapter will explore the choice of the research design, which includes the ontological and epistemological assumptions, as well as the chosen methodology that drives this study. The choice of the research site, sample size and ethical considerations are discussed, and the risks and limitations of the chosen methods are considered. The discussions below argue and justify the use of the chosen research design to suit the theoretical framework identified in the literature review to investigate the research questions (section 1.5). The anticipated timeline and completion of the dissertation is shown below in Table 1.1

Table 3. 1 Timeline for the dissertation processes and completion

Proposed Timeline			
Methods	**FC College**	**COE College**	**Comments**
Thesis proposal accepted	July 2016		
Ethical Approvals	Mid-September 2016 - mid-Jan 2017		Winter break: mid - December to mid-Jan
Document Analysis	Aug 2016 - Dec 2016		It was revisited periodically throughout
Online Survey	February - May 2017		
Semi-structured interviews	April - June 2017 & Sep - Nov 2017		Summer break: July - mid-September
Focus group discussions	April - May 2017 & October 2017 - March 2018		Summer break: July - mid September
Statistical Analysis	Comparative analysis: May 2017 - Nov 2017		
Findings of qualitative data	Comparative analysis: April - August 2018		
Discussion and completing full thesis	Discussion, Implications and Conclusions: August - December 2018		

3.1 Research Paradigm and Researcher Reviewed Positionality

The research paradigm includes ontological and epistemological assumptions and the chosen methodology to suit this inquiry.

3.1.1 Research paradigm. The philosophical lens of a research paradigm is explained as "a basic set of beliefs that guide action" by Guba (1990, p. 17), which Crotty (1998) suggests are the ontological and epistemological assumptions. Crotty further explains that ontology is "the study of being, concerned with what is" (p. 10), while epistemology as described by Cohen, Manion and Morrison (2007) is the study of the nature of knowledge and how knowledge is created, acquired and communicated and "what it means to know" (p. 17). Creswell (2014) claims that the epistemology or the nature of the research should drive the study throughout its process while Scotland (2012) suggests that the chosen approach should relate to and justify the methodology used to connect to the findings and interpret the collected data.

In exploring the choice of design for this study, the ontological lens of positivism was first chosen as it appeared to be most suited because positivist inquiry could reveal the patterns of the learning and teaching approach and provide the base knowledge through a statistical analysis. It was anticipated that the statistical analysis could provide accuracy to the findings using the deductive approach and the influence of bias from personal accounts could be eliminated. As Greene et al. (1989) and Creswell (2014) state, quantitative inquiry provides a broad numerical and value-based analysis (where the findings are descriptive and factual) by using a larger sample size. The larger sample size as opposed to the small sample size used in a qualitative inquiry was anticipated to add accuracy and strengthen the findings.

3.1.1.1 Researcher's Reviewed Positionality. Cohen, Manion and Morrison (2007) contend that the positivism paradigm is realism seeking the ultimate truth, with a "view that objects have a reality independent of the knower" (p. 7). As a practice-based researcher, the 'ultimate truth' (Cohen et al., 2007) did not seem to resonate with the context of this chosen study as pedagogic approaches are constantly being refined. Scotland (2012) argues, that a quantitative inquiry has its limitations, given that what exists in the natural world may not be

transferable to the social world, and the ways of discovering it are especially subjective in educational research. In order to obtain meaningful understanding of the factors in the implementation of UAE Vision 2021 in the educational transformation from policy to practice, it seemed essential to go beyond the statistical findings.

As a scholarly practitioner, the researcher chose this context-based study as it is aligned to the researcher's professional knowledge and practice and is a current issue of importance to the country. The study is directly related to the researcher's role as an educator in the UAE and is of significance to HE. The study is anticipated to stimulate the researcher's critical reflection on practice and knowledge and provide the impetus towards a 'discoverable reality' (Pring, 2002, p. 59). It is aimed at contributing to the theory and practice in the field of quality education and add towards UAE's pursuit of a knowledge economy.

In reflecting further on the choice of design, although a singular positivist inquiry was planned initially it became evident that a combination of both approaches would be more suited for this study. As learning and teaching involve human behaviour and action, the interpretive inductive research approach using a qualitative inquiry could strengthen the study. Guba and Lincoln (1994) suggest that "human behaviour is only understood through the meanings and insights gathered from the experiences of the actors" (p. 106). Therefore, qualitative inquiry may shed more light on the effects of policy translating to practice. The constant change in practice experienced in the UAE federal universities and the ambiguity of variables of the D/SAL (Kauchak & Eggen, 1998; Shank & Brown, 2007; Wilson, 2001) as debated in section 2.4, if positivism is applied by itself, hidden and emerging factors may not be found.

The qualitative inquiry broadened the lens of the main research question and helped to understand the influences of the context and the processes, provided depth and answered the how and why questions. Secondary questions were designed to reveal issues relevant to this case study based on the perceptions of participants, as well as other internal and external factors

(Guba & Lincoln, 1994; Webb, 1997 and Scotland, 2012). Furthermore, the limitations of the D/SAL model could be explored as to how it translates within the UAE context and culture.

Therefore, instead of using either a positivist or interpretivist paradigm singularly, the mixed method research design was chosen.

However, the reliability of the qualitative inquiry based on the insights of the lived experiences of the subjects has been critiqued by education researchers. Guba and Lincoln (1994) posit that "reality is subjective and differs from person to person" (p. 110); Shank and Brown (2007) claim that "fluctuating life events and human factors can influence predictions for random reasons" (p. 28). Therefore, it can influence the accuracy of the results. Sandelowski (1993) argues that the validity of the subjective perspective becomes a matter of trustworthiness and "persuasion, whereby the scientist is viewed as having made those practices visible and therefore audible" (p. 2). Meanwhile, Webb (1997) argues that observation is not "simply out there" outside of the influence of culture, history and social construction (p. 200). Internal factors that were considered included institutional practice and culture; external factors included the influence of imported western curricula and models and the UAE's educational history and governance. These factors are addressed more fully in the discussion chapter.

Other limiting factors that the researcher was mindful of when adding the qualitative inquiry are noted below. Bernstein (1983) argues that bias on the part of the researcher in the way the data is understood and interpreted can influence the findings. The researcher sought to minimise personal bias that might colour the interpretations by remaining aware of and being sensitive to the context and cultural diversifications within the research environment (as suggested by Stake, 1995 and Yin, 2009).

Yin (2009) and Silverman (2010) affirm that participants' personal philosophies, positive or negative past experiences and blurry information recollected from past events can

influence findings. Furthermore, related present-day situations and experiences may be coloured by the personal lens of the participant. Therefore, careful consideration of the researcher's and the participants' personal biases influencing the findings was applied to the analysis of the data. The extensive data collected from the multiple sources of both faculty and students at two different colleges was anticipated to present a pattern showing consistent and repeated occurrences of the selected themes and subthemes. The data would be tabulated to establish common threads. As Yin (2009) suggests if due consideration has been given to the data collection and analysis, a high-quality case study can be anticipated.

Philips and Burbules (2002) assert that knowledge and all ontological and epistemological assumptions are conjecture, as absolute truth can never be found. Therefore, the philosophical underpinnings of the chosen research paradigm of each study differ and can never be empirically proven or disproven (Scotland, 2012, p. 9).

3.1.2 Case study. A mixed-methods research strategy enabled the use of multiple sources of evidence, which Yin (2009) and Hartley (2004) note is a comprehensive research strategy and a strength of case studies. As Robson (2002) suggests, the case study research design can adapt to both planned and emergent theory and is therefore flexible. The case study inquiry's three guiding factors are a) coping with situations where there may be more variables than anticipated data points, b) data from multiple sources need to be collected and triangulated, c) theoretical perspectives guide data collection and analysis (Yin, 2009). All three factors applied in this study.

As Bartlett & Vavrus (2017) argue, the comparative case study should go beyond the traditional 'compare and contrast' to allow for a multi-sited study across and through sites. Bartlett and Vavrus (2017) contend that due to the changing conceptions in social sciences, it becomes imperative to also assess data through the lens of other influencing factors such as context, culture, and space. They debate the notion of a case study being bounded within

specific units of analysis with proposed boundaries (Bartlett and Vavrus, 2017, p.9). They argue that the case study should include considerations of contextual data such as historical, cultural and traditional influences and the human elements of the participants such as gender and motivation in regards to the central phenomenon studied.

The comparative case study encourages both overlapping and simultaneous research over three axes: horizontal, vertical and transversal. Bartlett and Vavrus (2017) explain that the horizontal axis also considers documents, participants and other influences across the case besides comparing one case with another. The vertical compares influence at the international, national, regional and local scales and the transversal is a comparison over time (2017, p. 14). In this study, the horizontal axis can demonstrate how "similar policies unfold" in connected sites, while the vertical axis "[traces] phenomena across scales" (Bartlett & Vavrus, 2017, p. 14). The transversal could apply as comparison to the changes over time between past research and the findings in this study.

The variables for the quantitative inquiry were based on the theoretical framework (section 2.4) and the validated instruments Approaches to Study Skills Inventory (ASSIST) and Approaches to Teaching Inventory (ATI). Past research studies informed the research questions raised here. They were evaluated against the findings in the discussion chapter, exploring whether the addressed issues have changed or continue to exist and if other factors have emerged with the constant and continued policy changes.

Stake (1995) says, "Most researchers find that they do their best work by being thoroughly prepared to concentrate on a few things, yet ready for unanticipated happenings that reveal the nature of the case" (p. 55). Indeed, the perspectives of the participants within this case study site did raise factors that were unanticipated.

3.1.3 Reliability, validity and triangulation. Reliability is generally the concept used for evaluating the quality of quantitative research, however, the same is used in qualitative

research where it is termed as credibility, dependability or transferability (Golafshani, 2003). Patton (2002) suggests that the quality of a research study will depend on the choice of the research design, the methods and the analysis of the results which jointly influence validity and reliability in research. Lincoln and Guba (1985) claim that there is a congruence between reliability and validity, stating "Since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the latter [reliability]" (p. 361). Creswell and Miller (2001) however contend that the choice of research paradigm and the researcher's concept of validity within the study influences the researcher's perception of the validity of the study. Therefore, researchers develop their individualised concepts of validity of their study defining it as rigour, quality or trustworthiness (Lincoln & Guba, 1985; Davis & Dodd, 2002 in Golafshani, 2003).

A rigorous procedure was undertaken to decide on the choice of the research design to suit this research study and to obtain the ethics approvals from both the University of Liverpool, the University under study and the colleges. Data collection methods and procedures were undertaken with careful ethical considerations. As the researcher's professional experience extends amongst the national Emirati population over the last 10 years, mindfulness of cultural mores was observed during the data collection phase and especially during the semi-structured interviews and FGDs.

Electronic statistical packages such as Survey Monkey, SPSS and NVivo were used in the analysis of data as the advancement in computer technology has enabled the refining of research capabilities limiting human error (Bala, 2016). These electronic programmes are also widely used in recent decades by governments, organisations and researchers for the accuracy and reliability of the processing and management of data (Bala, 2016).

Therefore, rigour and trustworthiness was sought at each phase of the research study to ensure reliability and validity. The mixed method research design chosen for this study is

anticipated to provide rigour and reliability. Johnson (1997) predicts that the stronger the validity of a study, the more "credible and defensible results" it will yield and this can lead to the generalisability of the results. Patton (2002) agrees that depending on the case studied, generalisability is one criterion for quality case studies. Patton (2002) also asserts that the use of triangulation can strengthen the study and improve the reliability and validity of the study.

Heale and Forbes (2013) argue that triangulation is as varied as there are research studies. However, generally triangulation is used in research studies when more than one methodology or method is used to investigate the research questions (Bryman, 2006). Bryman (2006) explains that in methodological triangulation which is the most common type of triangulation, the comparing of the different data from the different perspectives can transcend the limitations of each approach. Tashakkori and Teddlie (2003) identify three outcomes that the comparison of data can yield, namely, convergence where the results of all data sets have the same conclusions and provides validity through verification. The second outcome can be complementarity which supplements the results of each data set, while the third outcome can be divergence or contradiction. In the case of divergence, Tashakkori and Teddlie (2003) argue that when the data is found to be divergent, it can lead to new explanations for that aspect of the research study.

There are several criticisms to the use of triangulation, one of which questions whether data from the different methods are even comparable and if the weighting of each data set would matter in the comparison (Heale & Forbes, 2013). Triangulation is however generally considered to enhance the rigour of a study and to provide a comprehensive understanding of the study (Tashakkori and Teddlie, 2003 & Patton, 2002).

Generalisability of the results of this case study may be viable if the study demonstrates reliability and validity. As argued above, if the quality of the study is strengthened, it can lead to generalisability (Johnson, 1997 & Patton, 2002). Although this case study is undertaken in

two colleges in a single university, there are multiple similarities and congruencies between all the federal universities in the UAE. All the federal universities are accredited by CAA and the learning outcome requirements of the QFE are integrated into the curriculum of each federal university (UAE MOSHER, 2015; NQA, 2015 & Swan, 2013). The student population in the federal universities are Emirati nationals, the universities are all gender-segregated and the majority of students entering these universities have graduated from the public schools throughout the country (MOSHER, 2007). All the public schools in the country use the standard national curriculum of the UAE and the medium of instruction is in Arabic (Government.ae, 2017a). The students therefore all share the commonalities of educational background, context, culture and history. Therefore, although this study is undertaken in two colleges in one federal university, many of the overarching factors may be generalisable.

3.1.4 Convergent parallel mixed-methods approach. This study used a convergent parallel mixed-methods design, which Creswell (2014) identifies as a method in which data for both quantitative and qualitative inquiries are collected concurrently but analysed separately. Interfacing, relating, connecting and making sense of the findings of both types of data are conducted in the discussion chapter. In this method, the data from both sources are compared to evaluate whether they converge or diverge; that is, if the results of one data set confirms the other. However, Creswell (2014) asserts that the danger arises when there is divergence and warns that typically divergence is present in some scales or constructs. However, as Tashakkori and Tedlie (2003) argue, divergence can raise unexpected and new factors.

The intention at the beginning of the data collection phase was to apply the explanatory sequential mixed-methods approach by collecting the quantitative data first, in order to inform the qualitative inquiry. The task of collecting data from two sets of participants from two colleges proved to be long and arduous. Therefore, although all the quantitative data were collected first, the interviews began soon after, while the data for the quantitative inquiry were

being analysed. Therefore, the convergent parallel mixed-methods approach was chosen instead, as it allows for data to be collected simultaneously, analysed separately and then merged in the discussion chapter. However, the findings of the quantitative data analysis helped to modify and expand the remaining interviews and focus group discussions (FGDs).

Given that multiple data collection methods were applied for the qualitative inquiry, a large volume of data was generated and emerging and hidden factors were revealed, giving the qualitative inquiry a greater emphasis. Furthermore, as explained earlier in this chapter, the addition of the secondary research questions identified processes and behaviours which could not be obtained using a singular quantitative inquiry. Data to respond to these secondary questions were drawn primarily from the qualitative inquiry. Therefore, both inquiries do not have equal weight, and greater emphasis is given to the qualitative inquiry. As Creswell (2014) explains, priority and emphasis for each inquiry can indeed vary.

Notations or labels to convey the procedures used in mixed-methods research studies were first developed by Morse (1991) and were later popularised by Tashakkori and Tedlie (1998) and Plano Clarke (2005). The notation "quan" stands for quantitative while "qual" stands for qualitative, with the same number of letters indicating equality (Creswell, 2014). However, the capitalisation of either word indicates an emphasis on the data, analysis and interpretation of that inquiry. In this study, as the qualitative inquiry has greater emphasis, QUAL is capitalised and the + sign between the two indicates that the convergent parallel method has been applied. Therefore, "the results of the qualitative analysis complemented the quantitative results" (Creswell, 2014, p. 15) while, to a lesser degree, the results of this quantitative data helped "to inform the results of the qualitative data" (Green et al. 1989, p. 251).

The findings of the data from both methods will be reported in the findings chapter, while the interpretation of all data collected from both methods will be discussed in the

discussion chapter, using a side-by-side comparison. The figure below illustrates this mixed-methods case study research design.
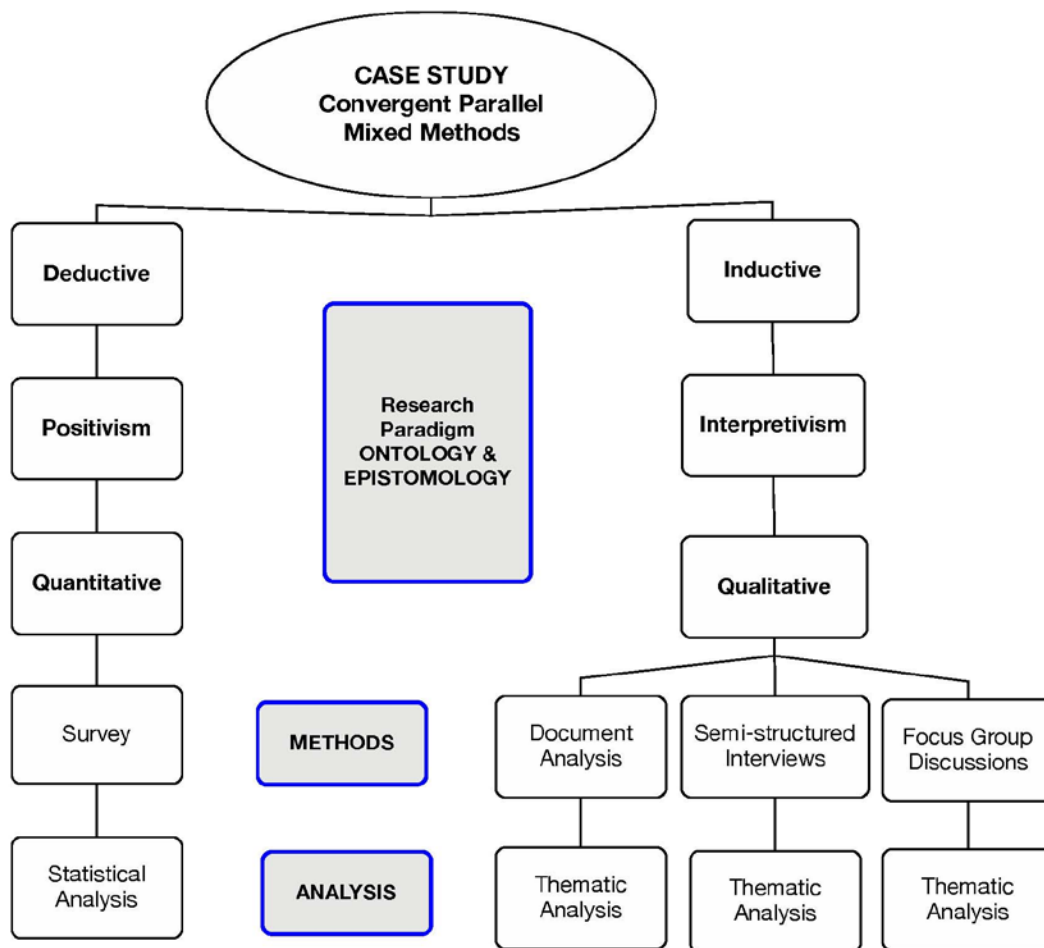
Figure 3. 1 Mixed-methods case study research design.

This mixed-methods case study research design was therefore chosen to not only ensure rigour, validity and reliability (Denzin, 1970) but to go beyond the statistics and obtain insightful data that can be beneficial for policy makers. The combination of the deductive and inductive approaches provided both additional data and meaning to the process, as Tashakkori and Teddlie (2003, 2010) and Morse and Niehaus (2009) claim. The inclusion of a document analysis supported theory building and triangulation in the analysis and discussion of the findings (Bryman, 2006; Corbin & Strauss, 2008). Several scholars and publications, such as *The Journal of Mixed Methods Research*, *The International Journal of Social Research*

Methodology, *Qualitative Health Research* and *Annals of Family Medicine* have encouraged this type of inquiry over the last 10 years (Creswell, 2014).

Therefore, by using a mixed-methods research design, the researcher intends to boost rigour, provide triangulation and identify hidden factors revealed from the lived experiences of the participants.

3.2 Case Study Site Selection, Access and Ethical Considerations

3.2.1 Site selection and access. Although there are three federal universities and all are gender segregated, there are numerous campuses throughout the country. The intention was to conduct the study at a notable flagship university (University X) where there may be close monitoring of the implementation of policy directives in addition to the large investment in both academic excellence and expert leadership. The chosen campus is in the same city as the residence of the researcher, providing convenient transportation to the site. Ethics approval was obtained from the University of Liverpool Ethics Committee and official approvals from the University Office of Institutional Effectiveness, the University Research Ethics Committee, the provost and the relevant administrators from the chosen two colleges. The ethical regulations from the University of Liverpool and the host institution were used to shape the data collection procedures and work.

It would have been too lengthy a process and too time-consuming to include all six colleges within this university in the given time frame and context of this research study. On the other hand, choosing only one college could have been limiting for both the researcher and the reader, leaving the validity of the results and the research questions insufficiently explored. A comparative analysis, on the other hand, could reveal how similar policies in connected colleges are realised. Therefore, the study was extended to include two colleges within this university campus.

3.2.2 Choice of sample. Undergraduate students were chosen over postgraduate students because the research study is placed within the context of the UAE shifting to a knowledge economy, as well as UAE Vision 2021. Policies are directed at stimulating pedagogic changes in both compulsory education and higher education. Past studies on learning and teaching approaches in compulsory education in the UAE reveal that the TCP has been the norm (Farah, 2012; Ridge, 2012; Tabari, 2014; United Nations, 2000). The foundation college (FC) receives students transitioning from compulsory education and the Academic Bridge Program (ABP). The ABP is a one- to two-year programme preparing students who are lacking in college readiness to raise their level of competence in the English language (the language of instruction at this university), mathematics and the sciences (University X website, "General Education Program," 2018). All students entering the university pass through the FC, which constitutes the first two years of the undergraduate programme. The FC was thus chosen because it is an environment wherein students are moving from the compulsory education system to tertiary education. This can provide fresh perspectives regarding any adjustments that affect their current pedagogic experience.

Data were collected in the second half of the academic year of 2016–2017. Students in their second year at the FC college were chosen, as they had already experienced a year and half of the two-year programme; this was expected to provide accuracy regarding their experience at the FC. Students at the FC all take the thirteen required courses managed within three academic departments (University X website, "General Education Program," 2018; University X website, "Foundation College," 2018). The chosen department offered two of the newest courses added over the last two years to the general education programme. However, students' perspectives covered the entire college, as they took all 13 of the required courses. Faculty member participants at the FC were consequently selected from the same department,

helping to address the secondary RQ4: Is there a difference in the perception of change between faculty and students?

The College of Education (COE) chosen is most relevant to the research study, as graduates from this college would be transferring to teaching careers and be applying the learning and teaching practices they had acquired at the COE. This aligns with the UAE Vision 2021 goal of raising the quality of education and maintaining cultural factors as these graduate teachers are envisioned to teach in the public schools as discussed in chapter 2 (section 2.3). Therefore, it was anticipated that this aspect of pedagogy, context and culture as Bartlett and Vavrus (2017) claim would strengthen the study and perhaps reveal unexpected elements that can contribute to knowledge. Students in their last semester at the COE were chosen, as they could contribute from their one and half years of experience within the two-year program, thereby enriching the data.

Therefore, two colleges and four sample sets (two sample sets of students and two sample sets of faculty) within these colleges participated in the study. The findings of each college stood on their own merit, but also enabled a comparative analysis to evaluate if there was a difference in the pedagogic approach employed for the two colleges.

3.2.3 Sample size. The case study institution provides higher education to Emirati female students and a small minority of Arab students (aged 19–23 years). Stratified sampling was used within the target groups at the FC and the COE. A homogenous sampling method will also apply, as the participants are all from similar backgrounds and experiences.

