Views and Concerns of Vocational Educators about the Adoption of the Reformed Vocational Curriculum: A Case Study Using Concerns-Based Adoption Model

آراء ومخاوف المعلمين المهنيين حول اعتماد المنهج المهني المعدل: دراسة حالة باستخدام النموذج المعتمد القائم على المخاوف

by

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A thesis submitted in fulfilment

of the requirements for the degree of

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Investigating the views and concerns of vocational educators in relation to the adoption of the reformed vocational curriculum: A case study informed by the Concerns-Based Adoption Model (CBAM).

التحقيق بشأن آراء واهتمامات الاختصاصيين التربويين العاملين في مجال التعليم المهني فيما يتعلق باعتماد المنهاج الدراسي المعدل الذي يُعني بالتعليم المهني: استند هذا التحقيق على النتائج المنبثقة عن دراسات الحالات الفردية القائمة على نموذج التبني القائم على القلق **(CBAM)**

By
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Abstract

The UAE's education sector has been undergoing tremendous reforms, keeping abreast with an overarching vision of transforming the nation to a knowledge-based economy. These revolutionizing initiatives have revamped the entire Vocational Education and Training (VET) landscape, as a response to meeting the ever-changing occupational skills demands. Governance and structural reforms in the VET sector has been perceived as a means to address UAE's alarmingly higher skills-gap challenges, enhance national workforce competencies, and establish training systems to meet 21st century skills demands. One of the significant reforms within the VET sector is the introduction of the new vocational curriculum model, that forms the basis of vocational qualifications (Q) based on the National Occupational Skills Standards (NOSS), collectively referred to as the Q+NOSS. However, these innovations have posed implementation challenges to VET providers and vocational educators in particular. It is a transition phase for UAE's vocational educators, shifting their classroom-delivery practices from a competency-based, non-NOSS curriculum framework to a NOSS-based curriculum model. Previous research studies have highlighted a number of innovation adoption challenges and emphasized the critical contributions of teachers in the successful implementation of any educational innovations. A detailed examination of vocational educators' innovation adoption practices would be useful to understand not only their views about the curriculum, but also help identify factors that influence the adoption process. As the VET sector in the UAE is gearing up to undertake these educational innovations, a closer look at various aspects of implementation would be worth undertaking. In congruent with the aforementioned circumstances, this research aims to examine the views and concerns of vocational teachers who are engaged in the adoption process. This research attempts

to 1) describe the newly introduced Q+NOSS model, 2) examine the views and concerns of adopters (vocational educators) and 3) determine the extent to which the curriculum implementation is congruent with those mandated by the regulators. Concerns-Based Adoption Model (CBAM) lays the theoretical base for this research, which is deeply rooted in Fuller's concerns theory embodied within the developmental conceptualization framework. Teachers' views and concerns are examined using two diagnostic constructs, namely Stages of Concern (SoC) and Levels of Use (LoU) advanced by the CBAM. The research has adopted a convergent parallel mixed methods approach influenced by the underlying theoretical constructs and the diagnostic tools. Data collection methods included document analysis, qualitative interviews and quantitative questionnaire-based survey. The two CBAM diagnostic constructs (SoC, and LoU) recommends the administration of a combination of qualitative interview and a survey-based SoC Questionnaire (SoCQ) to collect teacher concerns-related data, and a qualitative interview method to capture the Levels of Usage in regards to the innovation. The research found that majority of the vocational educators view curriculum as a prescribed set of instructional directives or mandates, a characteristic of most of the prescriptive curriculum implementation models. Research findings also indicate that majority of the teachers experience highly intense personal and informational concerns. These concerns results from the lack of standardized communication between key stakeholders, issues relating to the occupational relevance and currency of the subject matter, adequacy of the classroom support systems, workload distribution, regulatory challenges and collaboration issues. In addition, the research indicates that most of the teachers are currently at a 'routine' usage level and does not intent to suggest or make any radical changes to the curriculum, despite the acknowledgement of a number of adoption challenges. These findings could be used as

a basis for further investigation by the change facilitators and policy makers to formulate effective early intervention strategies.