A sample size of approximately 302 students and 34 faculty members received the online survey in these two colleges. The survey questions were sent out to 150 students in randomly selected classes at the FC and all 152 students at the COE, which had fewer classes and smaller class sizes. Although 181 responses were received from the students, only 171 were found suitable for further analysis. There were 16 questions on the faculty survey and all

faculty answered all the questions, while there were 36 questions on the student survey. Some of the student surveys were only partially finished, as the survey may have been too time-consuming or tedious for them to complete. These incomplete ones were omitted and account for the 10 listed above as unsuitable for analysis. They are also stated below as missing values (section 3.3.1.6). There were 96 student responses (63%) at the FC and 75 student responses (49%) at the COE. There were seven out of 11 (63%) faculty responses from the FC and 16 out of 23 (70%) faculty responses from the COE.

The researcher chose to invite all participants within the same surveyed sample from both colleges to participate in the interviews and focus group discussions. The survey questions may have provoked their thinking and it was anticipated that they might have insightful data to share beyond the questions on the survey. Six to eight students and four to six faculty members who responded first to the invitation at each of the colleges were selected. Focus group discussions were conducted for all four sample sets and included four to six participants in each group. The characteristics of the participants are listed in Table 3.2 below.

Table 3. 2 Demographics of Participants in the Qualitative Inquiry

Number of Participants & Nationality					Age Category		
Category	Interviews Participants		Focus Group Participants		OEQ* - Survey Participants	18–24	25 – 49	50– 65
	Number	Nationality	Number	Nationality	Number			
COE Faculty	6	Foreign	6	Foreign	10	0	10	2
COE Students	6	Emirati	7	Emirati	19	11	0	0
FC Faculty	4	Foreign	5	Foreign	2	0	9	1
FC Students	8	Emirati	5	Emirati	57	14	1	0

*OEQ – Open Ended Questions

Note. 81% of COE faculty participants and 37% of FC faculty participants had over 15 years of teaching experience at the colleges under study and 75% at FC had over 10 years of teaching experience.

3.2.4 Ethical considerations. There are very few federal universities in the country and this being a flagship university in the region, there was some apprehension whether access would be possible. The gravity of undertaking the study at this site provoked a sense of ensuring ethical processes were correctly done. A provisional approval was first obtained from the site under study while the ethical approval from the University of Liverpool was in process. The ethical regulations from the University of Liverpool and the host institution were used to shape the ethical considerations throughout the study.

There was some concern whether both faculty and students would be open about issues they might be facing and divulge information freely to an outsider researcher. However, it was found to be advantageous to be an outsider researcher as there was no risk of coercion as the researcher was not their instructor nor a faculty member at their college. Participants were comfortable and spoke freely during the interviews. The confidentiality measures taken and the non-confrontational and non-threatening conversation environment appeared to have put them at ease.

For participant protection concerns, the name of the case study university, the colleges and the names of participants were omitted, and pseudonyms were used when referred to in the study. An online survey platform was used and participants remained anonymous. Voluntary participation was encouraged. Data collected from the interviews and focus group discussions (FGDs) have been kept secure. As the study was undertaken during the regular academic sessions, the researcher sought methods that would be less intrusive on both the students' and faculty's time. The interviews and FGDs were held at the university campus either during breaks or after regular college hours.

Although this is an English-medium university, as most students transferred from Arabic-medium schools, it was suggested by faculty members that instructions and survey questions be provided in both English and Arabic. Therefore, to obtain accuracy of responses

and to enable ease of participation, the Participant Information Sheet, Consent Form and survey questions were translated. However, the interviews and FGDs were conducted in English, with the opportunity to respond in Arabic if they preferred. Only one student from the FC responded in Arabic at the interview.

3.3 Data Collection Methods

Four data collection methods were used in this study: an online survey questionnaire with closed-ended and some open-ended questions, a document analysis, semi-structured interviews and FGDs for the qualitative inquiry.

3.3.1 Quantitative method. This federal university promotes technology in learning and teaching, therefore online surveys are an accepted method. Survey Monkey, an online survey tool, was selected, as it was found to be a refined data collection and analysis system. It has versatile quality survey templates and is used widely in business and social research, with a high customer satisfaction rate (FinancesOnline, 2018). The data were directly downloaded to Excel files and transferred to Statistical Package for Social Sciences (SPSS), a computer technology based statistical analysis package. SPSS is widely used in educational research today and been proven to effectively analyse and derive descriptive and inferential statistics collected from surveys (Bala, 2016). SPSS has minimised the need for researchers to conduct manual calculations. Two separate surveys were administered, one for students and one for faculty, in each of the two colleges.

3.3.1.1 Student survey questionnaire. The validated and widely used instruments, ASSIST for students and ATI for faculty, were used. ASSIST by Entwistle, Tait and McCune (2000) is the most recent version of this instrument. The Constructivist Learning Environment Scale by Taylor, Fraser and Fisher (1997) was also considered as a possible tool but the 20 questions it contains are not subdivided into the D/SAL model.   They   were   also   not

comprehensive and didn't include all the attributes of the chosen theoretical framework for this study (section 2.4). Therefore, this tool was rejected. ASSIST, however, appeared to best suit the theoretical framework of constructivism, the D/SAL model and HOTS. The questions on the instrument were clearly defined for both categories of the D/SAL, it has been successfully tested on large samples, therefore the connections between the subscales have been refined (Entwistle, Tait & McCune, 2000). Additionally, the number of questions on ASSIST for DAL and SAL along with the third variable for UAE Vision 2021 and the open-ended questions (OEQs) totalled to 39 which sufficiently explored the given topics. More questions could have been a time constraint and strain on students and fewer questions might not have justified the quantity and variance of the data collected through the survey.

As argued in the literature review (section 2.4), two out of the three subscales in the ASSIST questionnaire (namely, deep and surface approaches to learning) were used in this survey (Appendices A and B). The strategic approach (as explained in section 2.4) was excluded. ASSIST had also been used previously in the UAE in Russell's (2004) study undertaken in a federal university. In this study, Russell used only six and eight questions in each of the two subscales (surface and deep approach to learning) or a total of 14 questions on a small sample size of 38 students. However, in this study, the researcher chose to use all four subscales (or dependent variables) of both the deep and surface approaches of learning scales of ASSIST to enable an in-depth exploration.

Figure 3.2 below illustrates the variables as scaled in the instrument ASSIST. There are four questions in each subscale which totals 32 questions for the deep and surface scales or the independent scales. A further scale (independent variable) was added, containing one subscale of four questions, to explore the students' awareness of and support for UAE Vision 2021. These questions were constructed by the researcher based on the research context and the literature review. Three open-ended questions were added to obtain qualitative data on the

enablers and constraints experienced. Therefore, the total number of questions on the student survey was 39 (see Appendices A & B for the list of questions on the student survey and the OEQs). This scale was pre-tested to check for reliability and validity (section 3.3.1.3).
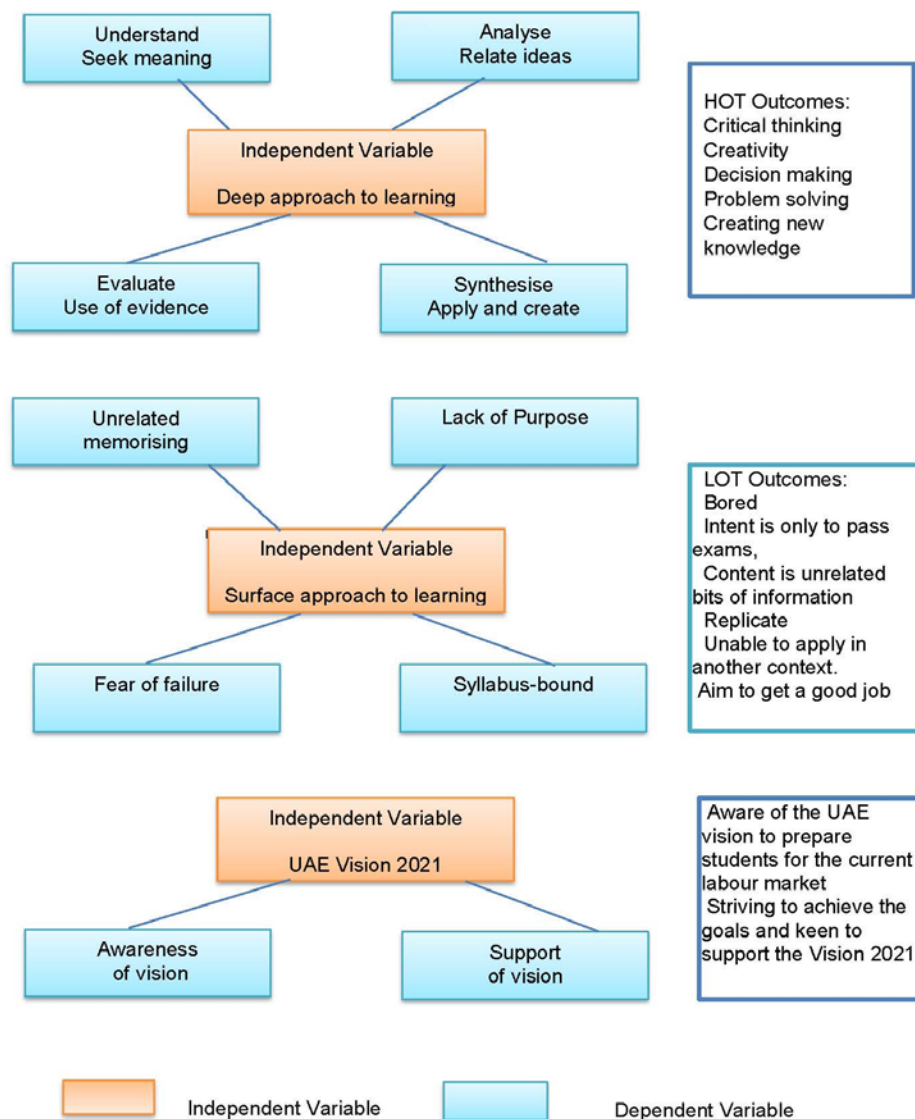
Figure 3. 2 Variables and outcomes used in the survey instrument ASSIST.

Therefore, the survey constituted a total of 36 closed-ended questions scaled to a five-point Likert scale response, ranging from strongly agree to agree, neutral, disagree and strongly disagree. The "neutral" option could be selected by the respondent if they held opinions that

they could not express within the Likert scale framework. This option was included to avoid questions being left unanswered for lack of an opinion. Three open-ended questions (OEQs) were added, resulting in a total of 39 questions in the student survey. Pre-tests, reliability and normality tests were conducted on a small sample to determine if the instrument was suitable for this context and sample. Fig. 3.3 below illustrates the organisation of the variables and the correlational analysis.
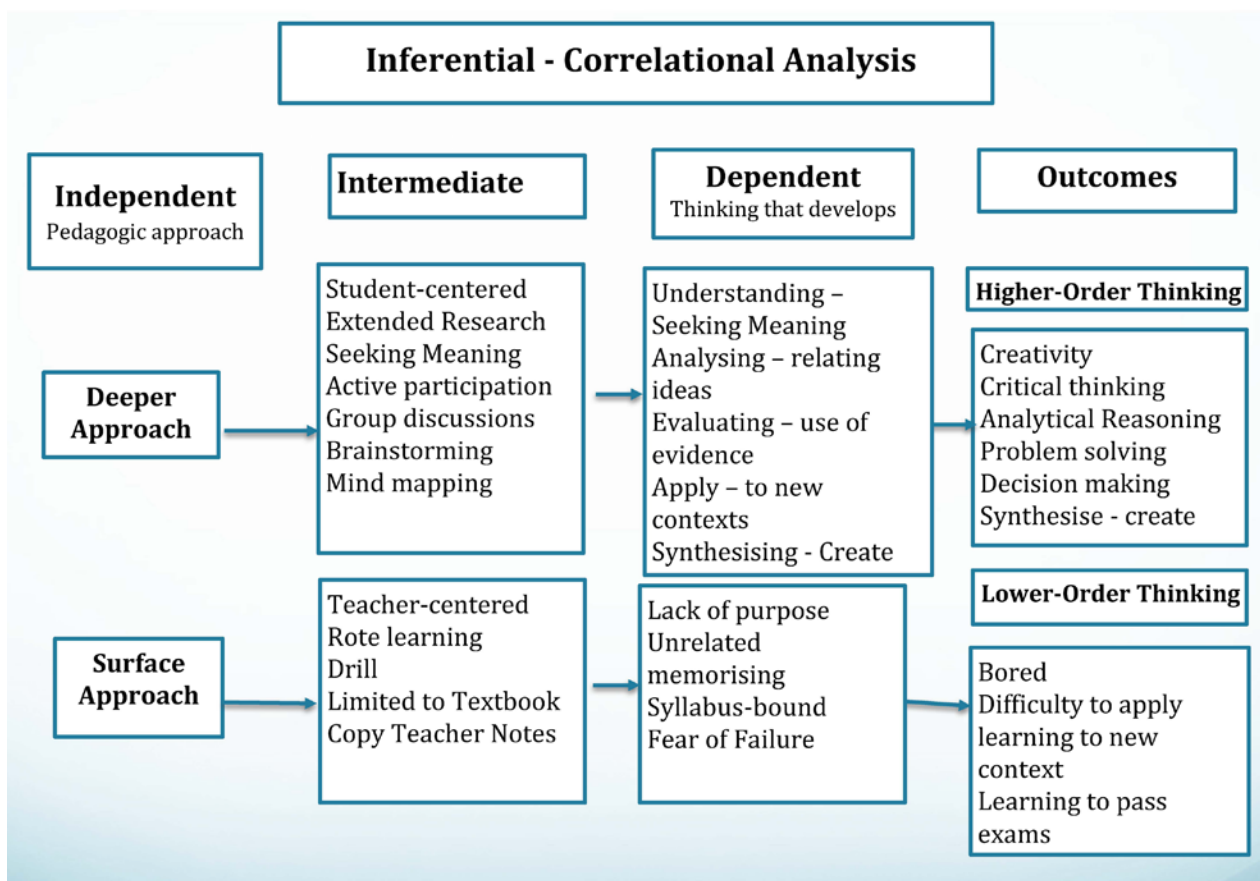
Figure 3. 3 Organisation of the variables (scales and subscales).

3.3.1.2 Faculty survey questionnaire. The validated and widely used instrument Approaches to Teaching Inventory (ATI) was chosen as a basis for the faculty questionnaires for both colleges. The Teaching and Learning International Survey (TALIS), which was

developed by OECD (2009) and tested in 23 countries, was also considered. Although widely used, TALIS focuses more on teacher beliefs, teacher attitudes and the teaching environment, and less on practice. The ATI was selected over other instruments as it appeared to best suit the chosen theoretical framework. The questions on the ATI were clearly divided between the SCP/TCP used by faculty.

ATI was designed by Trigwell and Prosser in 1999 for a specific study to analyse the relationship between university facultys' approaches to teaching and students' approaches to learning (Trigwell & Prosser, 2004). Although Eley and Meyer argue that this instrument "is methodologically flawed and conceptually limited," they agree that it is reliable when evaluated through two of its four subscales (2006, p. 647): the SCP / TCP scales. Trigwell and Prosser also explain that the analysis is contextual, in that the approach applied by a faculty member in one context may not be the same approach used by the same faculty member in a different context (2004). However, they argue that it can be used to evaluate educators in the same environment. Given that this study's survey was to be conducted with two sets of faculty members in the same university and on the same campus, this instrument was deemed suitable for this study. The eight questions in each subscale for the SCP/TCP have been taken directly from the ATI questionnaire, although some of the questions were simplified and others expanded to suit the context. A total of 16 closed-ended and two OEQs were included in this questionnaire. Several of the closed-ended questions also had space for a qualitative response, which faculty took advantage of. In this way, they provided additional qualitative data. The questions for the ATI Faculty Survey are listed in Appendix C.

3.3.1.3 Limitations of ASSIST and ATI. ASSIST was first tested on large samples: five universities in England, one in Wales, one in Scotland and one South African university. The patterns of responses from the English, Wales and Scottish universities were almost identical. However, Entwistle, Tait and McCune (2000) report that minor differences surfaced

in the responses from the South African sample, although there was a recognisable pattern. The items 'syllabus bound' on the SAL variable and 'seeking meaning' and 'relating ideas' on the DAL variable showed slight difference. Although this inconsistency appeared to indicate that the instrument may not be exactly replicable in a different context, Entwistle et al. argued that, "… such a conclusion would be highly speculative on the basis of this slight evidence" (2000, p. 10). ASSIST has continued to be used widely in other countries such as Australia and the United States, regardless of the possibility of the responses showing divergence in a different context.

ATI was first tested on large samples in universities in the United Kingdom (UK), United States, Scandinavia and Hong Kong on faculty teaching in multiple disciplines across a range of undergraduate years. It was found to be largely consistent throughout (Prosser and Trigwell, 2006). However, the question on 'textbook-bound' (limited to the provided study resources) showed variance between the physical sciences and humanities and social sciences disciplines. Prosser and Trigwell (2006) explain that the ATI was based on relational contexts, that is the say that the teaching approach used in one context may not be the same in another context. Nevertheless, it can be used to rank educators in a similar environment on two scales purporting to measure 'teacher-centredness' and 'student-centredness'.

Therefore, both the ASSIST and ATI instruments were used to rank students and faculty respectively in the two colleges within the same university, whilst remaining aware of the possibility of divergence given they have not been tested in the UAE on large scale samples.

It is important to be aware that respondent bias in self-reporting instruments can compromise the validity of a study (Jupp, 2006 and Garcia and Gustavson, 1997). Participants might provide desired responses, eager to confirm the researcher's hypothesis; show conformity to institutional teaching guidelines; avoid embarrassment; the responses may be influenced by their feelings or mood at the time the questionnaire was done or lack the self-

awareness necessary for accurate response (Heppner et al., 2016). Triangulation of data by using the mixed methods approach, providing participant anonymity and using open-ended questions, will help to provide validity and reliability.

3.3.1.4 Pre-tests – reliability and normality tests. Although ASSIST is a validated instrument, and it has been used in the UAE previously, pre-testing is another confirmatory step to ensure that any problems that surface can be rectified to avoid compromising the findings. Punch (2005) recommends small-scale piloting and testing of the instrument to ensure its feasibility and robustness. The student survey was piloted first with 35 participants and the ATI with three faculty members at both colleges. The responses did not indicate any issues with the instrument nor with the online platform used. However, after consulting with two faculty members regarding the wording of the questions, some of the questions were reworded for both student and faculty questionnaires to simplify them and make the meaning clearer.

3.3.1.5 Reliability test. The subscales for both DAL and SAL were calculated separately for reliability analysis using Cronbach's Alpha value. Cronbach's Alpha (Cronbach, 1951) value was extracted to numerically measure the internal consistency of each subscale, i.e. of how closely related each item is to another within the group. Cronbach's Alpha, despite its limitations of being used as a sole index of reliability which may not capture all measurement errors, is the most widely used method to test the internal consistency and reliability of subscales (Trizano-Hermosilla & Alvarado, 2016). It has been in use for over 65 years. The Cronbach's Alpha value varies between 0 and 1, and can be used to examine the reliability of a dichotomous or multipoint scale of a measurement instrument.

As Nunnally (1978) recommends, a research instrument based on the Cronbach's Alpha value will be deemed reliable if the value is 0.7 or higher, with a lower value indicating unreliability. The four questions for each subscale were initially tested for internal reliability by calculating the associated Cronbach's Alpha value in the SPSS statistical programme. The

reliability analysis was initially confirmed by the pilot survey to ensure that the reliability of each latent factor was established before the full survey was undertaken. The results in Table 3.3 summarise the reliability as measured using Cronbach's Alpha value for each of the latent factors in the student and faculty survey questionnaires.

Table 3. 3 Reliability Coefficient (Cronbach's Alpha) - Student and Faculty Surveys

Category	Scales	Subscales	FC	COE	Combined
Student Questionnaire	DAL	Seeking Meaning	0.865	0.879	0.863
		Relating Ideas	0.816	0.800	0.799
		Use of Evidence	0.865	0.824	0.838
		Synthesise and Apply	0.746	0.881	0.821
	SAL	Lack of Purpose	0.848	0.791	0.824
		Unrelated Memorising	0.773	0.827	0.799
		Lack of Research	0.877	0.819	0.854
		Fear of Failure	0.898	0.792	0.858
	UAE Vision 2021	Supporting UAE Vision	0.768	0.809	0.789
Faculty Questionnaire	SCP		0.655	0.938	0.929
	TCP		0.650	0.818	0.779

The Cronbach's Alpha for each subscale for the student survey exceeded the 0.7 value, while that of FC faculty was 0.655 for DAL and 0.65 for SAL. Though slightly lower, this is still at an acceptable value (Nunnally, 1978).

3.3.1.6 Normality test. In employing statistical analysis, it is assumed that there should be a normal distribution of data to ensure that the conclusions drawn are reliable and accurate (Field, 2009). To evaluate whether the scores were normally distributed, normality tests were conducted for both student and faculty samples, as required when making inferences using parametric statistical tests (Mardia, 1980).

A normal data has a bell-shaped curve distribution and shows the tolerance levels for skewness and kurtosis (Mardia, 1980). Skewness measures how dispersion occurs in the dataset while kurtosis measures the peakedness (or centrality) of the data.

Table 3. 4 Data Normality Test

		N	Minimum	Maximum	Mean	Std. Dev	Skew	Kurtosis
Student Survey	Seeking Meaning	171	4	20	9.88	3.73	0.99	-0.09
	Relating Ideas	171	5	20	11.51	3.22	0.05	-0.3
	Use of Evidence	171	5	20	10.04	3.58	0.96	-0.23
	Synthesise and Apply	171	4	18	10.51	3.58	0.66	-0.64
	Lack of Purpose	171	4	18	7.66	2.92	1.32	1.86
	Unrelated Memorising	171	4	18	8.38	3.2	0.79	-0.2
	Lack of Purpose	171	4	18	8.93	3.59	0.61	-0.28
	Fear of Failure	171	4	19	10.23	3.75	0.65	-0.5
	UAE Vision 2021	171	4	15	6.83	2.35	1.06	0.68
	Deep	171	20	76	41.94	10.94	1.1	0.82
	Surface	171	16	60	35.2	7.72	0.26	-0.08
Faculty Survey	SCP	23	14	37	21.00	6.64	1.34	1.04
	TCP	23	10	23	13.87	3.21	1.41	1.87

The normality test showed that each of the scales were within the limits, the lowest being -0.08 for kurtosis for the surface approach and the highest being 1.87 for kurtosis for the same. Both stayed within the -3 to +3 limit, confirming that the data were normal regarding tolerance levels for both skewness and kurtosis and free from any sort of outliers (Field, 2009). The normality test results are summarised in Table 3.4 shown above for the student and faculty survey questionnaire.

3.3.1.7 Missing values. As explained in the section on sample size, some of the students did not complete the survey or skipped some of the questions. A possible reason could be that having 36 questions to respond to could have been tedious or time-consuming, or some questions were not sufficiently understood. The blanks are treated as missing values and were

checked within each subscale. It was observed that there were a few missing observations within some of the subscales. If missing values were observed for any respondent within a specific construct, they were replaced by the average score of all the other items within that subscale. The findings are reported in the findings chapter.

3.3.2 Qualitative methods. The qualitative methods include document analysis, semi-structured interviews and focus group discussions. The questions for all three methods were based on the theoretical underpinnings of the study as discussed in chapter 2 (section 2.4) and on the instruments, ASSIST and ATI. NVivo, an electronic program used in the analysis of certain forms of qualitative data through a thematic coding exercise, helps to map the relationships between constructs (parent nodes) and subconstructs (child nodes). NVivo was used for the thematic analysis of the qualitative data in this study.