ملخص الرسالة العلمية

يشهد قطاع التعليم في دولة الإمارات العربية المتحدة إصلاحات هائلة، تواكب متطلبات الرؤية الشاملة والتي تهدف إلى توجيه بوصلة الأمة نحو الاقتصاد القائم على المعرفة. فقد ساعدت مبادرات التحول على احداث تغيير جذري في نُظم التعليم والتدريب المهني بأكملها، بُغية مواكبة متطلبات التنمية المهارات المهنية المتغيرة في سوق العمل. وبالنظر إلى سياق الإصلاحات في مجال الحوكمة والإصلاحات الهيكلية في قطاع التعليم والتدريب المهني باعتبارها وسيلة للتصدي للتحديات المتعلقة بسد الفجوة المرتبطة بمحدودية المواهب ذات المهارات العالية في دولة الإمارات العربية المتحدة فإنه لا بد من تعزيز الكفاءات الوظيفية لدى القوى العاملة الوطنية وإنشاء أنظمة تدريبية لتلبية متطلبات مهارات القرن الحادي والعشرين. يُعتبر استحداث المناهج الدراسي للتعليم الفني والتدريب المهني ضمن النظام التعليمي الجديد من أهم التغييرات الجوهرية التي طرأت على قطاع التعليم والتدريب المهنيين (). ومع ذلك Q+NOSSالذي يشكل ركيزة أساسية للمؤهلات المهنية التي تستند على المعايير الوطنية المهنية التي تُعرف باسم (، فقد شكلت هذه الابتكارات تحديات تشغيلية لمزودي الخدمات التعليمية في قطاع التعليم والتدريب المهني بشكل عام والمعلمين المهنيين بشكل خاص. هذه المرحلة ستكون بمثابة مرحلة انتقالية للمعلمين المهنيين في دولة الإمارات العربية المتحدة والتي تنطوي على تغيير ممارسات التدريس المتبعة في الفصول الدراسية من خلال الاستعاضة عن الإطار الخاص بالمنهاج الدراسي الذي لا يستند على معايير المهارات المهنية الوطنية بمنهاج دراسي نموذجي يرتكز على معايير المهارات المهنية الوطنية. لقد سلطت الدراسات البحثية السابقة الضوء على عدد من الابتكارات، كما شددت على الدور الجوهري الذي يلعبه المعلم في نجاح تنفيذ أي ابتكار تعليمي منشود. سيكون من المفيد إجراء دراسة مستفيضة حول الممارسات الابتكارية المعتمدة لدى المعلمين المهنيين ليس من أجل فهم وجهات نظرهم حول المنهاج الدراسي فحسب، ولكن لمساعدتهم أيضاً في تحديد العوامل التي من الممكن أن تؤثر على مدى فاعلية اعتمادهم لهذه الإجراءات. نظرًا لأن قطاع التعليم والتدريب المهني في دولة الإمارات العربية المتحدة يستعد للمضي قدماً في تطبيق هذا الابتكار التعليمي، لذا سيكون من المفيد أن يتم إلقاء نظرة فاحصة على الجانب التنفيذي. في ضوء الظروف السالفة الذكر، فإن هذا البحث يهدف إلى دراسة آراء المعلمين المهنيين واستعراض وجهات نظرهم. كذلك يحاول البحث تغطية عدد من الجوانب الجوهرية أهمها تقديم بيان وصفي للمنهاج الدراسي النموذجي الموجه للتعليم الفني والتدريب المهني، ثانياً تفنيد أراء واهتمامات المعلمين المهنيين إزاء المنهاج الدراسي الموجه للتعليم الفني والتدريب المهني المنبثق عن الإطار الخاص بالمعايير الوطنية المهنية وأخيرا تحديد مدى توائم تنفيذ المنهاج الدراسي بين الجهات المكلفة من قبل الأساس النظري للبحوث ( )، حيث أنه يترسخ CBAMالهيئات التنظيمية. أرسى نموذج تبني الابتكار القائم على الاهتمامات (بعمق في نظرية مخاوف فولر المتجسدة في إطار التصور التنموي. ومن خلال الاستعانة بنموذج تبني الابتكار القائم على الاهتمامات تم جمع البيانات المدرجة في هذا البحث من خلال دراسة أراء واهتمامات المعلمين وذلك باستخدام نوعين من الأدوات ( ). LoU ومستويات الاستخدام أو التي تُعرف باسم الـ (SoCالتشخيصية وهما: ـ "مراحل الاهتمام" أو التي تُعرف باسم الـ (فقد اعتمد هذا البحث نهجاً قائماً على مزيج من الأساليب المتقاربة متأثراً بالبنيات النظرية الأساسية وأدوات التشخيص. ومن هذا المنطلق تم الاستناد على ثلاثة منهجيات لجمع البيانات، أولاً: تحليل الوثائق، ثانياً: إجراء المقابلات النوعية وأخيراً إجراء مسوح استقصائية قائمة على أساس الاستبيانات. وفي هذا السياق فقد أوصى"نموذج تبني الابتكار القائم على الاهتمامات" ؛الذي يعتمد على نوعين من الأدوات التشخيصية وهما: ـ "مراحل الاهتمام" أو التي تُعرف باسم الـ ( ) و"مستويات الاستخدام" أو التي SoCعلى وذلك من خلال طريقتين، أولاً (SoCQ))؛ باستخدام استبانة مراحل الاهتمام أو التي تُعرف باسم الـ (LoU)تُعرف باسم الـ (إجراء مقابلة نوعية بُغية إعطاء صورة عن مستويات الابتكار من ناحية الاستخدام، ثانياً إجراء مسوح استقصائية قائمة على أساس الاستبيانات بهدف جمع البيانات المتعلقة باهتمامات المعلم. فقد تبين من البحث بأن غالبية المعلمين المهنيين ينظرون إلى المنهاج الدراسي على أنه مجموعة محددة من التوجيهات أو الإرشادات ، وهي تُعتبر سمة من السمات التي تتميز بها معظم النماذج الخاصة بالمنهاج الدراسي. كما تشير نتائج البحث بأن غالبية المعلمين الذين خاضوا هذه التجربة يعانون من مخاوف بالغة الشدة على الصعيد الشخصي وعلى الصعيد المهني فيما يتعلق بإلمامهم بالمعلومات ذات الصلة. وتتضمن هذه المخاوف ما يلي: عدم وجود أي نوع من التواصل الرسمي من قبل الجهات القيادية، والمسائل المتعلقة بالجوانب المهنية ومدى تقبلهم للمواضيع المعنية، ومدى كفاية أنظمة الدعم اللازمة للفصل الدراسي، وآلية توزيع عبء العمل، والتحديات التنظيمية كذلك المسائل التي تتعلق بالتعاون. بالإضافة إلى ذلك، يشير البحث إلى أن المستوى الخاص بمعظم المعلمين حاليًا فيما يتعلق بتطبيقهم للمنهاج الدراسي

تغلب عليه السمة "الروتينية" لذلك لا يعتزمون اقتراح أو إجراء أي تغييرات جذرية على المنهاج الدراسي، على الرغم من اعترافهم بمواجهتهم لعدد من التحديات المصاحبة للمنهاج الدراسي. يمكن للخبراء الاستشاريين وصانعي السياسات المسؤوليين عن إدارة عملية التغيير الاستناد على هذه النتائج المستخلصة في هذا السياق كأساس لإجراء المزيد من التحقيق لصياغة استراتيجيات فعالة للتدخل المبكر.

Dedication

If there is a starting point for this research, it perhaps began with a paper presentation I gave at the research conference in Liverpool John Moores University in 2009. There, for the very first time, I was standing in front of academics and doctoral students, attempting to discuss my research ideas.

This thesis is one of the most challenging, and at the same time exciting endeavors at the in my life, so far. This wouldn't have been possible without the guidance of my supervisor Professor Abdulai Abukari. He stood with me, patiently, throughout the journey.