3.3.2.1 Document analysis. Yin (2009) suggests that it is the researcher's responsibility to have a clear understanding of the available evidence of the topic in relation to the research questions and remain neutral regarding the data collected. However, there are limitations to document analysis, such as insufficient availability of details that can be accessed. This is because most publicly available documents describe aims, intentions and policy directives and are not intended to provide details for a research study (Bowen, 2009). There can also be difficulty in retrieving the documents. Furthermore, sometimes only selected documents are made public, meaning the documents available may be biased and incomplete, emphasising preferred or select principles (Yin, 2009).

Although document analysis has its limitations, the advantages of document analysis outweigh the limitations. It is essential to a study of this nature, which includes the exploration of how policy is transferring to practice. Document analysis can be used to corroborate findings and triangulate data. Many documents are available and are indeed accurate if they provide references regarding names and dates (Bowen, 2009). It is also cost- and time-effective for the

researcher, as the work is mostly carried out online (Bowen, 2009). Therefore, document analysis has been used in this study as a means of enriching the findings.

3.3.2.1.1 Document selection. The question arose of how many documents were to be selected—a large array or a few pertinent ones? When document analysis is used for support or verification, as opposed to a research study that solely relies on documents, Bowen (2009) suggests that a few quality documents with strong evidence can be sufficient and effective.

A total of 52 documents (Appendix D) were analysed, of which 15 were Policy Papers and Policy Reports, eight UAE Vision 2021 and National Agenda 2014 documents, 17 University X public documents and seven news articles. Besides these, five internal documents obtained from the research site were also added, as interview participants had made mention of these documents. One of these is a Student Evaluation of the Learning Environment (SELE), which is a formal student feedback document handed out at the end of each course in the form of a survey of the course content and faculty teaching. The others are a sample case study assignment, two grading rubrics and a diagram of the professional development opportunities offered for faculty.

The university website had comprehensive descriptions of the various programmes and processes with additional links to assessments and report templates. Recent issues of the university factbook, faculty handbook and college course catalogues were accessed on public sites. Finally, the news articles presented a critical view of the educational platform in the UAE. The themes and main documents selected are listed in Appendix D.

3.3.2.1.2 Document evidencing. As Bowen (2009) posits, a systematic inquiry of the documents can provide background and contextual information—in this case, the significant changes and policies relating to the research questions. This secondary data can support theory building and add to the primary data to aid in responding to the research questions. The document analysis explored the main themes that were identified in Chapter 1 (the research

context) and Chapter 2 (the literature review), including: a) the context of transitioning to a knowledge economy and UAE Vision 2021 as a catalyst for change, b) pedagogic approaches promoted in the university where the case study is undertaken and c) the elicitation of higher-order thinking for the knowledge economy. The document analysis also raised additional questions that needed to be explored using the primary data (these are addressed in the discussion chapter). The data for these chosen themes also provided insights in framing the questions for the interviews and focus group discussions. These themes are aligned to the variables used in the instruments ASSIST and ATI in the quantitative inquiry.

The findings of this secondary data were used to corroborate the findings of the primary data, where relevant, in the discussion chapter. However, the findings or the data obtained from this document analysis do not reveal the extent of the implementation of policies or directives and how they work on a day-to-day basis.

3.3.2.2 Semi-structured, in-depth interviews. General findings of the survey and the document analysis were used as a guide to modify or expand the semi-structured questions for the ongoing semi-structured interviews and FGDs.

The interviews ranged from 45–60 minutes in length. There were 10–12 questions that guided the discussions. Some questions evoked responses specific to each college; for example, the question on the influence of compulsory education led into in-depth discussions at the FC, as the students had just moved from compulsory to tertiary education. This was barely addressed at the COE, as the students were in their third and fourth years of the undergraduate programme and were used to the way of learning at the university. Most of the questions were similar for the faculty and students of both colleges. The semi-structured interview questions for both students and faculty are listed in Appendices E, F and G respectively. The data was then subjected to thematic analysis for code categorisation as Bryman (2006) suggests this to be one of the effective methods of analysing qualitative data

3.3.2.3 Focus group discussions. FDGs were undertaken as a fourth step in the data collection procedure following the document analysis, the online survey questionnaires and semi-structured interviews. The same questions that were used in the interviews were used for the FGDs. As the FGDs were administered in the last phase of the data collection, a few new questions were added as they developed from the survey analysis (Appendix H).

To gain new perspectives, the participants selected for the focus group discussions (FGDPs) were not the same as those who were already interviewed except for the FGD with faculty at COE. Two out of the six COE FGDPs had been interviewed previously but were invited to join the FGD as they were part of the department teaching similar courses. This did not deter from gaining new perspectives as the group dynamics prompted new areas that were not previously explored. The same criteria of code categorisation were used in the analysis of the data from the FGDs as in the other qualitative analysis and these findings were then merged with the data from the interviews.

3.3.2.4 Open-ended questions from the survey. There were three specific open-ended questions (OEQs) listed on the Student Survey to enable students to add further insights. These were related to the influence of compulsory education, the enablers and constraints for the pedagogic approach used and whether they felt confident to embrace their future careers. The faculty questionnaire was open-ended for several questions to provide the opportunity for faculty members to give in-depth explanations which faculty took advantage of. There were also two OEQs at the end of the survey questions.

3.4 Conclusion

This practitioner-based research study employed a mixed-methods case study research design using online survey, document analysis, interviews and the FGDs. ASSIST, a validated instrument, was chosen for the student survey, while ATI was chosen for the faculty survey.

The questions on both ASSIST and ATI are closely aligned to the theoretical framework identified in the literature review (section 2.4). ASSIST helped to identify the broad approaches to learning but did not reveal the individualised experiences and approaches used by the students, nor the challenges faculty faced and contextualised teaching strategies.

Document analysis although it has its limitations is essential in a study of this nature. As Bryman (2006) and Corbin and Strauss (2008) argue, document analysis supports theory building and when compared with the primary data can show convergence or divergence. The semi-structured interviews and FGDs provided insight that enriched the data and responded to the secondary questions. Together triangulating the multiple data sets contributed to the validity of the study.

Therefore, as Tashakkori and Tedlie (2003, 2010) and Morse and Niehaus (2009) posit, the mixed-methods research design provided both breadth and depth to the study. The findings will be reported in the next chapter, while the results will be discussed in the discussion chapter.

Chapter 4: Findings

This chapter will present the findings of the quantitative and qualitative inquiries in relation to the research questions that drove this study (research questions listed in section 1.5). The findings include the secondary data gathered from the document analysis and the primary data from the online surveys, interviews and focus group discussions (FGDs). To provide clarity and simplify reading, statistical data from the quantitative research is presented in tables, while diagrams are used for the qualitative data (Miles & Huberman, 1994). To facilitate easy comparison, the qualitative data are also presented in tables to respond to some of the research questions. Data were first thematically analysed and categorised under constructs and subconstructs. The terms "construct" and "subconstructs" are used for the thematic code categorisation for this study instead of "themes" and "subthemes"; "scales" and "subscales" (or "parent and child nodes", as referred to in NVivo)

The chosen constructs and subconstructs are based on the theoretical framework of constructivist learning theories, the deep and surface approaches to learning paradigm and HOTS (chapter 2, section 2.4). They are also based on ASSIST and ATI respectively (chapter 3, section 3.3.1). Analysis and discussion of the findings in this chapter will be done separately in Chapter 5.

4.1 Findings of the Document Analysis

Corbin and Strauss (2008) and Labuschagne (2003) suggest that document analysis is another source of evidence that supports theory building, which helps to validate the conclusions derived from this study. It also adds to the overall mix of data sources. Relevant information was methodically selected and categorised into constructs and subconstructs for content and thematic analysis. Table 4.1 below illustrates these relationships between constructs and subconstructs.

Table 4. 1 Thematic Coding and Categorisation of Constructs

Constructs (Parent)	Subconstructs (Child)
UAE Vision 2021	Competitive knowledge economy
	Quality education
	21st-century skills
	Critical thinking
	Emiratisation
Deep Approach	Student-centred
	Active learning
	Seeking meaning
	Group discussions
	Research & innovation
	Outcome-based model and assessments
	Faculty teaching methods
	Faculty professional development
	University leadership's role
Higher-Order Thinking	Critical thinking
	Creativity
	Analysing
	Evaluating
	Applying knowledge
	Synthesise, create
	Problem solving
	Decision making

All the documents were subjected to a word and phrase analysis. They were first coded to find the most referenced words / phrases that relate to the three main constructs. The number of times the words and phrases appear indicates the strength of the construct.

The number of times the most frequently occurring words and their stem words referenced in all the selected documents are: development (278 times), skills (245), learning (242), knowledge (207), innovative (152), quality (132), research (128), economy (123), improve (113), assessments (108), critical (82), thinking (76) and problem solving (46).

The word "development" appeared the most often. It could be argued that the UAE's ambition in giving itself the 10-year deadline to achieve the multiple goals listed in UAE Vision 2021 places it in a state of constant development. The next most prevalent words were related to HOTS, knowledge economy and quality learning. These are: critical thinking, creativity, analysing, higher-order thinking, ICT and technology. Significant secondary data related to each main construct and subconstructs are described below in the tables that indicate the count of word and phrases

4.1.1 Findings for the construct UAE Vision 2021.

Table 4. 2 Number of key words / phrases relating to the UAE Vision 2021

Subconstructs	UAE Vision 2021 (8 docs)	Policy Reports (11 docs)	University X (22 docs)	News Articles (7 docs)
Knowledge Economy	19	21	2	17
Development – Education	59	315	46	14
Quality Education	5	242	19	47
Human Capital	8	102	1	1
Labour Markets	8	89	4	17

Note: Total words referenced: 1036 in 48 documents.

The number of counts of the relevant subconstructs within the selected documents reveal the significance of UAE Vision 2021 and the knowledge economy as seen in Table 4.2.

4.1.2 Findings for the construct deep/surface approaches to learning. Key words and phrases consistently found within the university's publicly available documents reveal that

SCP stimulating the DAL, such as critical thinking, analytical reasoning, understanding, evaluating, research, creativity, innovation, making informed opinions (decision making) and solving problems (University X Factbook 2017–2018; University X Faculty Handbook 2017–2018; University X website). Table 4.3 shows the most frequently occurring words for the D/SAL construct.

Table 4. 3 Number of key words / phrases relating to the SCP/TCP and consequently DAL/SAL

Subconstructs	UAE Vision 2021 (8 docs)	Policy Reports (11 docs)	University X (17 docs)	News Articles (5 docs)
Student-Centred Activities	2	41	107	4
Learning Outcomes	1	105	221	0
Innovation	192	111	37	7
Research	28	219	156	7
Faculty Teaching & PD	11	132	143	3
Leadership in HEI	4	26	14	0

PD – Professional Development

Note. Total words referenced: 1,571 in 52 documents.

The university documents were analysed to evaluate the foundational premise on which the learning and teaching approaches are based. The categories discussed below are significant, as these were used in the questions for the interviews and FGDs to obtain a deeper understanding of the pedagogic practices at the university under study.

Initial and ongoing accreditation approval from a recognised accreditation body is an indication of an acceptable quality of education (UAE MOHESR, 2010; University X website, "Accreditation," 2015; US Department of Education, 2015). University X has been accredited by both an international body situated in the US in 2008 and by the national accreditation body,

CAA, in 2016 (University X Factbook 2017–2018). It renewed its international accreditation in 2013 with all 14 standards met (University X website, 2017), indicating that it has maintained the quality of education expected by the accreditation body.

Besides this dual accreditation, the COE received accreditation in 2013 for its discipline from the Council for Accreditation of Educator Preparation Continuous Improvement Commission (CAEP) (University X website, "COE," 2017). A review of the accreditation standards for the completion of the teacher programme provides consistent references to words relevant to the constructivist pedagogy and SCP (NCATE, 2008). These include: inquiry, critical analysis, assess, analyse, synthesis and reflect (NCATE, 2008, p. 16). The rigorous process of securing and maintaining accreditation from three different bodies over the last six years may indicate that a quality student-centred learning approach for the qualifying graduates at the COE is pursued.

4.1.2.1 Outcome-based model. Fitzpatrick (1995) and Furman (1994) suggest that in outcome-based models (a characteristic of the constructivist pedagogy), the curriculum is developed to support the desired outcomes. The strength of this model lies in its flexibility to make continuous improvements to the curriculum through regular evaluation regarding the knowledge acquired, skills developed and competence to apply or create (Bouslama; Lansari, Al-Rawi & Abonamah, 2003).

Learning outcomes (LOs) are a key function of University X's monitoring, evaluation and improvement process, the motto being: "Assess – Analyse – Act" (University X Learning Outcomes Handbook 2016–2017, p. 10). "Closing the loop," a practice to receive feedback from faculty, is considered a critical element of this assessment cycle (p. 12).

University and discipline learning outcomes (LO) are mapped to QEF learning criteria. These being integrated in assessments throughout the curriculum is one way of ensuring that

accreditation requirements are met (University X website, "Learning Outcomes," updated 2019).

4.1.2.2 Faculty professional development. One of the requirements from CAA is that the university provide professional development to faculty members to support scholarship, research and teaching, specifying that "these activities are regularly assessed to ensure they are appropriate and effective" (UAE MOHESR, 2011, p. 15). University X meets this criterion through annual assessment retreats, external guest speakers, regular workshops and sharing the best practices amongst faculty within the colleges (University X Learning Outcomes Handbook 2016–2017). The Center for Innovation at the university, initiated in 2012, provides training for faculty members. A printed copy of the Innovative Teaching Program Guideline was retrieved at the site during an interview. This document outlines the professional standards pursued by the university which lists constructivist approaches to support student-centred learning as a main objective. Providing continued professional development for faculty members may indicate that quality teaching practices are encouraged.

4.1.2.3 University X internal documents. A research project involving the collection of primary data through interviews is part of the curriculum at both colleges. Samples of one such project were retrieved at the COE site. These include the assignment question, prompts and grading rubrics. The prompts include questions that guide the students in their thinking process to evoke analysis, evaluation and reflection. Examples include:

How does the child control him/herself emotionally?

What tells you which of Piaget's stages the child is at?

The rubric for grading this case study requires that a minimum of three elements of analysis and critical thinking are used to achieve grades from a B+ to A+.

Two other documents retrieved on site are copies of completed student feedback forms called Student Evaluation of the Learning Environment (SELE). SELE evaluates the faculty

member who taught the course. The ratings of the faculty member are scaled in three categories, namely: connection and communication attributes (clear teaching style); preparedness and organisation of the lesson (whether the teaching encourages group discussions and questions from the students) and clear instructions and explanations received. The overall rating of the faculty member is categorised as poor, weak, average, good and excellent. The faculty member was rated excellent at 73% in the first and 100% in the second document. Some of the statements on the qualitative feedback include: "her teaching is easy to understand," "she helps us to understand everything in the material" and "we enjoy her class."

The selection of categories evaluated for teaching approaches within the SELE resonates with the attributes of SCP as discussed in the theoretical framework in chapter 2 (section 2.4). Regular assessment through student feedback indicates that a quality student-centred learning and teaching approach is pursued.

Another document obtained onsite is a sample rubric for an assessment retrieved at the FC. To achieve higher grades, understanding, evaluating, analysing, creativity and originality are expected. Again, these are common constructs used for SCP.

The findings from all six of these internal documents point to a constructivist pedagogy promoting HOT as being pursued in the learning and teaching practice at this university.

4.1.3 Findings for the construct HOT. Coding the selected documents for the main construct HOT brought up numerous other constructs that are not relevant to this study. For example, when HOTS or a skills gap was coded, references to other 21st-century skills including ICT skills, technology skills, soft skills and life skills also surfaced. These references were eliminated from the count as they were not relevant to this study.

Consistent reference is made in the QFE to creative and analytical skills and solving problems (2012). The competencies listed in the required outcomes of QFE that are mapped to

the CAA accreditation include analytical thinking, evaluating, applying, devising and sustaining arguments; problem solving; synthesising and creativity (NQA, 2012, p. 107).

The word frequency for the six subconstructs of HOTS are listed in Table 4.4 below.

Table 4. 4 Number of key words/phrases occurring for the HOT Construct

Subconstructs	UAE Vision 2021 (8 docs)	Policy Reports (11 docs)	University X (17 docs)	News Articles (5 docs)
Higher-Order Thinking	9	178	15	6
Critical Thinking	4	46	41	3
Thinking Skills	4	15	22	9
Creativity	8	29	44	2
Analysing	0	23	3	0
Evaluating	0	25	12	0
Problem Solving	2	43	17	10

Note. **Total number of references – 570 in 52 documents.**

4.1.4 A significant factor that emerged. A significant factor that affected faculty's time and teaching output emerged during the interviews and FGDs. This, a newly introduced system in the spring of 2016, is the Electronic Quality Assurance and Monitoring System (EQAMS) to fulfil a recent requirement from CAA. The requirement states that the university must "[implement] a policy for monitoring and authenticating student work" (UAE MOSHER, 2011, p. 11). It is also referred to as the "course file reporting and auditing system" (University X Faculty Handbook 2017–2018, p. 29) but for this study, this system shall be referred to as the Electronic Quality and Monitoring Assurance System (EQAMS), as this conforms to an internationally accepted naming convention for this type of system.

Faculty are required to regularly upload all their teaching and evaluation materials on to the system, including "[the] course e-syllabus, course materials, three examples of student work, rubrics, marking criteria, a comprehensive faculty reflection of the course (FELE) and

the student achievement of learning outcomes (SELE)" (University X Faculty Handbook 2017–2018, p. 29).

The system monitors quality and identifies areas for improvements to the course, learning outcomes and assessments. As this is a new system, the findings of its influence on pedagogic practice could be relevant for this study.

4.2 Findings of the Quantitative Online Survey

The methods and instruments chosen for both the student and faculty surveys are discussed in Chapter 3 (section 3.3.1). The details of the pre-tests (reliability and normality tests that were undertaken as a confirmatory step in the use of the selected instruments) are also detailed in Chapter 3. Below are the findings of the survey that have been tabulated and compared; first, the student survey at both colleges, followed by the same for faculty at both colleges.

4.2.1 Comparative findings for DAL, SAL and UAE Vision 2021. The scores of the students from the FC and the COE for the subconstructs of DAL and SAL and for supporting UAE Vision 2021 (SUV2021) are summarised in Table 4.5

Coolican (1990) suggests that the significance of the tests results can be reported in three ways, based on the probability levels (p). All the probabilities reported below are based on two-tailed tests (Sig. 2-tailed) as each comparison has 2 directions. They indicate whether the results are insignificant, significant or highly significant. These are represented as: insignificant: $p > 0.05$; significant: $p < 0.01$ significant and highly significant: $p < 0.001$. Therefore, as indicated in the tables and the example in 4.2.1.1, differences in the mean scores are indicated by the *t*-test results (*t*-statistics) and the degree of freedom (df), which show whether the results are statistically insignificant or significant. The subconstructs in the sections below are noted in quotation marks. Table 4.5 shows the comparison of scores of students at

FC and COE for the constructs of DAL and SAL, overall scores for SCP/DAL and TCP/SAL and SUV2012.

Table 4. 5 Comparison of Scores of Students at the FC and the COE

	Group	N	Mean	Std. Deviation	*t*-statistic	df	Sig. (2-tailed)
Seek Meaning	FC	96	9.65	3.76	0.918	169	0.36
	COE	75	10.17	3.68			
Relating Ideas	FC	96	11.15	3.19	1.676	169	0.096
	COE	75	11.97	3.22			
Use of Evidence	FC	96	9.95	3.77	0.359	169	0.72
	COE	75	10.15	3.36			
Synthesise & Apply	FC	96	9.3	3.14	5.415	169	0
	COE	75	12.07	3.52			
Lack of Purpose	FC	96	7.91	3.24	-1.246	169	0.215
	COE	75	7.35	2.44			
Unrelated Memorising	FC	96	8.99	3.17	-2.88	169	0.004
	COE	75	7.6	3.08			
Syllabus bound /Lack of Research	FC	96	9.34	3.76	-1.714	169	0.088
	COE	75	8.4	3.32			
Fear of Failure	FC	96	10.65	4.08	-1.656	169	0.1
	COE	75	9.69	3.23			
UAE Vision 2021	FC	96	6.61	2.29	1.363	169	0.175
	COE	75	7.11	2.41			
SCP/DAL	FC	96	40.04	12.09	2.605	169	0.01
	COE	75	44.36	8.75			
TCP/SAL	FC	96	36.89	8.24	-3.329	169	0.001
	COE	75	33.04	6.41			

4.2.1.1 Findings for the constructs for DAL. The average score of students at the FC is (M = 9.65, SD = 3.76), comparatively lower than the average score of students at the COE (M = 10.17, SD = 3.68) on the subconstruct "seeking meaning." According to the *t*-test, this difference is statistically insignificant, with *t* (df = 169) = 0.918, p > 0.05, indicating that both students at the FC and the COE use the subconstruct "seeking meaning" to the same degree.

The same applies for the subconstructs "relating ideas" and "use of evidence." However, students at the COE scored comparatively higher on the subconstruct "synthesise and apply," with the difference in the mean score of the *t*-tests being statistically significant. This difference implies that students at the COE use "synthesise and apply" more readily in their learning strategies than students at the FC.

The results for the DAL construct indicate that the average score of students at the COE is comparatively higher than the average score of students at the FC, and the *t*-tests show that the difference in the mean scores is statistically significant. Therefore, the findings imply that students at the COE apply DAL in their learning approach more than students at the FC.

4.2.1.2 Findings for the constructs for SAL. The average score of students at the FC for the subconstructs "lack of purpose," "syllabus-bound" or "lack of research" and "fear of failure" is higher than the average score of students at the COE. However, the *t*-test results being statistically insignificant suggests that students from both colleges use these subconstructs to the same extent. Students at the FC did have a statistically significant higher average score for the subconstruct "unrelated memorising" than students at the COE, which reveals that students at the FC applied SAL to a higher extent than students at the COE.

4.2.1.3 Findings for SUV2021. Although students at the FC scored comparatively lower than students at the COE, the difference in the mean score is not statistically significant for the construct "SUV2021." Therefore, it appears that students from the FC support UAE Vision 2021 to the same extent as the students from the COE.

4.2.1.4 Comparison of scores of FC students on the DAL and SAL constructs. The students from the FC score significantly higher on DAL than SAL, indicating that they apply more DAL strategies to their learning than SAL strategies (Table 4.6).

Table 4. 6 Comparison of Scores of FC Students on the DAL and SAL Constructs

	Mean	N	Std. Deviation	*t*-statistic	df	Sig.
DAL	40.04	96	12.09	2.146	95	0.034
SAL	36.89	96	8.24			

4.2.1.5 Comparison of scores of COE students on DAL and SAL constructs. Table 4.7 shows that students from the COE score significantly higher on the DAL construct than on the SAL construct, indicating that they apply DAL strategies more in their learning approaches than SAL strategies.

Table 4. 7 Comparison of Scores of COE Students on DAL and SAL Constructs

	Mean	N	Std. Deviation	*t*-statistic	df	Sig.
DAL	44.36	75	8.75	9.245	74	0.000
SAL	33.04	75	6.41			

4.2.2 Comparison of FC and COE faculty. The comparison of scores for faculty at the FC and at the COE is described below.

4.2.2.1 Comparative scores of FC and COE faculty on the SCP and TCP constructs. Faculty members from both colleges scored the same on using SCP, as the mean difference between both on the *t*-test results was statistically insignificant (Table 4.8). This score indicates that faculty members at both colleges utilise SCP more and similarly in pedagogic practice. Similarly, Table 4.9 indicates that the scores for TCP is the same for faculty at both colleges.

Table 4. 8 Comparative Scores of FC and COE faculty on the SCP Construct

	N	Mean	Std. Deviation	*t*-statistic	df	Sig. (2-tailed)
COE Fac	16	22.38	7.43	1.548	21	0.136
FC Fac	7	17.86	2.67			

4.2.2.2 Comparative scores of FC and COE faculty on the TCP construct.

Table 4. 9 Comparative Scores of FC and COE Faculty on the TCP Construct

	N	Mean	Std. Deviation	t-statistic	df	Sig. (2-tailed)
COE Fac	16	13.69	3.67	-0.403	21	0.691
FC Fac	7	14.29	1.98			

4.2.2.3 Comparison of the SCP and TCP scores for FC faculty.

Table 4.10 indicates that faculty members at the FC are inclined to use DAL more than SAL, with the mean difference being statistically significant.