I am extremely fortunate to have the privilege of knowing so many colleagues at different higher education institutions in the UAE who have supported my research life with their friendship and conversation. I want to thank all my colleagues for all their cooperation in carrying out this research. I have to acknowledge all my colleagues at the Ministry of Education who supported me with all their timely and far-reaching advice and guidance: H.E. Engineer Abdul Rahman Al Hammadi, H.E. Sheikha Khulood Saqr Rashid Al Qassimi, Khaled Al Mulla, Adrian Gavin, Aoife Anne Feeney, Asmaa Ahmed Habiba, Ayman Farouq, Fatma Ibrahim Ahmed, Josephine Wooldridge, Joyce Sneddon, Laurence Brown, Sumaia Ibrahim, and Rima Abou Khreibi. Also, a special thanks to Mr. Raja Abdulkader and Mr. Nowshad Thangal Kunju for all their support. My sincere apologies if any not cited feel slighted in anyway.

 I dedicate my thesis to my parents - *Athi and Ammachi*, my sisters, my brothers for all their blessings and prayers. A special feeling of gratitude to my wife Reema and my kids Khaleel and Roayaa, for their understanding and support.

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Chapter One: Introduction

1.1 Introduction

The Vocational Education and Training (VET) systems are being revolutionized in unpredictable ways in accordance with the ever-changing nature of the *world of work* (World Bank 2019). As one of the least homogeneous sectors of education (Billet 2011), VET systems have always been responsive to significant and massive social, economic, cultural, and political reforms. VET systems have been highly reactive and quick to respond to new-age occupational demands, and this necessitates the need to introduce dynamic education and training models to seamlessly integrate the *world of study* and the *world of work*. As a governance strategy to bridge skills-gaps and meet occupational competency demands, the primary purpose of vocational education is to empower learners to see themselves as future workers (Kincheloe 1999). This compelling linkage of VET systems with economic and occupational models distinguishes vocational education from other sectors of education. Further, this liaison emphasizes the core purpose of any VET systems, which is to contribute to a socio-economic and cultural platform characterized by a highly conducive learning environment and occupationally competent workforce (Mouzakitis 2010, Billett 2014, CEDEFOP 2017).

Major industrial revolutions, technological innovations, or socio-political reforms not only influenced and challenged the dynamics, but also the response mechanisms and strategies of VET systems. As a response to rapidly changing economies, occupational competency demands and technological innovations in education, VET system are reinvigorated across the globe. Henceforth, a range of variants of the vocational educational models permeate the work-based

education spectrum, which necessitates the establishment of dedicated governance structures and development of additional policies and procedures to address the new demands posed by the new socio-economic models advanced by the fourth industrial revolution. (Clayton & Harris 2018, Remington 2018, UNESCO & ILO 2018). For example, the UK is strengthening its technical education system by introducing a renewed apprenticeship-oriented provisioning model, 'which draws its purpose from the workplace rather than an academic discipline' (HEFCE 2017, Clayton & Harris 2018). These reforms at a governance level, has been set out in the legislative framework provided by the Technical and Further Education Act 2017 (House of Commons Library 2018), as a response to the 'long-term productivity problem' and 'chronic shortage of people with technical-level skills' (House of Commons Library 2018). Similar reforms are reported in Australia, following the National Vocational Education and Training Regulator Act 2011, aims at enhancing quality at two levels – stakeholder engagement, and the vocational qualification framework (Clayton & Harris 2018, Braithwaite 2018). All these reforms are aimed at resolving current issues and challenges that have engulfed the VET sector in recent times. UNEVOC identifies unclear progression pathways, skills mismatch, and lack of employer recognition as three major obstacles in the provisioning of VET, at a global level (Guez & Field 2018).

VET policy makers have also identified teacher quality as one of the key areas for consideration (Braithwaite 2018, Gallacher 2018, Guez & Field 2018, NESCO & ILO 2018), and the need to empower teachers and trainers for an effective provisioning of the VET (UNEVOC 2018). However, teacher quality has been discussed from a multitude of dimensional factors ranging from teacher motivation, qualification (academic and vocational), professional experience, teacher mobility, remuneration, recognition and value, teacher professional development and upskilling

(Wolf 2011, Stenstrom & Virolainen 2014, DfE 2017 , Braithwaite 2018). In her study that focuses on UNESCO's Education for Sustainable Development (ESD) initiatives, Pavlova (2009) emphasizes the role of teachers in the successful implementation of educational reforms. Pavlova argues that "the level of knowledge and enthusiasm of the educator will be a key factor in stimulating learners' interest and appreciation of issues of sustainable development". Furthermore, Pavlova maintains that "the attitudes and methods embraced and employed by the teacher must reflect the values of sustainable development and highest level of pedagogical practice". However, it is equally interesting to understand that these discourses focus more on teachers' role, capacity, enthusiasm and pedagogical practice. It is critically important for regulators and VET leadership in particular to devise effective operational plans in place for teachers to exercise highest level of pedagogical practice. Yes, teachers' role is crucial, so, what have been planned to ensure continuous commitment for them to exercise highest level of practice and enthusiasm? It should be more than upskilling teachers to catch up with the latest developments in technology, occupational practice and vocational didactics. A range of operational factors needs to be considered to enable teachers to perform their practice in the right frame of mind. Braithwaite (2018) argues that impeding factors such as poor remuneration, work-related stress, and unclear prospects of advancement hinder VET providers from attracting the best teachers. In his recommendation to the Australian government, Braithwaite encourages '*RTOs to become better informed about the benefits of having a well trained staff and motivated to incorporate this knowledge into their business plan*'. Grollman & Rauner (2010) underlines the 'social recognition' factor attached to teaching profession by stating that –'*while vocational teachers and trainers are essential to supporting skill development in the workforce, they are not high status for this role*'. Issues and challenges concerning teachers' social recognition and active participation in policymaking and

standard-based reforms have been widely discussed in a variety of literature. Under-representation of vocational teachers within the prescriptive, top-down reform approaches have been discussed in a variety of literature that underlines the significance and relevance of teacher engagement and social recognition.

Troudi & Alwan (2010) echoes the sentiments of secondary school teachers in the UAE, who feel undervalued and unrecognized in the process of curriculum innovation and enactment. UAE is an interesting case when it comes to VET provisioning considering the fact that there is no dedicated Further Education (FE) Sector per se, however is complemented by having a recently introduced dedicated for regulating vocational education in the country. Introduction of the NQA, and VETAC and QfE are praiseworthy initiatives, however it could be argued that UAE is still short of nationalized policies that specifically address the welfare and motivation of vocational education teachers. MoE (2017) indicates that vocational education teachers in one of the leading government institutions have not been promoted, appreciated and there is no policy in regards to teacher promotion and up skilling. So how would one expect a vocational teacher to exhibit the highest level of pedagogical practice and performance without adequately addressing his or her intrinsic concerns regarding motivation, remuneration, social recognition, career progression, job security and up skilling? Why are these factors not recognized in its fullest? Are there other factors that concerns the teacher that if addressed, would enhance their level of commitment and improve overall morale? MoE expects teachers to be role models, knowledgeable instructors, creative educators, trained professionals, and attentive counselors as part of its desired outcomes of MoE's 2010-2020 strategy (MoE 2019).

To meet these indicators, UAE is highly committed to enhance the skills of teachers and enhance their competency level and thereby ensure quality teaching practices. In addition, the newly introduced teacher licensing system primarily focuses on enhancing and improving teaching quality to meet international best practices in pedagogical practices (The Government of Abu Dhabi 2018). However, one could see that the focus of these initiatives tends towards the enhancement of UAE's school system and less towards higher education, and least in particular for vocational education. Now, this raises a few concerns regarding the recognition or identification of the VET, as an educational sector in the UAE. Where does it stand in term of provisioning? Let us have a brief look at the UAE's education system.

1.2 Background of the Research

At a broader level, the education system in the UAE is based on a three-tier structure comprising of early childhood, general education (consisting of pre-primary, primary, and secondary) and higher education (The Government of Abu Dhabi 2018, PwC 2018, UNESCO 2019). It is to be noted that, within the UAE context, vocational education or Further Education (FE) in its broadest sense is not identified as a dedicated education sector per se. It is positioned under the governance structure of both general education and higher education and operates under the national regulator in regards to its licensure, and program accreditation (PwC 2018), and regional regulators in regards to its operations (ACTVET 2019, KHDA 2019). Until 2010, before the introduction of Q+NOSS, the vocational education systems followed the qualification system proposed by the Commission for Academic Accreditation (CAA). This CAA-endorsed VET qualification system followed an independent structure, and not aligned with the occupational classification models prescribed by the international occupational standards. In 2010, with the introduction of the

National Qualification Authority (NQA), the VETAC, and the Q+NOSS system, the VET landscape of the UAE has undergone a major transformation at all levels in terms of governance, and provisioning, introducing in a range of educational innovations.

In its broadest sense, majority of the practitioners perceive vocational curriculum as a set of learning outcomes and performance criteria bundled together within a qualification unit document. As mentioned earlier, before the advent of the Emirates Qualification Framework (QF*Emirates),* vocational curriculum were described in terms of elements, performance requirements and delivery hours, articulated within a document referred to as the "course guide". These course guides where characterized by a course code, delivery hours, course purpose, elements and performance requirements. Each element in the course guide was attributed by one or more performance criteria. For instance, one of the elements read "1. Contribute to Project Scope". There are three performance requirements for this element and one of them, for instance, reads "Contribute to the identification of project deliverables". As a critical curriculum component, these elements and performance criteria were not aligned with established taxonomies or occupational standards. In addition to these, the course guide also included brief descriptions regarding different types of assessments (formative, practical exercises, class quiz, tests, assignments, projects, and summative) and emphasized the importance of evidences. These course guides were developed by curriculum specialists or subject matter experts drawing little or no inputs from industry representatives, sector skills groups, or market research (regarding employability skills or skills-shortage). Furthermore, the course guides were loosely coupled and independent. This is to say that these course guides were developed as per the discretion and knowledge of few individuals having varied range of experience in that specific industry sector. Before the start of a term or a semester, teachers were

provided with a couple of course guides for courses assigned to them in advance. Individual teachers prepare teaching materials (such as class notes, activities, exercises, and slides) and assessments corresponding to each course. It was observed that a majority of vocational teachers worked in isolation as they were tasked with administrative and academic (preparation) duties. Vocational curriculum for most of the teachers was limited to these elements and performance criteria, missing the big picture. The curriculum did not set any direction towards a specific job task or a particular occupation as there were no references made in regards to that. However, with the establishment of the National Qualification Authority (NQA), and the publication of QF*Emirates,* the qualification development practices of the UAE has taken an interesting spin. The reformed vocational qualification development practices proposed by the NQA are regulated under the supervision of Vocational Educational and Training Awards Council (VETAC), a dedicated entity within the NQA. As per the regulations of the VETAC, vocational qualifications are aligned with the National Occupational Skills Standards (NOSS). Qualifications developed as per the NOSS as referred to as the Q+NOSS, and categorizes them as principal qualifications, composite awards, and component awards. Furthermore, vocational curriculum units are now being referred to as "Qualification Units" and are characterized by credit value, QF*Emirates* Level, discipline, industry sector, elements and performance criteria. A more detailed account of the structure of the reformed vocational curriculum is explained in section 2.1.3.

As one of the competitive markets in the Middle East (World Economic Forum 2017, PwC 2018, IMD 2018), the UAE is capitalizing on its transformation initiatives that would prepare the nation to advance from an oil-dependent to an oil-independent and knowledge-based economy. With more than half of the federal budget allocated for education and social development projects (MoF 2018),

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national workforce development, active citizenship, and educational innovation positions itself as one of the UAE's top priorities and one of the pillars of its national agenda (The Government of Abu Dhabi 2018).