Table 4. 10 Comparison of the SCP and TCP Scores for FC Faculty

	N	Mean	Std. Deviation	*t-statistic*	df	Sig. (2-tailed)
SCP	7	17.86	2.67	*2.500*	6	0.046
TCP	7	14.29	1.98			

4.2.2.4 Comparison of the SCP and TCP scores for faculty at the COE.

Table 4.11 indicates that faculty members at the COE score significantly higher on using SCP than TCP.

Table 4. 11 Comparison of SCP and TCP Constructs for COE Faculty

	N	Mean	Std. Deviation	*t*-statistic	df	Sig. (2-tailed)
SCP	16	22.38	7.429	5.373	15	0.000
TCP	16	13.69	3.665			

Note: These findings for SCP and TCP will be merged with the findings from the qualitative inquiry and will be discussed in Chapter 5.

4.3 Findings of the Qualitative Inquiry

The comparative findings for faculty at both colleges are described below first (section 4.3.1) followed by the findings for the students at both colleges (4.3.2). The same questions

were posed for the interviews and the FGD for faculty at both the FC and the COE. However, some questions were adapted to be college specific. Additional questions were added in the FGD, as they occurred at the last stage in the data collection process. The lists of questions used can be found in Appendices E, F, G and H. The semi-structured questions were used as primers to generate discussions that went beyond the questions posed. Consequently, other unpredicted but relevant themes emerged. The findings from the three data sources (interviews, FGD and OEQs) were combined and categorised to respond to the research questions (RQs) that drive this study.
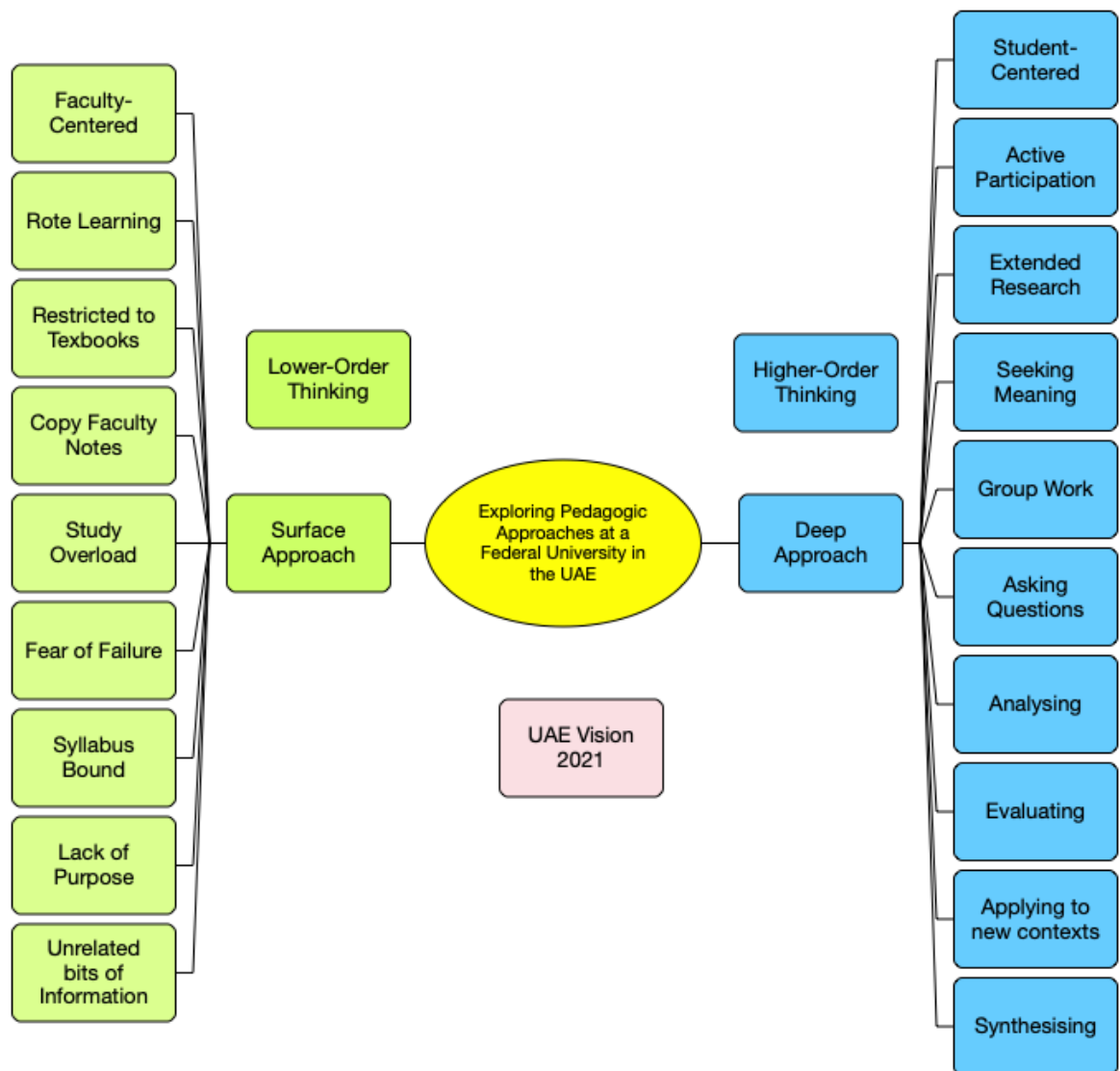
Figure 4. 1 Constructs and subconstructs for the D/SAL.

The data collected from the semi-structured, in-depth interviews, FGD and responses to the OEQs on the survey, as explained in the methodology chapter (section 3.3.2), were thematically coded and categorised for the main constructs and subconstructs. The constructs used in the analysis of the qualitative data for faculty were based on the theoretical framework discussed in the literature review (section 2.4) and the instrument ATI, as described in the methodology chapter (section 3.3).

Given that there were many subconstructs relating to the main constructs, these were again grouped into related categories to respond to the research questions. Figure 4.1 above shows the constructs and subconstructs of DAL and SAL.

4.3.1 Comparative analysis of findings for faculty

As discussed in section 3.2.4 in order to protect the identity of the participants, pseudonyms were used. Pseudonyms as shown in Table 4.12 below were used to refer to the participants of both colleges and faculty and students respectively.

Table 4. 12 Participant Pseudonyms

Participants	Faculty Pseudonyms	Student Pseudonyms
FC Interview	FC FP1, FP2 …	FC SP1, SP2 …
FC Focus Group	FC FFGP1, FFGP2 …	FC SFGP1, SFGP2 …
COE Interview	COE FP1, FP2 …	COE SP1, SP2 …
COE Focus Group	COE FFGP1, FFGP2 …	COE SFGP1, SFGP2 …

4.3.1.1 RQ1. Do the pedagogical approaches practised in two colleges within a female federal university in the UAE promote the deep approach to learning in order to generate higher-order thinking and are there any differences between the two colleges?

The findings from both the FC and the COE faculty participants overwhelmingly revealed that student-centred constructivist approaches are being practised by faculty at both colleges. Table 4.13 below shows the comparative findings of the beliefs and learning tasks applied which indicate the use of SCP or TCP approach.

Table 4. 13 Responses to RQ1 from Faculty at the FC and the COE

Constructs and subconstructs	Findings for the FC faculty	Findings for the COE faculty
SCP	All faculty at both colleges said they applied constructivist pedagogy to stimulate DAL in students.	
Annual curriculum plans at both colleges Internship at COE	Annual curriculum plans submitted by faculty are not approved without activities being embedded.	Students also visited schools throughout the duration of the programme, which culminates in a six-month internship.
Promotes HOTS – critical thinking, analysis, evaluation, application and synthesis of new knowledge	Students struggled initially with applying critical thinking due to the dominant SAL pedagogic practice in compulsory education.	60% said students accessed critical thinking well while COE FP5 said critical thinking surfaced better in group work, attributing it to the influence of the patriarchal society.
Outcome-based curriculum	All faculty members confirmed that the outcome-based model is practiced and assessments are tied to the learning outcomes.	
Formative assessments	65%–70% of assessments at both colleges are formative, and consist of classroom assignments, research assignments and internships.	
Personal teaching philosophy	All faculty members affirmed that they believed in the constructivist pedagogy to stimulate DAL in students and taught that way.	
Professional development	Faculty receives feedback on their teaching practice. Opportunities are presented to faculty for continued professional development.	
TCP		
Faculty-centred	None. However, concerns were raised by 33% of FC students about two faculty members who are not participants of this study.	None
Time constraints to complete the syllabus	None	None
Syllabus-bound	All faculty members at both colleges said they need to adhere to the syllabus but had flexibility to include alternate study resources.	
Memorising unrelated facts	All faculty members at both colleges said that they encouraged memorising of facts such as definitions, algorithms, etc.	
Anxiety to get passing grades and complete the programme	Some students were anxious to just get passing grades and graduate regardless of the type of approach to learning used.	
Heavy workload on faculty	80%	All
Heavy workload on students	All mentioned that coping with English–the language of instruction–was stressful for students.	30% mentioned it is a demanding programme and required hard work and long hours.

Summative exams and the use of multiple-choice questions	Faculty at both colleges claimed that multiple-choice questions and short answers can be structured to assess critical analysis. Furthermore, they explained that some of the summative assessments were based on practical assignments.

Additionally, FC FP1, COE FP2 and COE FFGPs noted that the curriculum at both the FC and the COE includes a research study as part of the course assignment, wherein students collect primary data, perform an analysis and complete a report. This also provides an opportunity for students to contextualise Western models to local situations and exercise their learning tasks of knowledge transfer, critical thinking and synthesis.

4.3.1.2 RQ2. Is UAE Vision 2021 recognised amongst students and faculty as a driver of the deep approach to learning in the two colleges under study?

All faculty at the FC and the COE faculty were aware of the need to develop critical thinking in students as a mandate and a vision of the country. However, 90% were not aware of the details of UAE Vision 2021. Neither were the faculty aware whether the students specifically knew that UAE Vision 2021 influenced approaches to learning.

However, FC FFGP3, who was a member of the university curriculum committee, explained that the directives for educational change stemming from the education pillar of UAE Vision 2021 are embedded within their curriculum. He said that both students and faculty may not be aware of it, but students are indeed being taught using these directives. He explained that sometimes mandates came directly from the Prime Minister's office, asking them to align various pillars of UAE Vision 2021 to the course learning outcomes, hence, "when the class is being designed, UAE Vision 2021 is at the forefront of the design of the courses" (FC FFGP3).

COE faculty members P1, P4, P5 and P6 commented that students worked hard to achieve their grades and desired to contribute to the country's development. COE faculty member P2 noted that the college has given the students very good training and they have come through a tremendous journey, so, if they choose to go into the professional world, they will be

able to contribute to the country in big ways. The UAE Vision 2021 for educational transformation and Emiratisation within the teacher preparation programme at COE appears to be meeting the goal for qualified Emirati national teachers leading the change in public schools as discussed in chapter 2 (section 2.3).

4.3.1.3 RQ3. What are the major enablers and constraints to embracing the deep approach to learning during this period of transition?

Factors that have been mentioned above in section 4.3.1.1 are not repeated here, unless it is a significant constraint that applies to both RQs. Additional findings that added significance to the factors mentioned in the table are described below.

Table 4. 14 Findings for Faculty Enablers & Constraints at the FC and the COE

	FC	COE
Enablers		
Faculty recruits	A high faculty recruiting standard is maintained by the administration. COE faculty members P1, P2, P5 and P6 commented that the DAL is embedded within the curriculum, so faculty would have to teach that way.	
Student-centred pedagogy	100% confirmed that the curriculum is structured this way and they all practiced this pedagogy.	
*Flexibility to adapt educational elements	All said they had the flexibility to supplement study resources and to use preferred teaching strategies, if they are student-centred.	
Constraints		
Lowered student entry requirements at the FC and graduate career entry at the COE	Lowered entry requirements in recent years have created large class numbers, negatively affecting quality.	Graduate students encounter problems in their teaching careers at public schools after graduation.
Mixed-ability classes at the FC Undergraduate programme can take six to seven years to complete	Diversity of students ranging from high to low language proficiency lowers pedagogic quality.	COE student SP1, in the last semester of her undergraduate program, is in her seventh year of college. Two years at ABP and a repeat semester have lengthened the time. This is not uncommon.
**Top-down decisions and rapid change	All confirmed decisions come from the top down and there has been rapid change over recent years.	
Increased workloads	All claimed that the workload has increased tremendously since the introduction of the EQAMS.	

Western models	All stated that although they tried their best to adapt Western concepts to fit the local context, it was challenging to always find applicable materials. In the absence of these, the original approach is maintained.
Budget requests aligned to UAE Vision 2021 are approved	Budget constraints restricted curriculum-enhancing opportunities, however FC FP4 and COE FP1 and FFGPs said if the requests were aligned to UAE Vision 2021, they received approval.

Below are additional related factors both on the marked sections of the table above and other factors that emerged during the interviews and FGDs.

*Flexibility to adapt educational elements: However, all said that this is getting increasingly restricted since the CAA accreditation and the introduction of the EQAMS leading towards standardisation. A faculty committee meets to formulate the assessment plan for the year and, once it is approved by the curriculum committee, all faculty members are required to adhere to the plan. FC faculty members P2, P3 and FC faculty member FGP2 said that since the EQAMS went into place, once the annual assessment plan has been submitted there is limited or no freedom to make even minor adjustments to enhance materials. COE faculty members FP1 and FFGP4 said that once the plan is submitted, most faculty don't make suggestions for changes, even for minor adjustments over the course of the year, because of the lengthy process it involves.

** Top-down decisions and rapid change: One example cited at the FC is the abolishing of the Academic Bridge Program (ABP). FC FP3 said that faculty who were teaching these courses or those receiving the students in the following year were not consulted before the change was announced. She added, "Nobody would have said it is a good idea to get rid of the ABP until you change the school system" (FC FP3). At the COE, the appointment of a new dean came suddenly and unexpectedly. COE FP1 expressed the view that the changes coming from the top down "sometimes dismantled the things that had been done before to the point of no repair" (COE FP1). Although, overall, faculty members said that the changes were good and are leading towards strengthening constructivist pedagogy, it does appear that feedback

from bottom up is not actively pursued or perhaps not seriously factored into the decision-making process for change.

4.3.1.3.1 COE 'Closing the loop'. As mentioned in the document analysis, 'closing the loop' is a structure set up to enable faculty members to provide feedback on the course for continued improvement. Faculty at the COE who teach the same courses are required to meet at the end of each semester to evaluate their courses in "closing the loop" meetings (University X Learning Outcomes Handbook 2016–2017). COE P1, P2, FGP 2, 3 and 4 expressed the view that it has become increasingly difficult to meet and provide quality feedback due to a full schedule and time constraints—thus, sometimes it is done "on the run." Another factor FGP 3 and 4 pointed out is that faculty may be hesitant to bring up issues that may require discussion at multiple levels, as the process is lengthy. Thus, "closing the loop" meetings are kept to minor issues that can be implemented easily. This is similar to the above-mentioned factor of difficulty in making even minor changes to the curriculum once the plan for the year has been submitted. A response may not arrive in time for implementation in the following year.

4.3.1.3.2 Introduction of the EQAMS. Similar concerns were raised by faculty members at both colleges regarding the EQAMS. They appeared to understand that the system is helpful when it comes to accountability to stakeholders, transparency, evaluation and ranking purposes and for improving the course. However, it has added a huge workload and stress on faculty, who have the time-consuming job of uploading to the system. COE FP2 explained that it has aided in the standardisation of the course and assessments between campuses within the university. She said, "It has become prescriptive in the way faculty think and connect specific links between the assessments and the learning outcomes" (COE FP2). Faculty members also claimed that the rubric for the assessments being posted on the EQAMS must be adhered to rigidly and there is accountability for how the grading is done. However, FC FP1 noted that it

is challenging to justify qualitative activities such as group work or practical assignments as they can be subjective to assess against a rubric on the EQAMS.

4.3.1.4 RQ4. Have other factors, such as pedagogic practice in compulsory education, contributed towards university students' approaches to deep learning? Two main constraints hindering students accessing SCP surfaced consistently at the FC. These are described below.

4.3.1.4.1 Lack of student readiness to access DAL. All faculty participants at the FC and the COE, including those responding to the OEQs, mentioned that students transitioning from the public-school system were used to TCP in compulsory education. All faculty participants at the FC who receive these students year after year said the students have difficulty in adapting to SCP practices and using critical thinking, since they were used to memorising. Often during their first year at university, students wanted to know what they needed to memorise for their assessments. FC faculty member P1 said they would be shocked when she would tell them that there was nothing to memorise and the important thing was to understand the concepts and apply them. The participants all acknowledged that it is not the lack of intellectual capabilities but the type of learning approach used in the public-school system, along with the lack of English language proficiency, that presented an obstacle to their accessing HOTS. FC FGP1 said, "The challenge for us is to sort of find ways to poke the higher-order thinking stuff into it in a way that is based on their level of English, so they can get some of it."

4.3.1.4.2 English language barrier. At the FC, all faculty participants said that the lack of proficiency in the English language for the students transferring from the Arabic-medium public schools was a huge constraint. FC FP3 expressed the view that the level of English of the students who have gone through the Academic Bridge Program (a student preparation programme in English language skills for university study) is still low and they struggle to keep up. All participants at FC explained that this is a massive barrier as it affects other areas of their

learning—such as accessing DAL—and inhibits doing further research. In response to the OEQ on constraints, one FC faculty member said, "The only significant barrier is language. Students cannot possibly achieve their potential when admitted to institutions with an IELTS 5" (FC FP3).

At the COE, almost all participants expressed the view that students continue to struggle with the English language and find it difficult to express themselves clearly and, especially, critically. COE faculty member FGP4 said the level of English in the textbooks and academic journals provided in the course learning resources is beyond the level of the students' English language capabilities. She found that using different sources or providing paraphrased readings and relevant videos was more effective in helping students to understand the curriculum requirements. This indicates that SAL is resorted to because of the lack of English proficiency.

The next part of this chapter will report the findings of the data collected from the students at both colleges in response to the RQs.

4.3.2 Findings from students' perspectives at the FC and the COE. The comparative findings from both colleges are listed in tables for some of the RQs, with additional significant details noted below the tables.

4.3.2.1 RQ1. Do the pedagogical approaches practised in two colleges within a female federal university in the UAE promote the deep approach to learning in order to generate higher-order thinking and are there any differences between the two colleges?

There was an overwhelming confirmation from students that SCP is being applied to a large extent at both colleges. Table 4.15 below reveals the findings of the learning tasks applied by students for the constructs of DAL and SAL in relation to RQ1.

Table 4. 15 Findings for Students in Response to RQ1

Learning Tasks	FC	COE
DAL	All said that they are actively engaged in class and are taught to use critical thinking, to apply learning and DAL approaches.	
*Understanding, seeking meaning	All confirmed that faculty made great effort to help them achieve understanding.	
Multiple-choice questions	Several said that critical analysis was required even for multiple-choice questions in their assessments.	
**Application	All confirmed that they are encouraged to and find opportunities to apply their learning in other contexts.	
Group work	All confirmed that group work is a regular part of their classes. Several participants said that sometimes they would discuss a topic in groups and then work on the assignment individually.	
Research assignments	All confirmed that they had research assignments within their course where they needed to collect primary data and write a report on it. COE SP1 said, "Even if I know a topic, when I research it, I learn even more deeply."	
Extended research	All said that this is not required of them and they used selected sections of their textbooks and provided learning resources.	
Outcome-based curriculum	All confirmed that they had learning outcomes to achieve and that the learning outcomes were connected to their assessments.	
Formative assessments	All confirmed that they are graded on both formative (about 75%) and summative (30%) assessments. Grading for the formative assessments is carried out throughout the year, which students commented helped them to work consistently instead of cramming at the end.	
FC – Prior learning COE – Internship	All participants coming from the public schools said that what they learned in compulsory education was developed further. However, those coming from the private schools said most of the material was repeated.	Throughout the duration of the course, students do practicum—practical work. The course culminates in a six-month internship.
SAL		
Faculty-centred	Three student participants, FC SP2, SP4 and FC SFGP3, said that two faculty members (not FPs of this study) did not have good teaching skills and their lessons were boring.	Although most SPs confirmed that their course was taught using SCP, 11% said that some classes are entirely lectures. They thought this depended on the faculty and their style of teaching.

Time constraints to completing syllabus	None said it was a constraint; at the COE several participants said they could complete unfinished activities the next day.	
Overload of study materials	All student participants at both colleges explained that they are not required to study the entire textbook but are given sections of the textbook and additional learning resources. Assessments are confined to these materials.	
Extended research	All said that extended research is not required. However, they took their own initiative to research difficult topics online to enhance their understanding.	
Memorisation	All student participants said that they are encouraged to respond to assessment questions according to their understanding. However, all students concurred they used a mixture of memorisation and understanding.	All participants said that any memorising is related to foundational facts. COE SP5 said that without understanding, just memorising a few facts is not of much use.
Heavy workload on students	Several students said that all their assignments and assessments needed to be submitted around the same time. This added a lot of work and stress. At the COE, additionally, completing their assignments along with meeting internships requirements was stressful.	
Rubrics for grading	Most student participants said that the criteria on the rubric were challenging and many were anxious whether they could meet them.	Students at the COE said that they passed if they met the criteria on the rubrics for their internships and that it was only a pass or fail grade.

Further significant factors marked in the table above that added to the findings are expanded on below.

* *Understanding:* Seeking meaning and understanding appeared to be vigorously pursued, as FC SP7 noted: "They don't let us leave the classroom without understanding." COE SFGP2 explained that in her future teaching career, she will be dealing with children and not machines, so it is very important that they understand and analyse each situation and come up with solutions for that situation.

** *Application:* Students implied that they tried to find links between their study and life contexts. FC SP2 claimed, "I connect the subjects to things outside. I find this very exciting, an exciting way to learn." While at the COE, respondents said that they had to apply their

learning in their field visits at the schools and their internships. COE SFGP6 said, "When we come to these schools for our internship and we do it, it gives us a good idea on how to do it."

4.3.2.2 RQ2. Is UAE Vision 2021 recognised amongst students as a driver of the deep approach to learning in the two colleges under study? The participants at both colleges were all aware of UAE Vision 2021 and knew that critical thinking and quantitative reasoning were important skills to achieve and were part of the vision. FC SP2 said, "Sheikh Mohammad is always saying that we have to be in first place, that we have to be creative, so often helps us" However, none knew the extent of the changes sought in depth.

They were also aware that, as nationals, they need to actively contribute to the development of their country.

As teachers in training, COE SP2 and all COE student FG participants expressed the view that they would like to contribute to their country by teaching the national children in the public schools. Now that they are equipped with new teaching methodologies, COE SFGP5 explained (and all others in the FGD agreed) that they feel better qualified to teach with the new student-centred approach to learning, and they would like to help with the implementation process. She added, "It is what Sheikh Mohammed is encouraging us to do, to give back to the public schools, and the Vision 2021 [is] about learning and teaching."

4.3.2.3 RQ3. What are the major enablers and constraints to embracing the deep approaches to learning during this period of transition? All participants at both colleges said that, in general, they found the way of learning in university different from what they were used to in school. Table 4.16 demonstrates the findings taken from the perspectives of students.