Within the context of higher (and vocational) education (HE), there are three notable advancements in 2010. These are a) setting up the NQA, b) introducing the QF*Emirates*, and c) establishing the VETAC. These three initiatives primarily indicate UAE's commitment towards achieving their envisioned national objectives. In addition, to prepare the VET sector to address the ever-changing industry demands, establishment of the VETAC demonstrate UAE's economy-oriented education strategy, with significant emphasis on prioritizing and promoting occupationally focused, job-oriented education in the country (NQA 2017).

These developments are directed towards transforming existing VET structures, both at governance and operational levels. This mandates a methodical review of the provisioning-models of current VET systems right from the aspect of development, implementation, transmission, and realization. One of the most significant and distinguished developments in the VET sector is the introduction of the Q+NOSS. The Q+NOSS development is accelerated through recognized national development committees (RNDCs) and sector advisory committees (SACs) to ensure its alignment with labor market demands.

1.3 Research Problem

Merriam (2009) suggests a top-down approach to developing the research problem characterized by a general context of the situation, the significance of the study, the knowledge-gap and finally the purpose statement.

UAE's transformation to a knowledge-based economy and sweeping reforms in its VET systems are placing increasing demands on the occupational competencies of individuals, and, consequently, will have direct influence over the future directions of the national vocational educational policy.

Transitioning to a reformed framework based on Q+NOSS demands considerable modifications to the existing provisioning models of vocational education institutions and licensed training providers (LTPs). These modifications, both at strategic and operational levels, necessitate redesigning the qualification structure to align with the requirements of the Q+NOSS framework. In addition, the Q+NOSS-based framework is not widely embraced by all the government and private LTPs in the UAE. Federal and emirates-specific (at governmental level) institutions follow international vocational qualification standards as part of provisioning their technical studies programs.

ABC Institute (the research site) is one of the first RTPs in the UAE to offer national qualifications comprehensively based on the Q+NOSS framework. As a leading VET provider in the country, having five campuses across the UAE, ABC institute currently offers thirty-six vocational qualifications based on Q+NOSS. ABC institute did undergo a major curriculum reform by transitioning from a grading-based model to a competency-based qualification model (such as Q+NOSS). Initially as a vocational teacher and later as a curriculum development specialist with the ABC institute for a period of five years, the researcher observed that the curriculum "change" did not undergo a smooth transition process, at all levels of administrations, teaching, learning, and assessment. Vocational qualification development across the globe follows a prescriptive, top-down approach with the NOSS at the heart of the qualification, and relies on the expertise of

representatives from different industry sectors and entities, subject matter experts, consultants, and labour and economic department delegates. At a policy level, the NQA does not mandate the explicit contribution or involvement of a vocational teacher to be part of the Q+NOSS development process (VETAC Q NOSS System Guidelines 2014). Hence, most often, vocational teachers will be provided with an externally mandated and "outsider-developed" vocational curriculum (such as the Q+NOSS), which forms the primary reference resource and critical guide for planning and executing their lessons.

1.3 Rationale of the research

The rationale behind undertaking this research could be viewed from a number of fronts. This starts with discussing the significance or present-day relevance of this research from a socio-economic and political context. This is followed by the scholarship gap and consequent dearth of academic literature pertaining to the topic of this research. Finally, but not least, the researcher's personal interest as a practitioner in the vocational education sector is also one of the reasons for undertaking this research.

1.3.1 Significance:

Despite all the ambitious educational innovation initiatives, UAE encounters of a number of challenges in realizing its innovation objectives. Major challenges include, but are not limited to alarming skills gap levels (Swan 2017), inadequately educated workforce (World Economic Forum 2017), rising unemployment rate among UAE nationals (SCAD 2018), lack of public expenditure on education and poor representation of female labor force (IMD 2018), and lack of a national TVET strategy (Al Hammadi 2016).

1.3.2 Knowledge-Gap:

Furthermore, little is known about the process through which the vocational curriculum innovations are perceived, conceptualized, regulated and implemented. In short, particularly within the context of curricular reforms in the VET, there are few insights about how curriculum innovations are adopted by the teachers, who are considered as the key agents of change.

Crotty (1998) maintains that most researchers start with a real-life issue that needs to be addressed or a question that needs to be answered. Within the scope of this research, the researcher has worked as vocational trainer and qualification developer for more than ten years with various government and private agencies and institutions. Subsequently, the researcher maintains a personal view that vocational teachers, in most instances are increasingly disengaged from curricular innovation initiatives. At a policy level, there is no mandate to encourage or foster teacher participation in the curriculum development processes and hence, all curricular reforms were prescribed to teachers without adequate participation and appropriate consultation with the teacher community. This has often resulted in teacher disengagement, resentment and an ever-increasing gap between the intended and enacted curriculum.

1.3.3 Personal Interest

Over the last twenty years, the researcher has been working in various roles both inside and outside the academic field of practice. Within the academic discipline, the researcher has worked as a vocational trainer, academic teachers, vocational qualification developer, qualification development committee member, and a regulatory representative with various private, government and federal entities across the UAE.

The researcher has worked with the ABC institute, which is the case for this research, as a VET assessor, qualification developer and as an academic project coordinator. At the same time, the researcher has also been collaborating with the non-academic sector in the various occupational domains, managing transformations projects in Information Technology, Human Resource Management, and Business Continuity Management. These twenty years of professional career across both the non-academic industry and the academic sector invoked a range of internal interactions, resulting in personal curiosity and inquisitiveness. As a corporate trainer and workplace coordinator interfacing industry representatives and as a vocational teacher interacting with the teachers, the researcher has gained insights of the nature of communication and dialogue exchanges in regards to the expectations and demands of both the world of study and the world of work.

Researcher's interaction with the industry partners, students' and workplace supervisors, observation and research about market trends and personal teaching experiences and interactions with the learning community triggered the curiosity to know more about the dynamics of the VET system, in regards to the qualification framework, industry engagement, national agenda, governance policies and sociocultural aspects of UAE national students. As part of this research, the researcher conducted three pilot studies focusing on the perceptions of vocational leaders, exploring the skills-gap, and evaluation of a curriculum development policy for one of the vocational institutions in the UAE.