Table 4. 16 Findings for Enablers and Constraints from Students' Perspectives

	FC	COE
Enablers		
New activity-based course at the FC and high pedagogic standards at the COE	The recently added Innovation and Entrepreneur course appeared to rank as a favourite amongst students.	Internships and regular practical assignments at the schools provided opportunities for knowledge and synthesis.
DAL yielding HOTS	All confirmed DAL is being encouraged and practiced by most faculty at both colleges. The classes keep them engaged and they find themselves developing HOTS.	
Critique of faculty	All confirmed that classes were stimulating and faculty sought to help them understand the content. Some critique of faculty is described below in the constraints section.	
Summative in compulsory education vs. Formative in HE	All said they preferred the formative type of assessments. FC SP5 said that being tested throughout is a continual revision of content, opposed to the one summative assessment that tests the entire year's content at the end, which is stressful.	
Research assignments	All said that they enjoyed the research assignments where they needed to collect primary data from the field, analyse and report them.	
Constraints		
FC – Some courses are repeats from compulsory education	SP1, SP4 and SFGP2 and SFGP4 said that some of the courses (most cited Emirates Studies, Global 2 and 3 and Arabic 2 and 3) were a repeat from compulsory education and were a waste of time and boring.	Several respondents at the COE said it would have helped them in their choice of major programme if they could have had one or two courses on education whilst at the FC.
FC – Large class sizes compromise quality	Most said that the class sizes were large, with about 30–32 students in each class. This made quality feedback and mentoring from faculty challenging. FC FGSPs also said that the quality of marking assessments might be compromised.	In recalling their time at the FC, COE students confirmed the same regarding large class sizes hindering quality feedback. The class numbers at the COE are smaller, and students see the difference in the quality of mentoring and feedback they receive.
FC – Marking COE – Lack of internship opportunities at public schools	FC SFGPs expressed the view that the standard of the marking of assignments may be compromised. SFGP4 noted, "I submitted my essay one time online at 12:43 and at 12:50, the professor put the grade [up]. He took five minutes [to read] my paper and [grade] it."	All the COE student FG participants said that they would have liked to have had an opportunity to intern at a public school, as it would have given them added confidence.

Language barrier	All students transitioning from the public schools said that accessing DAL and adjusting to HE in general was a huge struggle due to lack of competency in the language of instruction in their university.

4.3.2.4 RQ4. Have other factors, such as pedagogic practice in compulsory education, contributed towards the university students' approaches to learning?

 Two factors consistently surfaced amongst students at both colleges as hindering their abilities to access HE at a higher level of competency. These are listed below.

4.3.2.4.1 From TCP to SCP. All students transitioning from public schools said that the pedagogic approach in compulsory education differed greatly from what they experience at the university. They claimed that the system of education in the public schools they attended was textbook-based, with an emphasis on memorising to pass exams and very little essay writing or connecting the concepts learned to other areas. FC SP2 and FC SFGP3 explained that in most public schools, they could get a booklet with seven to eight sample papers and most of the questions in their examinations were taken from these samples. FC SFGP3 said of the Innovation and Entrepreneur course: "I think there's, like, a lot of frustration because the students are not used to having this creativity, and I kind of don't like that because I am not used to learning in that way."

Many said it was a struggle initially to apply critical thinking or HOTS in their learning. They felt it was easier to be given paragraphs to memorise than to be asked to think beyond what was expected. This hindered their accessing DAL in their university education.

4.3.2.4.2 Proficiency in the language of instruction in HE. Most students at the federal universities transition from the Arabic-medium public schools, and the language barrier is a hurdle to overcome for most. In recounting her experience, FC SP4 said:

When I graduated from the government school, all the English I knew was 'Yes' and 'No,' and some basic terms. Entering university, I was shocked. I find it challenging to deal with the material, how to understand it.

Students at the COE made similar comments in recollecting their experience of transferring to an English-medium university. COE SP2 said that it took a while to adjust to the direction of writing in the FC, as the writing goes from right to left in Arabic but the other way around in English. Their preparation in the Academic Bridge Program (ABP) was very helpful to them, but it was not enough to get to a level required in the HE programme. They added that it affected their understanding and their abilities to express themselves deeply for the assignments and activities.

4.3.2.5 RQ5. Is there a difference in the perception of change between students and faculty in the two colleges under study and are there any differences between the two colleges?

Table 4.17 shows the findings to RQ5 from the perspectives of students and faculty.

Table 4. 17 Findings Relating to Comparative Perceptions of Faculty and Students

Construct	Faculty Participants	Student Participants
Student-centred pedagogy	All affirmative	All affirmative
Lack of college readiness for students entering FC	FC faculty – All affirmative	All affirmative at both colleges
Influence of SAL in public schools hampering accessing DAL in HE	All affirmative at both colleges	All affirmative at both colleges
Lack of English language proficiency for incoming students hindering accessing HOTS	All affirmative at both colleges	All affirmative at both colleges
Large classroom sizes hinder quality	FC faculty – 100% affirmative	All affirmative at both colleges

Repeating large amount of materials learned in compulsory education for some subjects	Not addressed and nothing mentioned by faculty	All of students said that some courses are not essential and are repeats of compulsory education
Some faculty not qualified to teach student-centred pedagogy	13% at the FC said that not all faculty are qualified to teach, even if they are academically highly qualified, unless they have teaching qualifications as well. 0% mentioned anything similar at COE	33% of SPs at the FC said that two faculty members (not participants of this study) did not teach using DAL. 13% at COE said that some faculty lectured only in some of the classes but did not imply that they did not use DAL approaches at other times
A new activity-based course at FC is rated as a favourite amongst students	26% affirmative	All affirmative
Study overload	13% of respondents at the FC and 23% at the COE mentioned that it is a demanding programme	All affirmed at both colleges that assignments being due all at the same time added a lot of stress and study overload

The data from the different methods for both faculty and students appear to indicate that both students and faculty have similar perceptions of the learning and teaching approaches used at these two colleges.

As this RQ leads to the comparing of data between the different sample sets, triangulation will be discussed and justified here.

4.4 Triangulation of multiple data sources

Triangulation as discussed in chapter 3 (section, 3.1.3), when used in mixed-methods research designs, allows for comparing of the findings to validate the accuracy of the data (Bryman, 2006; Tashakkori & Teddlie, 2003). Data from different sources can either converge, complement or diverge. A comparison of the quantitative and qualitative data in this study showed convergence and complementarity and a consistency but there was some divergence.

4.4.1 Triangulation of findings from faculty at both colleges. The findings of the quantitative survey revealed that the mean difference between SCP and TCP being used in pedagogic practice by faculty at both the FC and the COE was statistically significant. The scores therefore indicate that SCP is used significantly more than TCP by faculty at both colleges (section 4.2.2). The qualitative inquiry confirmed the same, indicating that this data converged. The findings of the student survey complemented the data from the findings of the faculty survey. The data from the student survey confirmed that SCP is used more readily at both FC and COE. This finding also corresponds with the document analysis, which said that a student-centred pedagogy is pursued.

The data collected from the qualitative inquiry, using interviews and FGDs, revealed that there were external and internal factors that were beyond the control of faculty that hampered the application of SCP fully. These are related to the lack of college readiness and lack of language proficiency in EMI (section, 4.3.4.4). The data from the document analysis converged and was complementary in the areas of the type of pedagogic practice pursued in HE, UAE Vision 2021 being a catalyst for change through top-down mandates. Some divergence was found in the comparison of the data from the document analysis and the data collected from the qualitative inquiry. Two of the divergent factors found are discussed in Chapter 5 (sections, 5.1.3.1.2.2 and 5.1.3.2.3) on prescription vs innovation and student and faculty feedback systems.

4.4.2 Triangulation of findings from students at both colleges. The data for the students' findings for both colleges from the multiple data sources are shown in Table 5.1. Although the application of the learning task may vary and be at differing levels, the percentages shown below gauge the number of participants that confirmed that the task is used in their pedagogic practice. The comparison reveals convergence and complementarity of most of the variables, with some divergence. The divergence is discussed in length in Chapter 5.

Table 4. 18 Triangulation of Data for Students' Findings at the FC and the COE

Comparative analysis and triangulation					
Constructs	Quan – FC Students	Qual – FC Students	Quan – COE Students	Qual – COE Students	Document Analysis
DAL – Learning Tasks	Ranked higher than SAL	Ranked higher than SAL	Ranked significantly higher than SAL	Ranked significantly higher than SAL	Promotes DAL
SCP	Yes	All	Yes	All	Promotes DAL
Seek Meaning	High-equal	All	High-equal	All	Promotes HOT
Analyse	High-equal	All	High-equal	All	
Evaluate	High-equal	All	High-equal	All	
Apply	Lower	All	Higher	All	
Synthesise	Lower	All	Higher	All	
SAL	Higher		Lower		Not encouraged
Lack of purpose	High-equal	Mixed reasons	High-equal	Mixed reasons	
Syllabus-bound	High-equal	mixed reasons	High-equal	Mixed reasons	Learning outcomes, ABP lengthens undergraduate program
Unrelated memorising	Higher	With understanding	Lower	With understanding	
Fear of failure	High-equal		High-equal		

The conclusion drawn is that data collected from the multi-methods mostly converge and are complementary but do diverge in some aspects. The divergence does not show a lack of reliability or validity but as Tashakkori and Tedlie assert, divergence reveals new and unanticipated factors. These are discussed in Chapter 5.

4.4 Conclusion

The findings from the document analysis identified how the policies stimulated by UAE Vision 2021 in driving educational innovation in HE is being experienced in the two colleges

under study from the perspectives of students and faculty. It appears that constructivist, student-centred pedagogy is promoted at University X and faculty is implementing this practice.

Some key aspects that have been embedded in the university curriculum and which reflect a constructivist pedagogy include the following: accreditation from recognised western accreditation bodies and from the UAE accreditation body, CAA and the application of the outcome-based model, 'closing the loop' practice and student and faculty feedback systems. There appear to be some inconsistencies between what has been evidenced in the documents analysed and the findings from the interviews and FGDs.

The findings of the survey indicate that SCP is used significantly more than by both students and faculty at both colleges than TCP. However, the findings also indicate that students at the COE use "synthesise and apply" variable significantly more than students at the FC, while students at the FC use "unrelated memorising" variable significantly more than students at the COE. Students at both colleges scored highly and similarly on the variables "lack of purpose", "fear of failure" and "lack of research". The use of memorisation juxtaposed against understanding and seeking meaning seems to be inconsistent as memorisation is an attribute of SAL. The variables "lack of purpose" and "fear of failure" appear to be inconsistent characteristics of a constructivist pedagogy.

The influence of the pedagogic background in compulsory education and the language barrier surfaced as significant factors. The perception of change amongst both faculty and students appears to be similar in the areas explored. There also appears to be a consistent pattern regarding the perception of the main enablers and constraints as experienced amongst both faculty and students at each of the colleges.

The findings also show that the data collected from the multiple data sources triangulate. The data mostly shows convergence with some divergence. The inconsistencies found in the data will be analysed and discussed in the next chapter.

Chapter 5: Discussion

The findings of the document analysis, the quantitative analysis and the qualitative analysis, as well as the researcher's perspectives, are discussed in this chapter.

The chapter is divided into three sections: First, the discussion in response to the research questions prompted by this study. Second, the implications for practice and for theory—here, an alternative to the deep/surface approaches to learning model, which developed from this study and is unique to University X (but is suitable to the UAE HE context), is presented. Third, the strengths and limitations of this study, as well as recommendations for further research are discussed. The discussions below are in relation to the research questions and are categorised as such.

5.1 Research Question 1

Do the pedagogical approaches practised in two colleges within a female federal university in the UAE promote the deep approach to learning in order to generate higher-order thinking and are there any differences between the two colleges?

The findings of the empirical data from both the quantitative and qualitative inquiries at both colleges of both the students and faculty mostly converge and are complementary and are consistent with the attributes of the constructivist learning theories discussed in the theoretical framework in Chapter 2 (Table 2.2). The deviations and exceptions that surfaced from both inquiries are discussed below.

5.1.1 Unrelated memorising. In the quantitative inquiry, FC students scored significantly higher on the unrelated memorisation variable than COE students. However, students from both colleges used memorisation as part of their learning process and all faculty members at both colleges also encouraged some memorising. With reference to chapter 2 (Table 2.2), unrelated memorisation is an attribute of the surface learning paradigm (Marton and Säljö, 1976 & Biggs and Tang 1997). However, all parties at both colleges concurred in

the qualitative inquiry that understanding, analysing, evaluating, applying and synthesising knowledge using critical thinking was largely used in their learning and teaching approaches.

This type of combination (using both memorising and understanding) may not be the same as unrelated memorising for the possible reasons discussed below. As understanding the material appears to be a priority focus for both faculty and students in these colleges under study, one would need to understand the whole concept before any memorisation is undertaken. Therefore, it would seem unreasonable that the parts being memorised are unrelated.

Furthermore, within the context of the UAE where the national religion is Islam and all Emiratis are Muslims, memorisation of the Holy Quran (the Holy book of the Islamic religion) is a common practice since childhood (Karlsson and Mansory, 2008 & Wagner, 1993). Nawas and Jahangir (2015) claim that the process of memorisation of the Holy Quran by young scholars, called Hifz, stimulates cognitive processes leading to enhanced innovative learning skills. Nawas and Jahangir (2015) explain that Hifz involves encoding, which is careful attention to the text, retaining and recall embedded in long term memory (2015, p. 58). This can imply that within this context of the UAE, memorisation may be used to both deepen the understanding and reinforce the concept leading to the next levels of HOTS of analysing, evaluating and synthesising. As discussed in chapter 2 (section 2.4.3) Chinese and Asian learners use memorisation as part of their learning process and have been found to be high achievers academically. Therefore, some memorisation may not imply that SAL is the pedagogic approach applied.

As the findings indicate (section 4.3.2), the students' lack of competency in EMI may also provoke the use of memorisation. COE P3 said that she memorised some of the information and mixed it with what she understood and she found that she scored good grades using this method. Several student participants at both colleges confirmed the same. As discussed above, struggle with the language may induce memorisation.

5.1.2 Synthesise and Apply variable. Students at the COE scored significantly higher on the "synthesise and apply" variable than those at the FC, which may indicate that they were accessing DAL more readily. Much of the teacher education programme at the COE is based on application and transfer of knowledge, the internship includes case study research, creation of lesson plans, practical teaching and reflective assignments indicating that DAL is promoted. COE SFGP2 said, "There is nothing to memorise, the big part is to understand and apply". COE FGPs all acknowledged that they were confident to go into their teaching careers. This can imply that the curriculum and practice-based learning techniques applied at COE are indeed fulfilling UAE Vision 2021 of equipping graduates to compete in the knowledge economies.

The controversy raised within the theoretical framework in Chapter 2 (section 2.4.3) of SCP being more readily applied in some disciplines than others may apply in this context (Lawless & Richardson, 2002 & Yin, 1999). At FC, as students undertake 13 different courses, some of these may require more memorisation than others, indicating that SCP may be a successful approach for some disciplines and not others. FC SP2, SP4 and FGP3 said that some of the faculty members only lecture and do not engage the students actively and that their classes are theory-based and not practice-based. This correlates to a comment from a faculty member on the OEQ:

"I find that first semester students who haven't experienced the DAL, usually like it by the end of the semester and ask why their other teachers don't adopt a similar style. They realize that they learn so much more when they can actually apply the concepts presented in class rather than just memorizing everything" (COE faculty).

First semester students have just transitioned from FC where they take 13 different courses. Perhaps it is not possible to apply DAL all 13 of their courses and may be another

indication that DAL can be successfully applied in some disciplines more effectively than in others.

5.1.3 Summative assessments. A large percentage of assessments at both colleges are formative; however, there are mid-term and final semester summative assessments for most subjects. COE FP1 explained that a blended type of summative assessment is used, partly based on assignments and projects and partly on multiple-choice and short answer questions. As indicated in the theoretical framework in Chapter 2 (Table 2.2), multiple-choice and short answer questions are an indication of the surface approach. However, FC FP3 and COE FP1, FP2, FP6 and COE FFGP5 contend that multiple-choice questions can be framed to test critical analysis and that the theory tested in their courses is a small part of the assessment. This appears to be the approach that is used in the summative assessments and may suggest that DAL approaches are being integrated in this area of summative assessments. Dabell (2018) argues that summative assessments, if used in a formative way where feedback is provided, can enhance the learning process and this way both the formative and summative assessments are a balance.

Therefore, within this context, using multiple-choice questions in assessments may not be an indicator of TCP being used as a pedagogic practice.

5.1.4 Lack of purpose. Students at both the FC and the COE rated high and equally on the survey for the SAL variable of "lack of purpose," (section 4.2.1.2).

In the qualitative inquiry, an FC faculty respondent to the OEQ said, "Some students want to just get their degrees and move on". A large percentage of students at FC (FC SP1, P2, P4 and FC SFGPs 2, 3 and 5) claimed that five of their courses were either repeats or were not of value to the choice of their future major; thus, they were deemed a waste of time. COE SFGPs, reflecting on their time at the FC, also stated that some of the courses at the FC are a waste of time for the same reasons given by the FC students mentioned above. The low rating

on the "lack of purpose" variable at FC could be due to these reasons of lack of interest in some of these courses and the lack of connection to a future desired major.

However, at COE, the qualitative data revealed that students were excited to finish their degree and begin their career. This could imply that the students at the COE are motivated and do not feel a lack of purpose. These qualitative data are contradictory to the quantitative data on the "lack of purpose" variable for the COE students. The "lack of purpose" variable evaluates whether the students are intrinsically motivated to learn. Two of the sub-questions for the "lack of purpose" variable may not apply in the UAE context. One question asks if this major was chosen to secure a reputable and high paying job. The other question asks if the intention behind studying hard is to get good grades to secure a high salaried job. Both these questions could have prompted the students to tick "agree," reflecting their intentions to acquire a high paying, reputable job.

These may seem like reasonable aspirations; first, as a reward of their hard work and second, because within the context of the UAE they are encouraged to contribute to the development of the country (section 1.2.3). An additional factor that may have led them to respond in that way could be related to the concept of female empowerment; studying hard to get a good job could be translated as achieving a position of leadership and high status. Another factor that may motivate them to successfully complete their graduate degree, as Abdulla (2007) reports, is that their undergraduate degree is a form of security or an insurance policy for their futures. In the case that they are divorced or abandoned, they will be able to gain employment and support themselves and their families. Therefore, the high score on this variable "lack of purpose" within this context of a female university may not be an indicator for using SAL, as these women appeared to be highly motivated to complete their degrees.

5.1.5 Fear of Failure. The quantitative data showed that students in both colleges rated highly for this variable (4.2.1.2). In analysing the qualitative data, several factors emerged that

explained this divergence. This high rating for students at both colleges could stem from a fear of failing a grade and the need to repeat a year. This lack of confidence could be attributed again to the EMI barrier. Perhaps the difficulty to understand the content fully and respond clearly in assessments could trigger this fear of failure.

Additionally, most of the students undertake the two-year ABP, which, when added to the four-year undergraduate programme, totals six years for completion as opposed to counterparts worldwide who complete the same programme in three to four years. If a student fails one or two semesters, the program duration can extend to seven years. All the COE SPs had been in the programme between five to six years and COE SP1 was in her seventh year. FC FP1, P2 and COE FP1, P4 and P6 said that it is not uncommon for students to take leave to get married and return after marriage to continue their studies. This means an extension of their study duration. Therefore, within this context and from their perspective, failing a semester translates to an extension of their already lengthy undergraduate programme. This is a long and arduous journey—one they don't desire to extend the length of.

Furthermore, as COE FP6 pointed out, most of these students are first-generation female students to enter HE, therefore accountability to family could be high, further aggravating the fear of failure. All the above-mentioned reasons could justifiably contribute to this fear of failure. Therefore, rating highly on the "fear of failure" variable for the quantitative survey is not an indicator of SAL in this context.

5.1.6 Syllabus-bound, lack of extended research. The scores for "syllabus-bound" and "lack of extended research", an attribute of SAL, were equally high for both colleges in the quantitative inquiry (section 4.2.1.2). All students confirmed that they are not required to do extended research on their topics of study but relied on the articles, selected portions of the textbooks and the notes they take or the notes provided as study materials. Faculty confirmed the same.

This lack of extended research may very likely be due to the EMI barrier, and extended research is therefore not included in the course curriculum. W3Tech (2017) reports that 54% of all websites are in English, while only 0.6% are in Arabic. An extensive search on the web would require sufficient English language skills. If students are unable to comprehend online information sufficiently, it would inhibit extended research and justify relying solely on the provided study resources.

All faculty and students at both colleges confirmed that a research project is embedded within their curriculum. In this project, students collect primary data, analyse and evaluate the findings and report on them. This would reveal that DAL is pursued. However, the lack of language proficiency causes students to resort to SAL strategies as they may be unable to apply the DAL learning task of research and going beyond the boundaries of the syllabus. Therefore, the variables of "lack of extended research" and "being syllabus-bound", though characteristics of SAL, appear to fall in a grey area.

5.2 Research Question 2

Is UAE Vision 2021 recognised amongst students as a driver of the deep approach to learning in the two colleges under study?

Both the quantitative and qualitative data revealed that students at both the FC and the COE are aware of UAE Vision 2021 as a driver of change promoting critical thinking and creativity. The results of the quantitative survey from students at both colleges showed strong support for UAE Vision 2021 and the desire to contribute to the country.

As there have been several overlapping and concurrently running government initiatives in recent years (Chapter 1, para 8), it is not surprising that most students are not aware of the intricate details of how UAE Vision 2021 influences their learning process. However, the findings also revealed that pillars from UAE Vision 2021 are embedded within

the curriculum and the learning outcomes (FC FFGP3). In this way, policy directives stemming from UAE Vision 2021 are influencing pedagogy at the colleges under study.

This may also reflect the positive side of top-down policy directives working from within the system as unencumbered catalysts for change. From the researcher's perspective, this indicates a possibly effective and indirect way to integrate these changes throughout the course instead of regular reminders, which may be taken as propaganda on implementing policy. Some constraints of top-down mandates are discussed later in this chapter.

5.3 Research Question 3.

What are the major enablers and constraints to embracing the deep approach to learning during this period of transition?

The findings in Chapter 4 (Table 4.15 and section 4.3.2.1), obtained from the qualitative inquiry, describe enablers and constraints from the perspectives of both faculty and students. Deviating and prominent factors are discussed below.

5.3.1 Enablers. The student-centred and outcome-based education model as the expected pedagogic approach at this federal university (University X Factbook 2017–2018) appears to be practised within both colleges under study.

5.3.1.1 Student-centred pedagogy. The assessment plan is filtered through multiple levels and is approved before the new year begins, ensuring that a well-developed curriculum and plan for the year is in place. The SELE, FELE and "closing the loop" feedback provisions appear to form a good system, as they allow for bottom-up (students and faculty) flow of suggestions for improvements on the teaching approach and the courses.

The COE's internship programme appears to stimulate critical thinking, application and synthesis of knowledge. Students at the COE rated higher on DAL in the quantitative survey than students at the FC, whose curriculum does not include an internship programme.

COE SP1, SP4, SP5 and SFGP6 said that the internship brought the theory to reality. They, and all COE SFPs, said they felt confident about embarking on their future careers. COE FP5 said, "When I come to class, I am always very engaged. I don't feel I am actually studying. I am enjoying it very much and I feel I am developing personally".

Student participants at both colleges attested that their lessons are integrated with activities, assignments, case study, group work, discussions and quizzes. The rubric system for marking provides clarity for students and faculty on expected grading standards. Besides eliminating complaints of unfair grading, the marks being posted on the EQAMS provides transparency. The qualitative inquiry revealed that students prefer the student-centred deep learning approach that is being largely applied at their colleges and rated it highly on their SELEs (FC FP1).

5.3.1.2 Teaching philosophy. Faculty members' personal philosophies on learning and teaching approaches influence the teaching approach used (Entwistle, 2009; Macfarlane, 2014; Ramsden 2003, chapter 2, section 2.5). All faculty at both colleges said that they believed in and practised SCP in their teaching strategies. Students also confirmed that faculty encouraged and taught in ways to help students understand and apply the content and use their critical thinking skills. Additionally, over 75% of faculty at both colleges have between nine to 10 years of teaching experience, while 81% at the COE had over 15 years. The personal philosophy and the tacit knowledge gained through experience may help to influence their teaching practices (Dinham & Scott, 2004; Hargreaves, 2004; Windschitl, 2002). In this case, the personal teaching philosophies of the faculty participants appear to be aligned to the institutional goals of student centred learning.

5.3.1.3 EQAMS. The implementation of the EQAMS seems to be both an enabler and a constraint. As COE FP2 explained, although assessments and outcomes have always been a focus for faculty, needing to upload relevant data on the system regularly keeps it at the

forefront of their minds. In the past, she recalled that faculty teaching the same course at different campuses used different approaches as per their preference. But now with the EQAMS, it is being standardised across each discipline in all campuses, providing consistency.

Fullan (2001) describes the use of the EQAMS as a strategy to monitor the progress of government-directed policies. It is therefore viewed by policy makers and educational leaders as a necessary tool for improving the system and providing transparency of the quality of education at their institution. EQAMS as a monitoring system in a rapidly transforming nation seems to be essential to measuring progress, identifying the weak areas and gathering statistics and data for the global rankings that the UAE participates in. As noted in section 1.3.1, the quality of HE is one of the UAE's weaker areas in global rankings, making this an area that policy drivers need to closely monitor.

Therefore, it appears that the EQAMS is a reasonable requirement and essential for maintaining a pulse on progress, providing transparency and accountability to global quality-measuring bodies.

5.3.2 Constraints. Several factors surfaced from both the quantitative and qualitative data collected from faculty and students that appear to be constraints to the quality education sought.

5.3.2.1 Study overload. Students complained of study overload and time constraints at both colleges. Study overload, work pressure and time constraints are characteristics of using a SAL (Chapter 2, Table 2.2). Students used words such as "overwhelming" and "puts lots of stress and pressure on us" to describe their study requirements. COE FG faculty members P3 and P4 emphasised that it was better to provide students with less but relevant content than to have them 'cram' on much of what is in the textbooks or the provided resources. This indicates that faculty is looking for depth instead of breath, which is a characteristic of DAL.

Students related the issue of time constraints specifically to the deadlines for the submission of assignments that occurred at the same time for all their courses at both colleges. It may be possible that the stress and study overloads that students at both colleges experience stem from the intensive course (which is a reasonable requirement of an undergraduate programme) but also from the irregular scheduling of assignment submissions.

Study overload and time constraints can hinder students taking quality time for reflection on their learning. However, some faculty participants at both colleges said that reflection on their course is part of the end of semester programme assessment. As students participate in offering course feedback, they reflect on their lessons and the pedagogic practice. The practice of practical assignments and formative assessments would indicate that reflection is embedded within the curriculum. Therefore, in this context, the study overloads are not a reflection of SAL and appear to be a genuine expression from students that a re-organisation of the deadlines of their assignment submissions is needed.

5.3.2.2 Prescription vs. innovation. This discussion on prescription vs. innovation is based on a few overlapping constraints, namely the limiting influence of accreditation bodies, prescribed curricula, learning outcomes and the EQAMS. These factors interlace and influence the dilemma of finding the right balance between prescriptive or innovative curricula.

Most of the faculty participants at both colleges raised concerns regarding losing flexibility to adapt the curriculum either individually or within the department since obtaining CAA accreditation and since the introduction of the EQAMS. Faculty have had the flexibility to choose sections of the textbook they deem relevant and to supplement with other resources of their choice. They have also had the flexibility to use teaching strategies and activities of their choice. COE FP6 explained, "In the past you could change whatever you want, but now if you want to change anything, it needs to be approved". She added, "Some of the autonomy is taken away and they are controlling it more" (COE FP6).

Furthermore, since the introduction of the EQAMS (section 4.1.4 & 4.3.1.3.2), faculty are required to upload all teaching and grading elements on the electronic system. COE FP1 said, "This system has further locked down any changes" that faculty can make to the curriculum and learning resources once the assessment plan has been submitted. Harvey (2005) contends that quality assurance systems are intended to "serve an improvement function at the student-lecturer interface," but they tend to adhere more to compliance than the critical intention of assuring quality (p. 242).

Curriculum is defined in this study as the overall content of an educational system or course; it is prescriptive and set out by the government or college (Surbhi, 2015; William, 2013). Weston (2017) explains that policy instruments include course content, textbooks, assessments, rubrics and inspections that all interlace and are aligned to one another. A syllabus includes the topics and concepts to be covered in a subject; it is descriptive, set by an exam board and can vary from faculty to faculty (Surbhi, 2015). In some cases, the curriculum and the syllabi may both be prescribed as in the case of the UAE QFE which specifies that the assessment activity should encapsulate the course content (UAE MOHESR, 2012, p. 13; section 2.7) which indicates that the UAE may be using a prescribed curriculum with little room for innovation.

Over the last 15–20 years, there has been much global debate over the use of predetermined learning outcomes being highly structured and accurately defined which stifles originality and creativity. There are two sides of the spectrum to this argument, as Burkard and McKenzie (2017) argue: On one end, there is the freedom for faculty to adapt the curriculum as they see fit, which can be subjective and vary widely from faculty to faculty. On the other, there is a tightly defined and prescribed curriculum with limited or no freedom to adapt anything on it without prior approval. William (2013) explains that a combination of "profound subject knowledge" and "substantial years of teaching experience" is required to teach a

coherent curriculum (p. 36). Therefore, since it is difficult to expect individual educators to come up with their own syllabus, a structured and packaged curriculum seems to be the best option (Weston, 2017; William, 2013). As Weston (2017) argues, predetermined learning outcomes provide the direction of the learning, knowledge, skills and capabilities as well as consistency within disciplines across a country. This type of predetermined curriculum is aligned with the QFE, as mentioned previously (sections 4.1.2 and 4.1.3).

Enders and Fulton (2002) and Geiger (2004), amongst others, contend that over the last two centuries, governments internationally have increasingly taken control of HE to ensure economic development is moving in the right direction. Capano (2011) explains that the changing global context and demand for employable graduates who meet the market labour requirements has led to policy reforms to improve the quality and efficiency of HEIs. This has resulted in the introduction of systematic forms of governance, limiting academics' roles in the universities' strategic objectives and course content and moving away from the principle of 'shared governance' (p. 1624). This shift in governance dates to the 1980's in the UK and the 1990's in the US.

The shift in the UK resulted in the implementation of a series of reforms and reports such as Dearing (1997) which led to the establishment of the UK Quality Assurance Authority (QAA) in 1997 and the centralised coordination of HE quality assessment. Dickson (2001) states that this shift is radical and signifies a form of semi-nationalisation of HEIs while Lucas (2014) claims that the effectiveness of prescriptive quality assurance systems is a highly debated topic in academic literature on HE. Lucas adds that, "… [such systems are] seen to be detrimental to academic autonomy, creativity and authenticity" (2014, p. 216).

Early resistance from academics to the UK QAA: Teaching Quality Assurance (TQA) process (the inspection system), culminated in a letter from a group of academics from the

University of Warwick who had just experienced the review process. They stated that increasingly:

"… we are forced to do things because the QAA says so and threatens us if we don't, not because true teaching quality demands it. Enthusiasm and scholarship are being strangled by bureaucratic monitoring and demands for paper trails" (Harrison et al., 2001, The Guardian Online).

This stimulated a flood of other letters and emails from faculty across the UK HE sector who supported the claims regarding the TQA process. As a consequence, the Chief Executive Officer of the UK QAA resigned and the TQA system was completely revised (Lucas, 2014). The QAA's guidelines and Framework for Academic Programmes continued to be used however.

After about fifteen years of experience with using the Quality Code for HE, it has undergone significant redevelopment in 2018 (Quality Assurance Authority, 2018). The subject benchmark statements are now used as reference points and provide general guidance clarifying that "… [they] are not intended to represent a national curriculum or to prescribe set approaches. Instead they allow for flexibility and innovation" (UK Quality Code for HE, 2018, Subject Benchmark Statements, para. 2). The UK model being one of the earlier ones may be a good example of responding to needed changes to continuously improve the system to achieve quality education. The QAA Code puts a great deal of emphasis on clearly stated and published learning outcomes; and also on assessment procedures which are transparent and well-aligned; but does not anywhere attempt to prescribe teaching and learning methods and activities. As Biggs and Tang (2011) claim, when constructive alignment is maintained the

learning activities can be adapted to suit the students and context, thereby allowing room for innovation.

The US model for the public universities consists of close monitoring of student performance and results by public policy institutions and stakeholders (Capano, 2011). Therefore, it may not be surprising that the UAE EQF and CAA in pursuing the goals of UAE Vision 2021 is closely monitoring the quality of HE, through the introduction of monitoring systems such as the EQAMS

Allais (2007) and Hussey and Smith (2008) among others warn that though NQFs can serve as guideposts, learning outcomes can also be too prescriptive without consideration of different contexts. It may also be prudent to learn from the failure of South Africa's NQF which was introduced in 1995. South Africa's NQF is a single qualifications framework used for quality assurance throughout the education system (South African Quality Authority, 2014). A review of this NQF six years later showed that it was not producing the anticipated results and twelve years later, Chrisholm (2004) reports that the framework is deadlocked in unresolved policy reviews.

South Africa's NQF much like the UAE QFE was a highly defined and prescribed framework based on learning outcomes (competencies) that were to be achieved for each level of the education system (Allais, 2007). Allais critiques the education programs that were designed at the national levels as being "… taught, assessed and evaluated against the outcomes that had been nationally specified" (p. 523). Hussey and Smith (2008) argue that learning outcomes are most useful when they are used in course teaching and if they are used flexibly, while learning outcomes that are used as performance indicators can be a misuse. They make the critique that learning outcomes used to qualify degree programs "attempts to make them precise statements for exactly specifying assessment tasks or for audit… [which when]

included in a whole programme of study leading to a qualification such as a degree, constitutes a misuse" (p.114).

As Woodland (2014) notes, the challenge is finding the balance to define academic standards precisely, so that they are clear to faculty and students, but at the same time allow room for tacit knowledge and professional judgement. 81% of faculty members at the COE have over fifteen years of teaching experience, 10–15 of which have been at this college, while 75% of faculty at the FC have close to 10 years of teaching experience (section 3.2.3.). Sternberg and Hovarth (1999) claim there are two pedagogies at play in the classroom, the prescribed curriculum to deliver and the tacit knowledge of the educator (p. 196). Chugh (2015) defines tacit knowledge as ideas and skills that have been gained through experience and practice in a specific context which is difficult to be codified. Chugh's study investigated four Australian universities on the transfer of tacit knowledge so that when experienced personnel leave an organisation, the tacit knowledge is not completely lost. Chugh (2015) recommends the sharing of tacit knowledge for the betterment of institutions. Tacit knowledge gained through experience, particularly in the context of the UAE, can be valuable and it would be prudent to take advantage of it.

Finland's success in the high global educational rankings is attributed to raising the quality of educators and allowing innovation in curriculum development (Darling-Hammond, 2009; Sahlberg, 2006). Restricting creativity and innovation to adapt content and adhering strictly to the prescriptive curriculum may compromise the expected quality of the student-centred constructivist pedagogy pursued.

5.3.2.3 Faculty and student feedback systems. The argument made above ties in with the findings of SELE, FELE and 'closing the loop', which are promoted in the documents as avenues to receive feedback from faculty and students to enable continued improvement to the curriculum.

As the findings indicate, COE FP1, P2, P3, P4 and P6 explained that once the assessment plans are submitted, the same plan needs to be implemented and even minor changes will involve discussions at various levels; in some cases, no feedback is received at all. COE FP1 and FGP4 said that most faculty don't bring up suggestions for changes over the course of the year once the plan is submitted because of the complex process it involves.

This possibly indicates a weakness in receiving or responding to faculty feedback from institutional and policy leaders, therefore leaving suggestions for improvements stagnating. It is possible that institutional management may be grappling to ensure adherence to the prescribed curriculum mandates stemming from requirements of accreditation policies and learning outcomes. It is also possible that if the suggested changes from faculty members seem to be in conflict or not compliant with these requirements, the suggestions from faculty are left unaddressed. Perhaps management or curriculum committees communicating legitimate reasons for not being able to apply suggested changes could allay faculty's fears and hesitations when it comes to contributing constructive feedback. As COE FP1 said, there was "timidity and sensitivity" when the new dean appointment was not explained.

Another obstacle to effectively using 'closing the loop' is the time constraint for quality meetings between faculty members within the same departments (COE faculty FG Ps). Faculty at the COE explained that 'closing the loop' meetings occur at the same time as examination grading and the time-consuming process of updating the EQAMS. Therefore, if there is a 'closing the loop' meeting, it appears to happen haphazardly. However, this lack of meetings appears to be a recent development. Although, as promoted in the documents, a good structure is in place and has been followed in past years, recent work overload and bureaucracy seem to be impediments.

An additional factor that emerged from the qualitative findings is possibly the lack of effectiveness of the SELE as a student feedback tool to enable continued improvement. As the

document analysis (section 4.1.2.3) revealed, SELE and FELE are additional avenues to source student and faculty feedback. 33% of FC SPs, namely SP2, 4 and FGP3 and 4, mentioned that two faculty members who each teach two different subjects do not have adequate teaching skills, and their lessons were incomprehensible and boring. Students take 13 required courses in FC and it is possible that some faculty members, though highly qualified, lack teaching experience or certification, as FC FP3 also mentioned. It is also possible that, as discussed in the literature review (section 2.4.3), not all disciplines can apply all aspects of DAL. Therefore, these faculty members could have been teaching disciplines that required other learning and teaching approaches.

However, there is an avenue for students to provide feedback each semester on the teaching approaches of faculty: SELE. If action was taken based on this feedback, then the situation would have been resolved. If this avenue was effective, then student participants may not have needed to raise this concern in the qualitative inquiry. Thus, this could possibly indicate a weakness in the effectiveness of this feedback system.

5.3.2.4 Work overload for faculty. Work overload is a characteristic of the SAL (Chapter 2, Table 2.2). The additional work of updating the EQAMS regularly has increased the faculty's already full workloads, as claimed by FC FP2, FP3, FP4 and COE FP1, FP2 and FP3 and FFGPs. FC FP3 said that "the only option faculty is left with would be to work as hard but do less with more students." The time constraint therefore seems to be compromising the quality of 'closing the loop' meetings, providing feedback and grading assignments. The example given above of assignments being graded within five minutes of submission is an indication of this.

Besides the time-consuming job of uploading material onto the EQMAS, not all faculty are technically literate and, even though help is on hand, it appears to be time-consuming additionally to learn how to use the technology. As Rizzo, House and Litzman (1970) explain,

employees being required to do too many tasks during each work day or tasks that are beyond their capabilities results in work overload.

As discussed in the literature review (section 2.5), besides fatigue and exhaustion, faculty motivation levels also decrease following a rapid pace of change, increased workloads and pressure from the government or employers' directives (Dinham & Scott, 2004). Perhaps alternate methods should be explored by policy makers to meet this need of updating the EQAMS.

The work overload indicates that faculty is struggling to keep up with the SCP. If this situation is not resolved, the quality of education could be compromised.

5.3.2.5 Large class sizes. One of the constraints that stems from the large class sizes at the FC, as FC FP3 and FP4 claim, is the difficulty to provide quality attention and feedback to students. FC SFGPs and 50% of FC SPs claimed that personalised attention in class and consultations after class were lacking.

However, students progressing from compulsory education to tertiary education are expected to take more responsibility for their own learning process. One of the required competencies of the QFE learning outcomes for the undergraduate programme is "autonomy and responsibility" (National Qualifications Authority, 2012, p. 29). FC student participants did acknowledge that they needed to take responsibility for their own learning; this is likely to be part of their learning curve.

The large class sizes have however caused crowding in the classrooms, which poses an obstacle for group work seating arrangements (FC FP3 and FP4). Policy documents and past research studies have predicted that rising student numbers in the federal universities may compromise quality (Fox, 2007; MOHESR, 2007).

5.3.2.6 Mixed-ability range of students in FC. Students transferring from the public schools (80%) have a lower proficiency in English, while the students from the private schools

(20%) are fluent in English (FC FP3, FC FP4 and FC FFGPs and FC SFGPs). This difference poses a challenge for faculty in each classroom to meet the needs of both types of students and ensure all students understand the material and those who are ahead are not bored. The difficulty lies with students' English comprehension levels ranging from very low to fluent. This issue may cause faculty to temper the teaching level to meet a mid-point which can cause neither end of the spectrum to access the curriculum fully.

5.3.2.7 Internships at public schools. Sowa and De La Vega (2012) mention a unique internship collaboration between their students in teacher training and a public preschool centre. This seems to be an uncommon occurrence, as all COE student FGPs said that they would have liked to have had an opportunity to intern at a public school. Currently, the internships are all held at private schools. COE SFGPs expressed the opinion that they would like to teach national children at the public schools as a means of contributing to their country's development. As discussed in the literature review (section 2.3), one of the goals of the National Agenda (UAE Vision 2021, 2014) is indeed to train Emiratis to take up teacher positions in public schools. Students graduating from the COE, a rigorous student-centred teacher education programme, would seem to be ideal candidates to fill these roles. Therefore, it is important that some of the internship programme be practised at public schools.

COE FP6 mentioned that one of the challenges recent graduates encounter in these public-school systems is the lack of liberty to practise the student-centred pedagogy they have gained due to restricting regulations and expected conformities from school administrators. Sowa and De La Vega (2012) raised similar concerns regarding their experience with mentor teachers who were sometimes reluctant to adapt their official curriculum to allow these graduate teachers to incorporate new ideas.

This may indicate that unless some provision is made for interns to practise at the public schools and to have the freedom to exercise their newly gained SCP strategies, the progress in HOTS aimed for in compulsory education can be hampered.

5.4 Research Question 4

Have other factors in compulsory education contributed towards the university students' approaches to learning?

The findings from the qualitative inquiry revealed two main and consistent factors stemming from the pedagogic practice in compulsory education that present obstacles to the implementation of SCP in HE. These are the lack of college readiness and a lack of English language proficiency, the medium of instruction in HE in the UAE.

5.4.1 College readiness. The qualitative data revealed that students are hampered by a lack of college readiness. Most students transition from the public schools where the pedagogic approach has been teacher-centred (with an emphasis on rote learning), following the Egyptian model, as discussed in the literature review (section 2.3). Farah (2012) and Ridge (2010) report that TCP has been predominant in public schools. They add that learning and teaching is based on TCP and the national curriculum does not allow for teachers to adapt lessons to integrate active learning techniques. Ridge, Kippels and Farah (2017) explain:

"In the UAE, examinations have retained a heavy focus on testing textbook content in which students essentially need to memorise, thus discouraging teachers from embracing new student-centered approaches to teaching" (p. 3).

With the need to exercise critical analysis and apply learning in other contexts, formative assessment grading criteria were found to be particularly challenging for students at

the FC who are just transitioning from the public-school system. The Ministry of Education Strategy 2010–2020, launched in 2010, states that it "[aims to achieve] a score of 10/10 in all its initiatives" (UAE MOE, 2010, p. 1). The first strategic objective is to "ensure [that a] high quality curriculum is in place so that students are best prepared for the knowledge economy" (p. 2). The way to achieve this is to "develop curricula and align with Higher Education and [the] Job Market Requirements" (UAE MOE, 2010, p.3). However, when the primary data for this study was collected in 2017-18, given that these students would have completed high school in 2014 or 2015, some change would have been expected. 65% of the FC student participants in the qualitative inquiry consistently claimed that memorisation, being provided notes to memorise and sample test papers to work through (examination questions were sourced from these sample papers, according to FC SP2 and 3 and FC SFGP3), were the norm at the public schools they attended.

However, today, nine years after the Ministry of Education Strategy 2010–2020 was initiated, it appears from the findings at this university that this 10-year goal may have been unrealistic. It may be that the process of reaching the targets is slower; as Dede (2006) states, the transition to higher-order thinking is an evolutionary process rather than a revolutionary one. This, Dede explains, is especially the case when the educational system has been focused on rote learning for a long time.

Student participants in their final year of the preparatory programme all said that though it was a struggle initially to apply the DAL in their learning tasks of writing out assignments, entering in group discussions actively or confidence to respond to questions in class, they yet preferred this type of learning. In this context, the lack of college readiness does indicate a barrier to accessing DAL.

5.4.2 Transitioning to an English-medium university. Mauranen and Raita (2009) and Gural and Smokotin (2014) amongst others describe how the effects of globalisation,

economic inter-dependence, the internet and social networking has placed English as the global lingua franca. (EGLA). Therefore, to compete effectively in the knowledge economies and engage in the learning tasks of entrepreneurship, innovation and development, the learning task of research takes a prominent role. As discussed earlier (section 5.1.1.5) a lack of proficiency in the English language can limit the extent and quality of research as 54% of websites are in the English language while only 0.6% of content on the web are in Arabic (W3Tech). Therefore, proficiency in the English language enables using DAL strategies in an EMI university and otherwise not.

FC FP3, P4, FC FGP 1 and 2 said that it is not that students are incapable of achieving HOTS, it is just the language barrier that stands in their way. FC SP4 stated that she could only say "yes," "no" and a few basic terms in English upon graduation from high school. Only 20% of students qualified in 2017 to directly enter the undergraduate program while 80% entered the ABP program to raise English proficiency to meet university level work (University X Faculty Handbook 2017–2018, p. 10).

The introduction of science and technical subjects in English in compulsory education and the initiation of the EmSAT (UAE MOE 2017c) may be measures that may remedy this lack in the future.

5.5 Research Question 5

Is there a difference in the perception of change between students and faculty in the two colleges under study and are there any differences between the two colleges?

The findings from both the quantitative and qualitative data reveal that both students and faculty have similar perceptions of the pedagogic approaches within both colleges in relevance to the college.

The responses from both students and faculty were overwhelmingly similar for each of the research questions to the semi-structured and FGDs regarding the use of DAL and SAL.

The data implies that faculty practised constructivist pedagogy in their teaching approaches and helped students to access it. Both faculty and students at the FC said that students struggled with adapting to the change of using DAL transitioning from a SAL background. Both faculty and students at COE concurred that though it was a struggle initially to apply DAL, the practice-based curriculum at COE facilitates the use of DAL strategies more than SAL.

All participants from both colleges also assert that SAL in compulsory education limits the accessing of DAL readily in HE. They all also assert that the lack of competency for EMI in HE is a huge obstacle for many in accessing DAL as it hinders clear writing and expression of thought, both critical and reflective, essential for the assignment and assessment requirements. This lack also inhibits extended research in their studies.

The data from the quantitative inquiry for faculty indicated that all faculty's personal teaching philosophies and teaching approaches were constructivist and student-centred. However, the student survey data was divergent for the variables of "unrelated memorisation" and "synthesise and apply". This divergence when compared with the qualitative data led to new revelations as Tashakkori and Teddlie (2003) argue and as discussed in Chapter 3 (section 3.1.3). The divergence of data was discussed and justified earlier in this chapter (section 5.1).

One factor that faculty at the FC did not mention is the huge workload and pressure that students said they experience at the FC as a constraint. This was likely to be because faculty at the FC may have felt that the workload is justified as an expectation of a rigorous undergraduate programme, whilst the students who lacked college readiness may have consequently found the programme even more challenging. This question was not specifically raised in the interviews but surfaced as a constraint amongst the students. Some faculty at COE did concur that the course was demanding and there were many criteria to be met by the students, and therefore the workload is high. However, none of the faculty attested that the high workload was due to most of the assignment requirements falling at the same time, so perhaps they were

not aware that this was an issue. As almost all students complained of the workload, students would have raised this issue in their SELE. This again adds to the question of the effectiveness of the feedback system.

The data from the document analysis were examined to identify whether policies and the promotion of the documents corresponded to the practice on the ground. There were some deviations (that are discussed in this chapter in sections 5.1, 5.2 and 5.3). However, the patterns of similarities in the responses from the four sets of participants to each of the research questions lends weight to the conclusions drawn in this discussion chapter.