Thus, the selection of the research topic was driven by the researcher's curiosity, interest, and outcomes of the pilot studies, and above all, researcher's lived experience in the dual role of a vocational teacher and a qualification developer.

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Five key factors influenced the researcher's decision to select the ABC Institute for conducting this empirical study.

1. Being employed in the institute for five years in the capacity of both vocational teacher and a qualification developer gave the researcher the familiarity of the environment and systems.

2. ABC institute is the first and only government vocational institutes offering national vocational qualifications, which are developed in the UAE by the qualification development team of the ABC institute in collaboration with the NQA and ACTVET.

3. ABC institute has been subject to major standard-based reforms particularly at a curriculum innovation and adoption level from an existing non-competency-based framework to a competency-based framework which requires to be explored in terms of the extent to which the transformation are being fulfilled.

4. Researcher's current engagement as a federal government representative, to align researcher's personal philosophy and research aspirations with the pillars of national initiatives and UAE vision 2021.

5. Researcher's lived experience as a teacher and a developer and the pilot studies conducted on vocational leader's perceptions, skills gap, and curriculum development policy identified the need for further research to understand teachers' perspectives about adoption of curriculum adoption.

1.4 Aim

The aim of this research is to examine the concerns and views of vocational teachers who are engaged in the process of adopting curriculum innovation.

1.4.1 Objectives

A range of objectives drives this research towards accomplishing its aim of exploring the views and concerns of vocational teachers as they engage in the process of adopting a reformed curriculum. The objectives are outlined as follows:

1. To understand the reformed vocational education curriculum in terms of its strategic purpose, framework, and operational aspects. The reformed vocational curriculum or the Q+NOSS will be reviewed comprehensively to understand it's alignment with the newly introduced qualification framework (QfEmirates) and how it conceptualizes the occupational skills. It starts with an in-depth review of the reformed Q+NOSS-based VET curriculum from two major standpoints and two key stakeholder groups. This includes the deconstruction of the Q+NOSS and scrutinizing two dimensions – the intentions and the enactment interfaces. The intentions aspect would look into the "prescription" aspect of the curriculum, as advocated by the regulators. The enactment slant will explore how the tools and devices proposed as part of the intentions are being "adopted" or "enacted" by the educator community. The curricular intentions, which are currently derived from international occupational standards will be analyzed by discerning a range of governance and operational structures that guide the development of the vocational curriculum. This would be facilitated by conducting in-depth examination of the newly introduced

qualification framework, the Q+NOSS development model, governance policies, and actual curriculum units. The logical linkage between the qualification framework (QfEmirates) and the Q+NOSS would bring out the curricular intentions for each vocational qualification. Further activities include a thorough review of the learning outcomes (LOs) and performance criteria (PCs), which are subsequent translation of the curriculum intentions. A considerable number of qualification units and their respective LOs and PCs will be examined to capture a detailed understanding of the intentions of the reformed curriculum.

2. To capture the views and concerns of vocational teachers as they adopt the Q+NOSS in the classroom as part of their teaching. Knowledge of enactment practices adopted by the teachers in regards to the implementation of the Q+NOSS-based curriculum is critical to the development of this research, and forms one of the key objectives of this research. Teachers' adoption practices will be explored by understanding how teachers respond to the curricular reforms from a personal, logistical and implementation standpoint. This would include knowing how educational reforms would influence the teacher, when he or she is operating as an individual or in the company of other teachers. In addition to that, the research will also look into subsequent concerns that may arise when teachers prepare themselves to administer the expectations demands set by the reforms. Also, teachers' concerns about learners as a direct effect of this curricular change will also be explored.

3. To know the extent to which the demographic characteristics influence teacher concerns. Teachers' professional experience, professional competence, personality traits, feelings, attitudes, and behaviors will be investigated to measure their influence in the adoption of educational innovations.

4. To examine the relationship between various kinds of concerns exhibited by the teachers as they adopt the reformed curriculum. The relationship between different categories of concerns, and the extent to which they influence each other, will be analyzed and forms part of the objectives. The research will analyze various concerns in regards to their impact. For instance, the research will examine whether teachers' personal concerns in any way influence their task concerns or impact concerns.

5. To examine the extent to which the curriculum implementation in actual practice is congruent with the curricular intentions. This will be carried out by reviewing the implementation aspects of the curriculum and by exploring the behavioral response of vocational teachers to the curriculum when the use the curriculum in their classrooms. It is significant for this research to understand how teachers embrace changes, challenges encountered, and operational measures embraced the change.

The following main research question was raised to pursue understanding about the views and concerns of vocational educators as they adopt the reformed vocational curriculum.

1.4.1.1 Main research question:

What are teachers' views and concerns about the reformed VET curriculum in regards to its development, level of engagement, adoption processes and enactment in the classroom?

1.4.1.2 Sub-questions:

The following sub- questions were advanced so as to address the main research question:

1. What is the reformed VET curriculum?

2. What are teachers' concerns and views and the extent to which they influence the

   adoption of the reformed curriculum?

3. To what extent demographic characteristics of the teachers influence their concerns, and

   why?

4. To what extent does teachers' concerns influence each other?

5. To what extent is the curriculum implementation congruent with those mandated by the

   regulatory body and why?