5.6 Other Emerging Themes

5.6.1 Top-down implementation process. All faculty participants at both colleges mentioned that there are frequent changes, often driven by the national or university leadership. The document analysis showed that policies are constructed at the national level, as discussed in Chapter 1 (section 1.2.2).

Matland (1995) posits that top-down approaches led by centralised bodies are "generalisable policy advice" based on policy goals and intended outcomes, as well as likely to be "prescriptive advice" (p. 147). As these approaches are generalisable, adaptations may be essential for each context. Furthermore, Reynolds and Saunders' (1987) implementation staircase theory suggests that the trajectory may not be clear and perceptions for implementation can differ at both levels. This would necessitate deliberations at the institutional level between faculty who implement policies and administration who ensure the implementation. As discussed earlier (section 5.1.3.2), the effectiveness of feedback is questionable, as seen in the case of 'closing the loop'.

One of the building blocks of a successful learning organisation, according to Garvin, Edmondson and Gino (2008), is a supportive learning environment wherein employees feel secure in providing opposing ideas and are not afraid to share minority viewpoints or make

mistakes. Garvin et al. also state, "Employees should be encouraged to take risks and explore the untested and unknown" (2008, p. 3).

It appears that this practice may be lacking in this university, as COE FP1 said that when the change of deans was announced with no explanations provided, "faculty just went in their rooms and shut their doors," meaning that no one dared to ask any questions or voice any opinions.

The leaders of the learning organisation, the university under study, may need to negotiate the contextualising of these changes to suit their pedagogic context by encouraging a flow of feedback and communication between faculty and administrators. This factor is also linked to the point on prescription vs. innovation (section 5.3.2.2) and could influence achieving quality education.

5.6.2 Western models and culture. The literature review identified that Western models of education and curriculum have been imported in some of the federal universities, as in the case of the university under study.

A small national Emirati population (11% of the total 9,456,628 population) lives amidst a large and culturally diverse foreign population (Abu Dhabi 2, 2016). The foreign population or expatriates reside in the UAE solely for employment purposes and are only able to maintain three-year renewable residency visas despite living in the UAE even a lifetime (Government.ae, 2019). Therefore, it becomes imperative for the small national Emirati population of the country to protect and promote its unique Emirati culture and heritage.

Additionally, international teaching standards require that curriculum is culturally empathic to student needs in culturally diverse parts of the world (Crabtree, 2010). The textbooks and journals used are written for a western audience and a western context. Data from the qualitative inquiry revealed that faculty participants at both colleges found it imperative to adapt teaching materials and content to the local context. However, this

contextualizing of the text is done on an individual level. FC FFGPs and COE FFGPs said faculty members choose how to adapt and translate the western models into the local context, as there is no prescriptive content within the curriculum that provides such contextualisation.

The contextualising of the western content may not translate evenly throughout the college when done on an individual basis. As this is a teacher preparation college and graduates will be dealing with children and parents daily in their future professions, it may be essential for them to know how to navigate questions as this one below:

"Actually, we are raised in very strict homes as we have to respect all the adults and we have to obey them. But you know I find that the children have the right to say 'no'. This is against the law or values that we have. This is very rare to see in our culture. We have to change this in our culture so I understand the children's rights" (COE SP3).

The above question may imply that children are not allowed to think for themselves or to think critically, and as graduate teachers equipped to teach in ways that should stimulate critical thinking, this may create conflicting patterns of applying the constructivist pedagogy. Questions such as these may also pose a dilemma for faculty teaching these courses to provide culturally correct responses.

Additionally, foreign faculty attempting to contextualise the content seem to have an influence on the students, as COE SP3 noted, "When we have the foreign teachers, who respect us and our religion and our culture, for me this is everything. This helps me to follow the right path of education". This could indicate that student motivation for their studies is raised when such respect and consideration is shown. In the argument raised in section 2.4.3 regarding other factors that may influence learning and teaching with the D/SAL model, motivation was found

to be one such factor. Respect for the national culture appears to have an influence on student motivation.

5.6.3 Women in a patriarchal society. Female empowerment and the patriarchal society in the UAE is not a focus of this study; however, related emerging factors are worthy of discussion, particularly as the study was undertaken in a female institution. The contextual study of the UAE in section 1.2.3 revealed that although the UAE has its origins in a patriarchal society, the leadership has encouraged education for women.

Alibeli (2014) notes that today, Emirati women continue to live in a patriarchal and culturally conservative society in which women take a subordinate and submissive role in their families and communities. COE FP4, FP1 and FP6 commented that this cultural background hinders the female students in exercising their critical thinking skills, which seemed to emerge more as they worked in groups. As noted above in section 5.2.2, culturally, children and women learn to be submissive and do not freely voice their opinions. Transitioning from this type of a cultural background and a rote-learning public school system to a learning environment that promotes learning tasks such as critical thinking, questioning and analysing is likely to be a big change. Therefore, when working in groups, the group dynamics may stimulate the DAL skills more than when working alone. Collaborative learning is used consistently in both colleges as students first work in groups to discuss and then move on to work individually on their assignments.

COE FP1 noted that this may also cause them to refrain from freely voicing their opinions in future mixed gender workplaces. This implies that exercising the HOTS they gained may be inhibited in such workplaces. Most students and their families prefer gender-segregated workplaces and many who graduate may not pursue a career path at all (COE FP2, COE FP1, COE FP6). Often husbands or families are financially stable enough that the women do not need to work to support their family. Thus, a career becomes secondary to caring for

children and households (Pennington, 2016). However, according to Pennington, women noted they would work if they had flexible working hours and nurseries for their children at the workplace (2016).

COE FP6 and FP4 commented that female students today have more autonomy in choosing the course for their major, as opposed to it being dictated for them by their fathers and brothers as in the past. This may suggest that though traditionally women take on subordinate and submissive roles, society is changing and women are experiencing more autonomy.

Students' opinion of UAE Vision 2021 was overwhelmingly positive, which indicates that they do aspire to serve the country and contribute to its development. This is also reflected in their motivation, drive and dedication to complete a long and arduous undergraduate journey, which for most is six years. Overcoming the language barrier and a rote learning background to transition to a student-centred pedagogy that promotes HOT is a highly demanding expectation. But these women are meeting these challenges and graduating feeling prepared to go into the workplace and use a student-centred pedagogy in their future teaching practices (COE SFGPs). COE FP1 and FP6 and FC FP3 and FC FP4 all said that most of the students are very hardworking, motivated and determined to earn their degrees.

This same drive and dedication are reflected in the many women leaders in the UAE as AlMuttawa (2016) and Alibeli (2014) report. Statistics reveal that nine out of 31 seats in the cabinet are held by women, 20% of the Federal National Council members are women, there are six women ambassadors internationally and the Chairperson / Speaker of the Federal National Council is a woman (Nasir & Zakaria, 2018).

As leaders, women carry heavy responsibilities but seem to manage both family and careers within this paradoxical blend of a patriarchal society and a nation that needs women to fill leadership positions (AlMuttawa, 2016).

5.7 Is constructivist pedagogy practiced at the two colleges under study?

To summarise and to response to the main research question of whether HOT is promoted at University X, the findings reveal that faculty do believe in and practise constructivist pedagogy to promote HOT in students. Applying SCP strategies appears to be a preferred choice for the students as well, as students at both colleges scored higher on DAL than on SAL in the survey findings. Faculty similarly scored higher on using SCP than TCP. Student participants at the COE are also enthusiastic about embarking on their teaching careers and applying the constructivist pedagogy in their teaching.

However, considering some constraining factors that surfaced, this case study concludes that although SCP is largely being practised at both colleges, there are constraints that hinder its full implementation, especially at the FC.

Chapter 6: Implications and Conclusion

6.1 Contribution to Policy and Practice

This study has implications for practice at the two colleges of the federal university under study. However, as discussed in Chapter 3 (section 3.1.3) some of the implications may be generalisable to the federal universities. The implications for theory stemming from the results of this study within the UAE context generated an alternate model, discussed below in section 6.2 which may add to the critique of the deep/surface approaches to learning model. Although several factors worthy of consideration surfaced in this study, the most significant ones are addressed below as contributions to policy and practice.

6.1.1 College readiness. Student motivation for personal achievement and contribution to the development of the country is markedly high, as the quantitative and qualitative findings revealed. The biggest challenge continues to be a lack of college readiness for a rigorous student-centred HE curriculum. The language barrier and the teacher-centred pedagogic approach in compulsory education are two factors that contribute to the lack of college readiness (sections 5.4). It may be questionable whether the UAE MOE is fully aware of the depth to which these two factors influence student learning in the undergraduate programme and the direct domino effect they have on achieving HOT as envisioned by UAE Vision 2021.

As Reynolds and Saunders (1987, p. 44) assert, what is happening at the grassroots level may not be clear to policy makers. FC FP3 among others asserted that none of the faculty members at the FC or the ABP would have consented to the abolition of the ABP in 2019 without the assurance that college readiness of entry students in the following year would be at an acceptable level. The findings from both students and faculty (section, 5.4) identify these two areas as sorely debilitating for students at the FC. This same issue surfaced as early as

2004, when the first CEPA results revealed that slightly more than 4% of students qualified for college readiness (Swan, 2013b).

As EMI is a priority in HE, unless critical progress is achieved in compulsory education, students accessing DAL effectively may be hindered until the situation is resolved.

Future research may indicate the effectiveness of the Emirates Standardised Test (EmSat), the recently established program to strengthen student skills throughout the levels of compulsory education (UAE MOE, 2017c; Pennington, 2017a).

6.1.2 Prescription vs. innovation. Although accreditation criteria, learning outcomes and EQAMS are valuable tools for providing clear guideposts, if they become too prescriptive they may not lead to the anticipated quality education sought (section 5.3.2.2). NQFs provide guidance and standards but the meaning can be lost within the numerous layers of specifications of learning outcomes. More importantly, the possibility of misinterpretation occurs because meaning can be subjective to the context, culture or historical backgrounds. Therefore, the emphasis should not be placed on the term itself but rather on the meaning of it within the context it is applied in. A suggestion would be to innovate and not replicate systems that may not entirely suit this context. Accessing the tacit knowledge and professional judgement of experienced faculty can provide a viable balance (section 5.3).

Looking ahead and learning from the lessons of the UK QAA and the failure of South Africa's NQF and Finland's success, the implication for the UAE educational system may be significant a few years from now. As House (1991) claims, if emergent issues in research studies are not attended to, they may fester and become larger problems after the research phase. This implication of finding the balance between adhering strictly to prescriptive ways and allowing creativity and innovation may be critical for progress in achieving the goals for a sustainable knowledge economy as envisioned in UAE Vision 2021.

6.1.3 Learning organisation culture. Allowing room for differing voices from faculty members and drawing on their teaching expertise and experience may be lacking. Although there appears to be regular assessment planning and 'closing the loop' meetings, they are accompanied by a culture in which opposing viewpoints do not appear to be encouraged. This was found in comments made by FC FP3, P4, FC FFGPs, COE FP1, FP2, FP3 and COE FFGPs (section 5.6.1).

Matland (1995) suggests that top-down polices are generalised and Reynolds and Saunders (1987) argue that policy directives may be unclear at the grass-roots levels. It seems more communication is required and differing voices should be encouraged. As HOTS are promoted and critical thinking is encouraged as a prioritised outcome of this university, a streamlined system of communication may be essential to allow for constructive feedback to be voiced and listened to.

6.1.4 The effectiveness of the feedback systems. These feedback systems, as part of an outcomes-based model, were promoted in the document analysis as enablers of continued improvements to the student-centred pedagogy (section 5.3). Evidence from the qualitative data pointed to time-constraints experienced by faculty to holding productive 'closing the loop' meetings, with faculty suggestions for bigger changes being left to stagnate. The implication here ties in with earlier discussion on organisational culture. If faculty feels constrained in offering constructive feedback, a continued change to the pedagogic approach may not be achieved.

In the case of the SELE, there does seem to be an issue at the FC (section 5.3). There may or may not have been legitimate reasons for this, such as differing disciplines needing different learning and teaching approaches. However, it seems that students are not receiving responses to their concerns raised in the SELE. This again may imply the need for better

communication between all persons involved in the implementation chain, right down to the grassroots—the students.

6.2 Contribution to Theory

Several factors raised concerns regarding the reliability of the D/SAL model that was used as a framework for this study. The researcher chose to apply this model with the awareness of its limitations (section 2.4.3). The findings of this study have highlighted and confirmed several of these limitations. The primary data revealed significant factors that were incongruent to this model. ASSIST had clear delineations between the deep and surface approaches with extensive questions (section 3.3.1). However, the findings evidenced that some of the factors were not suitable for the UAE context and culture. If a single method of quantitative or qualitative inquiry had been undertaken, this difference may not have been found but in triangulating the data obtained from the multiple data sets, divergent factors surfaced. On further analysis, these divergent factors appeared to be justifiable reasons leading to new understandings and views (sections 5.1 and 5.3).

6.2.1 Dissecting the D/SAL paradigm for the UAE context. The key attributes of the SAL (section 2.4, Table 2.2) and in Chapter 3, ASSIST (section 3.3.1.1; Figures 3.2 and 3.3), does not appear to suit the UAE HE context completely. Some divergent factors surfaced in the triangulation of the multiple data sets (section 4.1.2). The discussion (section 5.1) indicates that these deviations of memorisation, lack of purpose, fear of failure, lack of research and student work overload are not outcomes of SAL within this context. Internships and practical experiences at related workplaces enhanced the transfer and synthesis of knowledge in students at COE.

Based on these deviations, an alternate model is proposed for the UAE HE context and particularly for the colleges under study. Figure 6.1 illustrates this alternate model "The UAE

Constructivist Approach to Learning Model". The rational for the placement of each of the deviating constructs in the model is explained below.

The UAE Constructivist Approach to Learning Model										
Student-centred pedagogy promotes the deep approach to learning	Active participation	Seeking meaning	Asking questions	Group Work	Research	Anayse & Evalute	Apply - Internships	Synthesis - new information	Formative assessments	Feedback systems - 'Closing the Loop'; SELE & FELE
The UAE Constructivist Approach to Learning Model										
Teacher-centred pedagogy promotes the surface approach to learning	Memorisation	Memorise unrelated bits of information	Syllabus bound - prescriptive vs innovation	Lecture notes are provided by faculty	Fear of failure	Lack of purpose	Student study overload	Faculty work overload	Summative assessments - multiple choice & short answer questions	College Readiness - accessing EMI & SCP readily
Other Influencing factors within the UAE context	Top-down policies - catalyst for rapid change	Learning organisation culture - need for bottom up feedback	Patriarchal culture may inhibit critical thinking in females	Western models need to be adapted to suit local context	Women Empowerment	Need for women to be equal contributors to development				
Goals of UAE Vision 2021 for educational innovation	Student-centered pedagogy	Higher Order Thinking Skills for the knowledge economy	Research	Critical thinking	Creativity	Innovation	Emiratisation : Graduates to lead the knowledge economy	Gender balance and women empowerment	Preserve and nurture UAE culture, religion and identity	
	Indicates current practice that can continue and which promotes SCP for this context					Indicates grey area - current practice that can change to access SCP readily in this context				

Figure 6. 1 The UAE Constructivist Approach to Learning Model

FC SPs claimed that they first sought to understand and then commit to memory as a way of deepening their understanding. COE FP1 and FP4 and FP6 said that the students are able to access critical thinking skills. Within this context of the language barrier and background in SAL, some memorisation of the content appears to be essential. Furthermore, the interplay of memorisation and understanding used in the learning of the Holy Quran; the paradox of the 'Chinese learner', and the cognitive processes involved in reading and understanding text as Guthrie et al., (2012) outline is a complex process (section 5.1). The simple delineation of memorising as a SAL attribute and understanding as a DAL attribute on

the opposite ends of the continuum does not seem to apply. Therefore, this variable of memorising with understanding falls in the DAL area.

Feeling a lack of purpose appears to stem from lack of interest in the course topics and secondly two of the questions within the instrument for this variable did not apply. Students in this context aspire to succeed to get a reputable and high salaried job for reasons of financial security as a female in a patriarchal society, family honour, being first generation females to enter HE and to support the development of the country as per UAE Vision 2021. This also gives them added motivation to achieve their degree (Guthrie et al., 2012). This variable therefore falls in a grey area.

Fear of failure appeared to stem from the consequences of failing a semester leading to the extension of their already long undergraduate course and the language barrier. This variable therefore appears to belong in the grey area. Syllabus-bound, another attribute of the SAL appears to suit the grey area as all faculty confirmed that they were bound to teach the curriculum and to use the prescribed textbook but could choose sections they deemed relevant and had some flexibility to supplement with other learning resources. However, all faculty also claimed that since the approval of the CAA accreditation and the introduction of the EQAMS in 2016, these freedoms are being limited as the curriculum is being standardised for disciplines across the campuses.

It was also found that students rarely or never conduct research beyond the provided resources. This issue appeared again to stem from the language barrier and the difficulty of accessing information on the web in English (section 5.4). Extended research should continue as an attribute of DAL, but flexibility for adapting curricula may suit the grey area as it currently falls between SAL and DAL.

When the findings for student study / work overload were analysed, this factor did not appear to be an attribute of TCP in this context; rather, it stemmed from assignments for all subjects being due at the same time, so again this would fall in a grey area.

The attributes for faculty applying DAL appeared to be met, as the findings were consistent. However, there were two deviating factors that arose. First, the multiple-choice and short answer questions which Web (1977) and Entwistle and Ramsden (2015) argue are indications of a surface approach. However, as Brookhart (2010) claims, the findings also found that multiple-choice questions were a small section of the assessments and were used to evaluate 'understanding and analysis', so this could potentially remain under DAL.

The work overload experienced by faculty, as discussed earlier (section 5.3.1), appeared to stem at the FC from the large class sizes and a mixed-ability range of students. The implementation of the EQAMS had added an increased workload at both colleges and this takes away from faculty's teaching responsibilities. This could legitimately remain under SAL.

These factors discussed above indicate that an alternate model is essential for the UAE context of the federal universities as illustrated in Figure 6.1 above. The deviant factors are probably generalisable to other federal universities as they stem from CAA/ QFE criteria and cultural and contextual background.

6.3 Recommendations

There are many enabling factors, at both the FC and the COE, (section 5.1.3.1), that promote DAL to generate HOTS. However, the following recommendations are made in light of the constraints that surfaced from the findings of this study.

6.3.1 Prescriptive curricula, organisational culture and feedback. The extensive discussion on this subject (section 5.1.3.2) evoked factors for critical thought and review at the level of policy makers. Consideration of these factors may mitigate serious issues in the decline of the quality of education in the future in the UAE. It is recommended that faculty be given

sufficient time for quality discussions to justify the 'closing the loop' practice. Regular consultations with and feedback from faculty members directly involved in the pedagogic processes are recommended for any learning organisation. This can provide a balance to the prescribed curriculum and allow for tacit knowledge and professional judgment to be accessed. Similarly, it is also recommended that students receive feedback on their evaluations expressed in the SELEs, to encourage communication and perhaps stimulate improvements to the pedagogic system.

      6.3.2 UAE Model of the SCP promoting D/SAL. A recommendation is to use the alternate model (Figure 6.1) suggested in this study – the UAE Constructivist Approach to Learning Model instead of the comparison between the rote-learning and memorisation system versus the understanding and critical thinking system. The alternate model through this study indicates that the two are not on the opposite ends of the continuum. The findings also revealed that memorising, understanding and critical thinking can interplay in the complex process of learning and be incorporated into the learning tasks. As referenced in the study, there appears to be a common misconception that the two are on the opposite ends of the continuum and that one is completely right while the other is not. Other factors such as discipline variation, motivation, faculty's teaching philosophy, teaching certification and experience, work overload and dissatisfaction can be deviating factors that influence the D/SAL model (sections 2.4 and 2.5).

      6.3.3 Faculty work overload. Faculty at both colleges described work overloads causing time constraints, which appear to negatively affect the provision of quality pedagogy (section 5.1.3). A recommendation is to transfer this statistical workload of transferring data on to the electronic system to assistants, allowing faculty to focus on their primary role of teaching and mentoring students.

6.3.4 Student work overload. Although the undergraduate programme is a challenging and demanding one, there seems to be a coordination error, as all assignments occur at the same time instead of being staggered throughout the year. A reconsideration of this schedule is suggested.

6.3.5 Mixed-ability range of students at FC. Both FC FPs and FC SPs who transitioned from the English-speaking private schools claimed that the mixed range of English language capabilities within the same class presented a barrier. These students were well ahead of the others in their comprehension, thus the need to wait for those with lower English language capabilities to get to par was deemed to be boring and a waste of time. Perhaps the students with a higher English proficiency could be streamed together.

6.3.6 English language barrier. One recommendation is to have Arabic-English translators available in each class to ensure that students understand the lessons. This could be a possible solution until English language skills at compulsory education meet the standard for HE.

6.3.7 Western models. As each faculty adapts content either themselves or within a department, a recommendation would be to start a repository of cultural adaptions for each syllabus that faculty can add to. A further suggestion is to have a local exemplar who could be role modelled or threaded throughout the curriculum. One suggestion for the role model would be the well-loved and respected leader and founder of the UAE, Sheikh Zayed Bin Sultan Al Nahyan, known as the Father of the Nation. Highlighting his skills of innovation, creativity, critical thinking, decision-making and problem solving could boost student motivation to aspire, to excel and contribute to the development of the nation.

6.4 Strengths of the Study

The chosen mixed-methods research design strengthened the study, as it allowed for the case study to be viewed from the lenses of both quantitative and qualitative inquiries. The constant changes experienced in the federal universities may not have revealed hidden or emerging factors if a singular positivist approach was taken. The evidence surfacing from the multiple sources strengthened the case study (Hartley, 2004; Yin, 2009).

A comparative case study between two colleges allowed the researcher to evaluate whether similar pedagogic approaches were applied. The comparison between faculty and students within each college resulted in a balanced exploration of the learning and teaching approaches from the perspectives of both faculty and students.

Quality, rigour, reliability and validity were accounted for in this case study because of the choice of research design of the mixed method approach, the wide and varied methods used, choice of samples and the questions. The study, unlike most of the past research studies which found that the surface approach is dominant in UAE federal universities, found varied factors that illuminated the current pedagogic practice and the enablers and constraints. This study confirmed that constructivist pedagogic approaches are being applied and student-centered learning is being pursued in this university under study. The extensive data collected identified critical areas for improvement. Significant gaps relevant to the educational system of the UAE were unraveled and a model unique to the UAE federal educational system to evaluate the learning and teaching approaches is proposed.

The FC offers several courses, and student participants responded according to their experiences within all the courses offered and with all faculty that taught at the FC. Therefore, student insights stemmed from their experience of the whole college and were not limited to a department. Similarly, students from the COE were spread across the final year of the college, so their perspectives were of the whole college.

Therefore, this study has contributed significantly to both the university under study and the UAE higher education context of the federal universities.

6.5 Limitations of the Study

The study was undertaken in women's colleges, so the insights are from the perspectives of women and the findings could be different in a men's college.

The case study would have been stronger if it had been extended to three or four of the colleges or even all six of the colleges in the university. However, the limitations of the time constraint for the completion of this dissertation did not allow for such an extensive sample and comparison.

The interview and FGD periods took longer than anticipated. There are certain pockets of time that students are more free than others. Between mid-term and final assessment periods and winter and summer vacations the phase of the data collection extended over three semesters.

6.6 Generalisation

There are some areas that overlap between all federal universities and public schools, as they are all under the umbrella of the UAE MOE.

All federal universities are accredited by the CAA and are required to comply with both CAA and UAE QFE learning outcomes, as indicated in the document analysis (section 4.1.3). QFE, as detailed in the literature review (Chapter 2, section 2.7), has set criteria for all levels of education, including the undergraduate programme, and this is consistent for all universities in the UAE. EQAMS is a CAA requirement for federal universities.

Furthermore, the majority of students transferring to federal universities have completed their compulsory education in public schools throughout the country. All public

schools use the national curriculum of the UAE MOE. Therefore, the implications raised in section 5.3 of prescription vs. innovation and college readiness may be generalised to other federal universities. The UAE Constructivist Approach to Learning Model may be generalisable also.

However, generalisation in all aspects may not be possible as both internal and external factors may vary. The university under study has gained both international and national accreditation; faculty are mostly foreign and western-educated and western curriculum models are used. This may differ in other federal universities.

A general assumption cannot be made of compulsory education in public schools, as there are select public schools for gifted children, albeit few. For example, FC FGP4 cites an example of her brother in Grade 9, who is attending one such high school and is experiencing the same student-centred pedagogic approach as she is and is already preparing for his English language IELTS assessment. This, she said, is an improvement on her high school experience.

6.7 Recommendations for Further Research

The study has been conducted in the middle of the 10-year deadline of UAE Vision 2021, when the HE system has been in a state of continuous change, with regular reassessments of policy directives and curricula. Further research is recommended at the end of the deadline to explore the outcomes of these changes.

A constraint that surfaced in this study is the transition to the EQAMS, which has added to faculty's workload. Once faculty has adjusted to using this system or an alternative solution has been integrated, a different perspective on this constraint could emerge.

FC FP3 and FC SP2, SP4 and SFGP3 commented that some faculty members at the FC, though highly qualified academically, were rated as poorly qualified to teach. FC FP1 commented that teaching practices are observed and suggestions for improvement are made.

This presents a contradiction in the comments. The SELE is a feedback form to evaluate the effectiveness of faculty teaching procedures. Its effectiveness could be in question if students are still experiencing inadequate teaching approaches from some faculty members. Further research is required in this area.

The lack of student college readiness has been a long-standing issue, identified as early as when the first CEPA was implemented in 2004 and this was again mentioned in 2007 in the MOE report (UAE MOHESR, 2007). This study revealed that the same problems of college readiness continue to exist. In 2017, science, maths and technical subjects were introduced in English into the national school curriculum and EmSAT was launched to monitor progress of student readiness level in public schools (UAE MOE, 2017a). Future research is recommended to explore the effectiveness of the EmSAT.

This study reports that the language barrier in tertiary education hinders the accessing of SCP. As English language capabilities are strengthened in compulsory education, future research would be recommended to identify whether students with English language proficiency do access SCP more easily in tertiary education.

More than 90% of the student population in two of the three federal universities are female (Pennington, 2017) and women are valued as equal contributors to society (McFarlane, 2018). It is anticipated that those who graduate as teachers from the federal universities will take on roles as teachers in public schools and contribute towards the SCP that is being pursued by the educational innovation driven by UAE Vision 2021. An additional goal of UAE Vision 2021 is to nurture the UAE culture and identity. The national Emirati graduate teachers could be the ideal role models in fulfilling this vision.

However, Buckner (2017) found Emirati female teachers in public schools are dissatisfied due to a lack of sufficient professional support, autonomy in decision making and restrictive administrational policies. The findings also revealed that many Emirati female

graduates may not pursue a career (COE FP1, 2 and 6) and Pennington (2016) notes that family and children take priority over career. There appears to be a significant challenge in expecting female graduates pursing employment opportunities to contribute towards the advancement of the UAE knowledge economy. Further research in this area may reveal factors that could contribute to overcoming this challenge.

A final recommendation is for a comparative study on the effectiveness of National Qualifications Frameworks to be undertaken between UAE's QFE, UK's QAA, South Africa's NQF, Finland's policies on curriculum, and others.

6.8 Conclusion

This case study has investigated the pedagogic approaches practised in a female undergraduate programme at a federal university in the UAE in relation to the educational transformation driven by UAE Vision 2021. Empowering the next generation of Emiratis with higher-order thinking skills to compete in the global knowledge economies and to drive the UAE's development is crucial to its future success. Catapulted by UAE Vision 2021, educational innovation promotes constructivist student-centred pedagogy in the federal universities.

This comparative study between the foundation college (FC) and the College of Education (COE) and between the faculty and students of each college is based on the theoretical framework discussed in the literature review (Chapter 2, section 2.4) and the validated instruments ASSIST and ATI, justified in the methodology chapter (Chapter 3, section 3.3.1).

The findings of this mixed-methods study revealed that constructivist pedagogy and student-centred learning is largely practised at both colleges under study but there are significant constraints that hinder students from accessing the deep approaches to learning.

Significant constraints point to a lack of college readiness in students transitioning from the public schools; a lack of a balance between prescription vs. innovation in the curriculum and the possible ineffectiveness of the feedback systems provided for faculty and students. The lack of students' college readiness is twofold: first, transitioning from TCP in public schools aggravates accessing constructivist pedagogy readily in HE although students seem to adapt in time. The lack of proficiency in EMI appears to be the biggest obstacle that hampers accessing learning tasks of DAL such as reading comprehension, clear and detailed expression in writing and extended research on study topics amongst others. Therefore, progress in compulsory education as envisioned in UAE Vision 2021 to achieve "a national curriculum that will go beyond rote learning to encompass critical thinking" (2010, p. 23) is slower than anticipated.

Prescription vs. innovation, a recent development within the colleges under study, questions the use of highly prescriptive learning outcomes that may stifle accessing experienced faculty's tacit knowledge and professional judgement. Over 75% of faculty participants at both colleges have over 10 years of teaching experience in the UAE federal universities. Expert faculty with wide experience and tacit knowledge of teaching within the UAE context could be a valuable source to harness.

The ongoing debates over the effectiveness of the highly prescriptive quality assurance models internationally and the failure of South Africa's NQF (Allais, 2007) precipitate the need for a re-evaluation of the UAE QFE learning framework. Finland's success in allowing innovation at the educator levels (Darling-Hammond, 2009; Sahlberg, 2007) may be an indication of moving in the direction of finding a balance between prescription and innovation. As House (1991) warns, if hidden factors that surface in research studies are not addressed, they, "may surface when the inadequacies of the policies implemented become evident post the research phase" (p. 6).

One of the visions of the UAE National Agenda is for national Emirati teachers to take up 90% of teaching positions in public schools (Zaman, 2016). The findings reveal that students in the teacher preparation program at COE apply more practice-based learning and are eager to enter their future teaching profession. However, their internship programs currently take place at the private schools. It would better prepare them if some of the internship period is spent in the public schools as this is where they envision to teach in the future.

Other emerging factors of significance were the influence of top-down policies on practice, organisational culture, western models and cultural factors of eliciting critical thinking in female students within a patriarchal society.

The study undertaken during this phase of rapid educational innovation in the UAE's higher education system has identified some significant gaps. It may be of critical importance to policy makers and administrative leaders in the federal universities to understand the nuances of policies transforming to practice as the deadline to achieving the goals of UAE Vision 2021 approaches.

UAE's exemplary achievements as a young nation are proof of the nation leading innovation and change for constant progress. The Arab Knowledge Project was initiated by the MBRF in partnership with the UNDP/RBAS (2011) to stimulate educational advancement and drive economic success in the Arab region. UAE's educational reforms can therefore have an influence on the region. Empirical research of this nature can contribute to the educational innovation that is specific to the region. The unique context-based learning model: The UAE Constructivist Learning Model, that evolved from this study can provide a reconceptualisation of learning models that have remained unchanged for decades.

6.9 Personal Transformation through the Professional Doctorate

Undertaking the professional doctorate has impacted the personal self, world-view and professional practice of the researcher. Personal growth in the patterns of thinking, reflexive practices and critical judgement was gained through the process of developing this thesis (Mezirow, 1991). Encountering "troublesome knowledge" and crossing "threshold concepts" (Meyer, Land & Baillie, 2010, p. xii) of seeming impossibilities unlocked the ways of understanding and interpreting as new knowledge was acquired and new skills honed.

More importantly, cognitive and affective transformation was experienced in the perception of worldview; one of open-mindedness and recognition of endless possibilities for exploration and that to exploit, we must remain in a continual state of learning. Therefore, the perceived prestige of the doctorate does not overshadow the humility gained in the realisation that the knowledge and skills obtained are steps on an endless journey of constructivism and lifelong learning becomes a reality.

The impact on the professional practice is experienced at multiple levels. The intensive research process and the opportunity to interview professionals and students face-to-face have expanded knowledge and informed practice. The role of reflection and reflexivity drove the research focus and as Fenge (2009) argues that, through practice, the nature of new knowledge is continually being developed. The analysis, evaluating and synthesising of the data unravelled unexpected new knowledge which reinforced the validity of research and discovery.

In reflecting on this journey of the dissertation, there have been numerous areas of growth; personally, as an individual, the positive impact on the organisation of practice, and on the students and professionals. As a practitioner researcher, the undertaking of this professional doctorate has ultimately been a challenging yet novel and rewarding experience.

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Appendices

Appendix A: Student Survey – Deep Approach to Learning

Online Student Survey

Exploring the pedagogic approaches in federal universities in the UAE

Responses are to a five point Likert scale of Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree	
Independent Variable 1 – Deep Approach	
Dependent Variable 1 - Seeking Meaning (Understanding)	
1	I usually try to understand the meaning of what I am learning and not only just memorize facts
2	I like Lecturers who encourage us to think for ourselves, and are open to our ideas
3	When I am reading, I stop from time to time to reflect on what I am trying to learn from it.
4	Before tackling a problem or assignment, I first try to break it down and analyze the parts to it.
Dependent Variable 2 – Relating Ideas (Analysing)	
5	Ideas in course books or articles often set me off on long chains of thought of my own.
6	When studying a new topic, I try to understand how all the ideas fit together
7	I like exams which allow me to show that I've thought about the course material for myself
8	I like to play around with ideas of my own even if they don't get me very far
Dependent Variable 3 – Use of Evidence (Evaluating)	
9	I look at the evidence carefully and try to reach my own conclusion about what I'm studying
10	Often I find myself questioning things I hear in lectures or read in books and I like to research further on the topic
11	When I read, I examine the details carefully to see how they relate to what is being said
12	It's important for me to be able to follow the argument, or to see the reason behind things
Dependent Variable 4 – Synthesize and apply	
13	I often find ideas from my lectures that I can connect to other situations or topics
14	I find that studying academic topics can be quite exciting at times.
15	I like the practical projects as it helps me to understand the material better
16	I can see there is some connection from what I have learned in the past to the new topics I am learning now.

Appendix B - Student Survey – Surface Approach to Learning

	Independent Variable 2 – Surface Approach
	Dependent Variable 1 - Lack of purpose
17	Often I find myself wondering whether the work I am doing here is really worthwhile and if I can use it in the future in my profession.
18	I don't have the confidence that when I enter my profession, I will know how to apply all the information I am learning here.
19	When I look back, I realize I chose this course because it is a reputable profession with high salary and not because the course topic interests me.
20	I study hard to get good grades so that I can get a good job.
	Dependent Variable 2 – Unrelated memorizing
21	I find I should concentrate on just memorizing a good deal of what I learn
22	Much of what I'm studying makes little sense: it's like unrelated bits and pieces.
23	I'm not really sure what is important in the lectures, so I try to memorize all I can.
24	I often don't understand the content of course topics, so I just memorise them to pass my exams.
	Dependent Variable 3 – Syllabus bound, lack of research
25	I mostly study my textbooks and notes from my course topics. I do very little research on subjects beyond that.
26	I concentrate on learning just those bits of information I need to know to pass.
27	I study just what seems to be required for assignments and exams.
28	I like to be told precisely what to do in essays or other assignments
	Dependent Variable 4 - Fear of Failure
29	Often I feel I'm drowning in the sheer amount of material we must cope with.
30	I often worry about whether I'll ever be able to cope with the work properly.
31	I often worry if I will remember what I am studying and if I can apply it in my future job.
32	I sometimes worry that if I don't use the notes given by my professor for my exams, I won't get high marks
	Independent Variable 3 – Supporting UAE Vision 2021
33	I want to understand what I am learning now so I can use it in my future profession and contribute to the progress of my country as a national.
34	I know that UAE Vision 2021 encourages us as students in education to use critical thinking and creativity
35	I believe skills as good communication and team-working are needed to be successful in my future career.
36	I want to have an active part in developing my country

Open ended question in the Student Questionnaire

1. What factors made the transition from the way you learned in school to the way you learn in university easy or difficult?

2. What factors will make the degree course easy to relate to your future profession?

3. What factors will make the degree course difficult to relate to your future profession?

Appendix C: Faculty Survey & OEQs

<div align="center">

**Approaches to Teaching Inventory Survey
for faculty at FC and COE**

</div>

	Questions – Answers to Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree
	Independent Variable – Student-Centered Pedagogy
1	Assessments should test the conceptual understanding of the subject
2	I encourage students to build on the basic information provided in their course texts and lectures to create new concepts and new learning information to their background knowledge
3	Students should generate their own notes rather than always copy my notes verbatim
4	Part of the teaching time should be used to encourage students to question their existing ideas of the topic under discussion.
5	Questions that faculty ask should be 'open-ended' in order to promote multiple and sometimes conflicting answers
6	I allow part of my teaching time for student discussion groups – to engage in blue-sky thinking or develop mind maps of difficult aspects of the lesson
7	In my teaching sessions, I use challenging examples to provoke debate
8	I provide opportunities for students to discuss their changing understanding of the subject
	Independent Variable – Teacher-Centered Pedagogy
9	In order to ensure students, gain high grades for their formal assessments, it is important that the lectures completely describe the subject studied
10	I feel it is important to present a lot of facts to students so that they know what they must learn for this subject
11	I think an important reason for running teaching sessions in this subject is to give students a good set of notes
12	I feel that I should know the answers to every question that students may put to me that is related to the topic taught
13	I design my teaching with the assumption that most of the students have very little useful knowledge of the topics to be covered
14	I concentrate in covering the information that is available from their course text and discourage further research on the internet
15	I find there is insufficient time to include activities as there is a lot of course material to complete and so restrict my classes to lectures
16	I only need to provide the students with the information they will need to pass the formal assessments

Open-ended questions

1) What are student experiences and preferences to learning and teaching approaches practised?
2) What are enabling and constraining factors to this transition from your perspective?

Appendix D: Selection of Documents for Analysis

Document Analysis: Selected Documents

Subject	Selected Documents			
	UAE Vision 2021	**MOHESR/MOE Policies**	**University X**	**News Articles**
Knowledge Economy/ UAE Vision 2021	UAE Vision 2021 (2010).	UAE National Qualifications Authority (2013)	Mission and Vision, University X website	UAE raises the bar for HE in the ME (Swan, 2013)
	UAE National Innovation Strategy (2015).	Educating the next generation of Emiratis: A master plan for UAE Higher Education (2007)	University X Faculty Handbook 2017 – 2018	UAE launches national strategy for Higher Education 2030 (Gulf News, 2017)
	UAE Reforms Education System as part of Vision 2021 (Fanack, 2017)	Ministry of Education 2010 to 2020 Strategy (MOE Website)	University X website	Foundation year at UAE state universities to be scrapped in 2018 (Salem & Swan, 2013)
	UAE: Education in the UAE (Kamal, 2018)	Commission for Academic Accreditation (2011)	University X Factbook 2017– 2018	Reviewing UAE Vision 2021 progress (Fanack, 2017)
Deep/ Surface Approach	UAE National Qualifications Authority (2013)	Ministry of Education Strategic Plan 2017– 2021 (MOE website)	University X Learning Outcome Assessment Handbook 2016– 2017	National learning needs to be about thinking (Al Ramahi, 2018)
	CAA Strategic Plan (2011)	Qualification Framework Emirates (QFE, 2012)	Course Files, University X Guidelines (University X website, 2018)	HE Strategy to help youth shape their future (Nasir & Zakaria, 2017)
	First Look: The UAE and the Future of Work (MBRF & PricewaterhouseCoopers, 2017)	National Strategy for Higher Education 2030	Annual Assessment Plan COE 2015–2016 (University X website, 2018)	Federal universities in the UAE to get same regulators as private universities (Swan, 2013)
Higher-Order Thinking	UAE National Agenda (2014)	Arab Human Capital Challenge: The Voice of the CEOs (MBRF & PricewaterhouseCoopers, 2007)	Annual Assessment Plan UC 2015–2016 (University X website, 2018)	

Qualifications Framework Emirates Handbook (2012)

UAE Public Policy Forum. A Fertile Oasis: The Current State of Education in the UAE (Warner & Burton, 2017)

University X and Foundation College Course Catalogues (University X website, 2017)

Appendix E: Interview questions for students

SEMI STRUCTURED INTERVIEW FOR STUDENTS AT FC AND COE
Title: Teaching and Learning approaches in Higher Education in the UAE

INTERVIEW QUESTIONS

TEACHING AND LEARNING PRACTICES IN THE FEDERAL UNIVERSITIES IN THE UAE,

Participant attributes:

    a. Your age group (Under 25 / 26-35 / 36-45)
    b. Your country of origin?
    c. How many years at this college as a student?
    d. Have you been a student at any other universities in the UAE previously?

Pedagogical Expectations

1. Do you like the teaching and learning approach used in college?
2. Would you like to continue using this way of learning?
3. Are you able to use things you are learning in one subject in other subjects or outside of university?
4. How much of the subjects you are learning do you find you need to memorize facts? Do you like to or find yourself memorizing the notes given to you by the professor?
5. Do you have group discussions, team work on assignments or do you work by yourself most of the time?
6. Do you have learning outcomes to meet?
7. Do you find that what you are learning now is very new topics or are there things you can relate to your past learning?

Influence of Compulsory Education for students at FC

8. Is there a difference in the learning approach between school and university?
9. What factors made the transition from the way you learned in school to the way you learn in university easy or difficult?

Confidence to enter their Future Profession for Students at COE

10. What factors have made the degree course easy to relate to your future profession?
11. What factors have made the degree course difficult to relate to your future profession?

Constraining and Enabling Factors

12. What would you say are constraining or enabling factors to achieving the deep approach in teaching and learning at this college?

WRAP-UP

13. Do you have anything else you would like to add?

Appendix F: Semi-structured interview questions for faculty

SEMI STRUCTURED INTERVIEW QUESTIONS
FOR FACULTY MEMBERS AT FC AND COE

Title: Teaching and Learning practices in Higher Education in the Federal Universities in the UAE

DEFINITIONS

Below are the definitions of surface approach, deep approach and higher order thinking within the context of the research study.

1) The **Surface approach** practices rote learning, drill and recitation of the text and emphasis is on teacher lecturing (Springer, 2006).

2) The **Deep approach** stimulates interest in the content, students understand the material, reproduce it in their own terminology, and can relate and apply the concepts in other contexts (Marton and Säljö, 1976). In this type of learning, the student is actively involved in the learning process and learning is student centred.

3) **Higher order thinking skills** is described as critical thinking, analysing, evaluating, applying, creativity, reflection, and synthesizing new knowledge (Ennis, 1989; Zoller, Ben-Chaim, Ron, Pentimalli, & Borsese, 2000).

4) UAE Vision 2021, (2011, p. 23): "… through a progressive national curriculum that will go beyond rote learning to elicit critical thinking to equip students for today's world"

INTERVIEW QUESTIONS

Participant attributes:

    a. Your age group (26-35 / 36-45 / 46 - 65)
    b. Your country of origin?
    c. How many years at this college as a faculty member?
    d. Have many years in the teaching experience in universities?

Pedagogical Expectations at ZU

2. Would you say that UAE Vision 2021 that says, "… through a progressive national curriculum that will go beyond rote learning to elicit critical thinking to equip students for today's world' (2011, p. 23) is being practiced in the teaching and learning process at this college?
3. Is there a guideline or framework provided by the university for the type of teaching and learning approach to apply?
4. Is the curriculum structured to promote an approach to teaching and learning or can you adapt the curriculum to interject teaching methods of your preference?

Appendix G: Semi-structured interview questions for faculty, page 2

Personal views and approaches used

5. What is your own teaching philosophy? Does it support the surface or deep approach to teaching and learning?
6. Would you say that the deep approach to teaching and learning is being used at this college – in what ways do you see that manifested?

Student Experience

7. Question for **FC Faculty:** How are students adapting to the change from high school to university? Are there any influences that help or hinder their progress?
8. Question for **COE Faculty:** Would you say that the students have transitioned to a deep approach to learning by the time they enter the College of Education?
9. From your perspective, how do students apply the deep approach in their learning process?

Influence of UAE Vision 2021 on the pedagogic practice

10. Are students aware of UAE Vision 2021's influence on their pedagogic approaches?
11. Is there awareness within the College or amongst Faculty of a Skills Gap and a drive to achieve higher order thinking for the labour markets of the knowledge economies?

Constraining and Enabling Factors

12. What would you say are enabling factors to achieving the deep approaches to teaching and learning at this college?
13. What would you say are constraining factors to achieving the deeper approaches to teaching and learning at this college?

WRAP-UP

14. Do you have anything else you would like to add?

Appendix H: Additional questions added to focus group

Questions for Focus Group Discussion – COE

Additional questions based on the quantitative survey analysis

October 2017

1. Do you think that teaching and learning are intricately linked? How?

2. Do you evaluate the process, the effect it is having on students learning and sometime change strategies?

3. What would you say are 3 main teaching strategies you use that seem to be most effective – that has high learning outcomes?

4. Do you find yourselves in a dilemma sometimes on giving priority to "learner needs" to meeting the curriculum needs? Do you find yourselves cramming to complete the curriculum?

5. What is your personal view on best teaching and learning methods?

- Surface approach, strategic learning or deep approach?
- Teach so students can pass exams and score high grades?
- Help students to understand apply learning in other contexts?

6. Any comments about using western models amidst a completely local context?

Appendix I: UOL Ethics Approval (p.1)

UNIVERSITY OF LIVERPOOL | ONLINE PROGRAMMES

Dear Margaret Diana Cherryn Kelly

I am pleased to inform you that the EdD. Virtual Programme Research Ethics Committee (VPREC) has approved your application for ethical approval for your study. Details and conditions of the approval can be found below.

Sub-Committee:	EdD. Virtual Programme Research Ethics Committee (VPREC)	
Review type:	Expedited	
PI:		
School:	Lifelong Learning	
Title:	Exploring the changes in learning and teaching approaches at the federal universities in the UAE from the perceptions of students and faculty	
First Reviewer:	Dr. Lucilla Crosta	
Second Reviewer:	Dr. Kalman Winston	
Other members of the Committee	Dr. Martin Gough, Dr. Rita Kop, Dr. Baaska Anderson, Dr. Kalman Winston	
Date of Approval:	28th November 2016	

The application was APPROVED subject to the following conditions:

Conditions		
1	Mandatory	M: All serious adverse events must be reported to the VPREC within 24 hours of their occurrence, via the EdD Thesis Primary Supervisor.

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Sub-Committee should be notified. If it is proposed to make an amendment to the research, you should notify the Sub-Committee by following the Notice of Amendment procedure outlined at http://www.liv.ac.uk/media/livacuk/researchethics/notice%20of%20amendment.doc.

Where your research includes elements that are not conducted in the UK, approval to proceed is further conditional upon a thorough risk assessment of the site and local permission to carry out the research, including, where such a body exists, local research ethics committee approval. No documentation of local permission is required (a) if the researcher will simply be asking organizations to distribute research invitations on the researcher's behalf, or (b) if the researcher is using only public means to identify/contact participants. When medical, educational, or business records are analysed or used to identify potential research participants, the site needs to explicitly approve access to data for research purposes (even if the researcher normally has access to that data to perform his or her job).

Please note that the approval to proceed depends also on research proposal approval.

Kind regards,

Lucilla Crosta

Chair, EdD. VPREC

The following link leads to the University of Liverpool Ethics Approval, Participant Information Sheets, and Consent Form.

https://www.dropbox.com/sh/v5s4gqq088njivz/AAC1hp6wbCz2HXljkSjx6il5a?dl=0