1.5 Structure of the Thesis

This research is divided into five chapters as per the roadmap of the research (Figure 1.1):
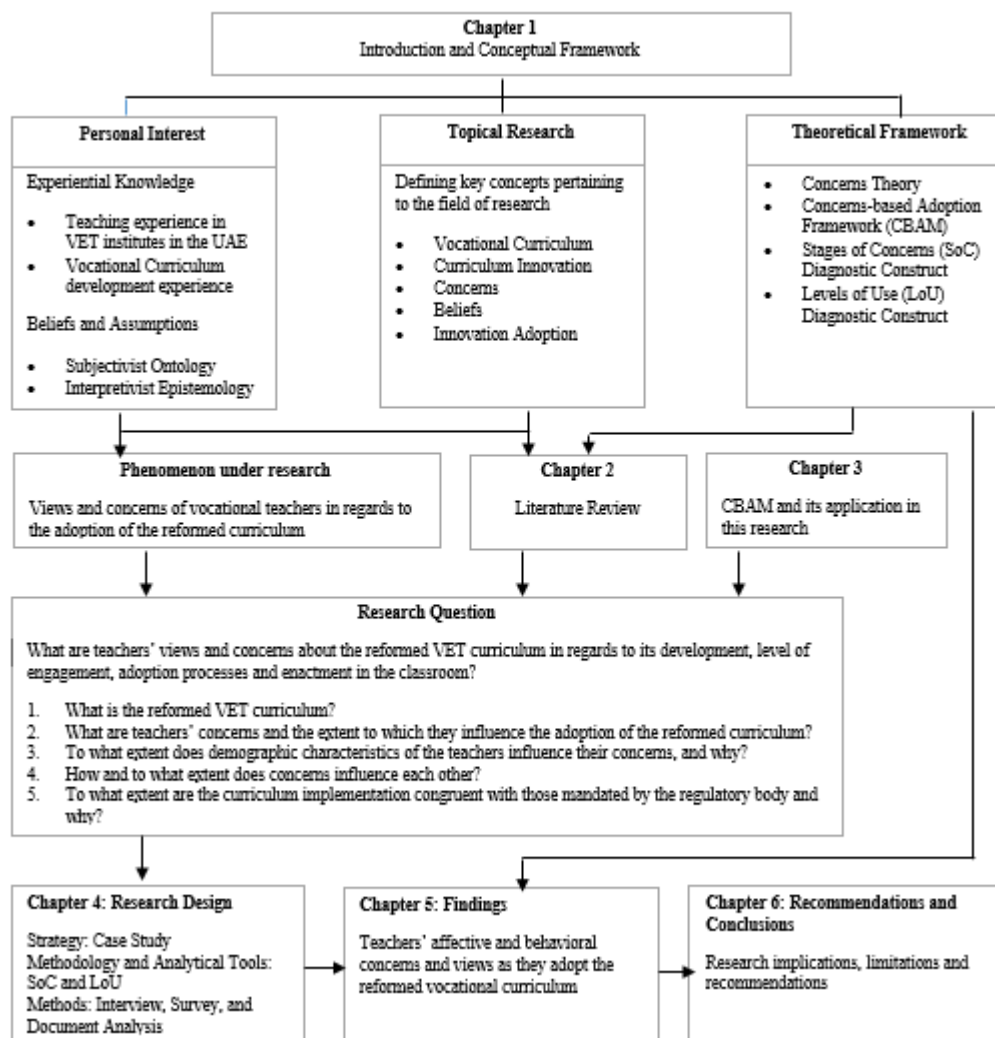
Figure 1. 1 The roadmap of the research

1.5.1 Chapter One: Introduction

Chapter one sets the research context. It provides an overview of how the research is being conceptualized and the rationale for carrying out this research. Also it sets the background of the

research, and defines the problem statement. The main research questions and sub-questions are stated in this chapter, as listed above.

1.5.2 Chapter Two: Literature Review

Chapter two provides an overview of extended research on the topic by reviewing relevant literature, which further elaborates how the research was conceptualized. This chapter outlines the theoretical framework of this research, the Concerns-Based Adoption Model (CBAM) and extends its constructs on how it guided this research. The literature review covers theoretical conceptions and contextual relevance of curriculum, vocational curriculum, curriculum innovation, curriculum adoption, teacher concerns, views, and perception to this research. This chapter draws findings of previous studies focusing on vocational education, vocational curriculum, teacher concerns and various educational innovation and adoption models.

1.5.3 Chapter Three: Methodology

This chapter outlines the various choices adopted for designing the research. It outlines the research design, population, sample, instrumentation, data collection methods, validity and reliability, and ethical considerations of this research. Chapter 4 also explains the research design with details of the ontological and epistemological stance, the rationale for selecting CBAM as a methodological and analytical tool, range of methods used and reasoning for using case study as a research strategy.

1.5.4 Chapter Four: The CBAM and its application in this research

Chapter four details the core concepts of CBAM and how its diagnostic constructs are applied in this research. This chapter explores the theoretical underpinnings of the CBAM and reviews a range

of studies that have used CBAM to study the adoption behaviour and attitudes of teachers. Finally, the chapter discusses in detail about how the constructs of the CBAM is contextualized within the remit of this research.

1.5.5 Chapter Five: Data Analysis and Findings

Chapter five presents the research findings, which discusses how teachers concerns have emerged through the two diagnostic tools of the CBAM - SoC and LoU. The stages of concerns scores derived from the SoC-Questionnaire-based survey of teachers are mapped to a pre-defined scoring system to calculate the stage-level percentile score, and subsequently to determine the relative intensity at each of the seven stages of concerns. On the other hand, the LoU ratings of are captured to measure the extent to which teachers adopt the curriculum innovation.

1.5.6 Chapter Six: Research contribution and conclusions

The final part of the thesis summarizes my research findings and establishes the notable contributions made by the research. This chapter concludes the research by examining the research findings to ensure whether the research questions are addressed; establishes the contributions made by the research in light of the existing literature; reflects on the strengths and weaknesses of the research; and recognizes opportunities for further research.

Chapter Two: Literature Review

The purpose of this research is to investigate the views and concerns of vocational teachers in the UAE as they adopt and implement the reformed vocational curriculum, based on the newly reformed Qualification Framework for the Emirates or QfE. The previous chapter provides an overall outline of the research, providing a peripheral view of the research roadmap and its organization. As discussed in the previous chapter, teachers' views and concerns are explored based on the foundations of concern theory, and further within the framework and diagnostic tools of the Concerns Based Adoption Model (CBAM). At a broader level, the CBAM facilitates the enquiry process by analyzing teachers' affective and behavioral responses to the reformed curriculum, as they engage in the adoption process.

Literature review is a highly critical activity to research, to understand what has already been done on the topic under study and what the key issues are (Hart 2014). Without a comprehensive and thorough review of the literature, one would not be able to demonstrate expertise (Ravitch and Riggan 2017) or acquire an in-depth understanding of the topic under study. As Creswell (2014) asserts, literature review facilitates and guides the reader to establish a connection with other studies that are closely related to the one being undertaken. For the purpose of this research, a range of literature was reviewed and organized to produce a literature-map, as suggested by Creswell (2014), which enabled the researcher to understand how the proposed research adds to, extends, or replicates research already completed.

This chapter is organized into five sections. The first section discusses both the historical and current vocational education landscape of the UAE, with a special focus on the reformed VET

qualifications, drawn from a variety of local and international discourses on education in general and VET in particular. The second section of this chapter discusses major advancements in the development of international vocational qualifications and various adaptations of the vocational qualifications ranging from the National Vocational Qualifications (NVQs), the Qualification and the Credit Framework (QCF), Work-based Learning and Workplace Learning. The third section presents and discusses the role of teachers in curriculum development and their adoption patterns, challenges and responses. The fourth section describes the conceptual framework of the research, which conceptualizes the key aspects of training, education, curriculum, adoption, concerns, perceptions, beliefs, vocational education, and vocational curriculum and how they are posited in this research. Finally, the last section advances the theoretical framework of this research, which reviews and discusses variety of conceptualized change theories, innovation adoption models, teacher concerns, and in particular, the Concerns-Based Adoption Model (CBAM).

2.1 Vocational Education

2.1.1 A Global Perspective

It is a challenging endeavor chasing the genesis of vocational education, which in a broader sense is as historical as the human civilization itself (Odgen 1990). The notion of occupation as an integrated construct, or 'constitutive elements' of human existence (Pätzold and Wahle 2008) is an obvious reflection of what is commonly referred to as the "inseparable linkage" between vocational knowledge and historical trade. This concomitance of vocational education with the industry has heavily influenced educational discourses, to adopt an interdisciplinary model that goes beyond core systems research, and methodological teaching research (Lauterbach 2008). However, as a

researcher, this multidisciplinary perspective has profoundly informed the understanding of various aspects of vocational education in general and VET teachers in particular, the concerns of the latter being the primary focus of this research.

During the nineteenth century, as a response to both the industrial and social revolutions, a range of VET systems were established across Europe, with Germany taking an active role in vocational training by formulating a legal framework to support its mission (Billet 2011). Since then, VET systems have undergone tremendous reforms and continue to evolve as a responsive model to address the ever-turbulent labor market and economic dynamics. Today, VET systems are an integral part of education systems across the globe, despite all its challenges and concerns regarding its social identity, governance and provisioning models (Braithwaite 2018, CEDEFOP 2015, Clayton and Harris 2018, Gatt & Faurschou 2016, Pilz et al. 2018, Remington 2018).

Let us now take a look at conceptions of vocation, education and training and how they are identified by the discourse community. The term "vocation" is derived from the Latin word 'vocare' which refers to a variety of things, such as a calling, a direction of life activities (1916 Dewey), invitation to a particular way of life (Hansen 1994), a paid employment and a pursuit to which an individual is "called" and engages in intentionally (Billet 2011), to list a few. Early conceptions of VET appear to have perceived vocational education mostly through the lenses of social theories, mainly as a monitoring and controlling mechanism aimed at engaging the youth (O'Reilly 1914), so as to keep the *troublesome boys'* busy and transform them to 'skillful and *helpful boys'* (Cooley and Snedden 1913). However, further studies informed by both social and education theory perspectives have advanced VET to various dimensions. Many of its proponents have observed VET as a social transformation mechanism (Cooley and Snedden 1913, 1916

Dewey, 2011 Billet). At the same time, government entities mainly viewed VET systems as a remediation approach to pacify labor unrest (O'Reilly 1914, Advisory council 1970, Skilbeck 1994, Billet 2011, Masdonati et al. 2017). On the other hand, education policy makers and industry regulators posited VET as a system to produce competent workers and to support life-long learning and professional growth (Wenström et al. 2018).

Over the years, there is a considerable shift in VET literature, from a discourse-base predominantly informed by theories concerning society, citizenship, classes and codes (Cooley and Snedden 1913, O'Reilly 1914, Dewey 1916) to a more didactically oriented constructs (Skilbeck 1994, Billet 2011, Masdonati et al. 2017). These transformation initiatives and reforms have brought significant changes to the entire landscape including the language and provisioning of vocational education, giving a different meaning to terms such as knowledge, skills, competence, providers, and delivery. 'Competence' became a term associated with behavioral measures, training institutes became 'providers', and teaching became 'delivery' (Billet 2011).

2.1.2 Vocational Education in the UAE

The history of vocational education in the UAE dates back to the 1930s. Vocational education, was then referred to as "technical education" (Rugh 2007). This was reinstated in 1958, when the first technical school was opened in Sharjah, by the Development Council under the British administration during the colonial rule (UNESCO 1987). Post-independence, in 1971, UAE established a dedicated department for technical education within the then Federal Ministry of Education in Dubai (UNESCO 1987), which is currently being restructured as part of various education reforms. Further during the later years of 1970s, UAE established a four-tier education

system that comprises early childhood, general education, vocational education and higher education (Abed and Hellyer 2001). Since then, UAE witnessed a phenomenal and instrumental growth in the field of education and training by establishing a range of technical education institutions to enhance the skills and competencies of the national workforce (Wilkins 2002).A number of organizations were established to promote VET in the UAE (Warner and Burton 2017, NQA 2017, MoE 2019, ACTVET 2019). This includes the first tertiary institution (UAE University) in 1976, Higher Colleges of Technology (HCT) in 1988, Centre of Excellence for Applied Research and Training (CERT) in 1998, Knowledge and Human Development Authority (KHDA) in 2006, Abu Dhabi Vocational Education and Training Institute (ADVETI) in 2007, ACTVET in 2010, and NQA and VETAC in 2010 (NQA 2017).

Despite all the above-mentioned advancements, the education sector in the UAE lacked guidance and motivation, competitive salary, and necessary pedagogical qualification in addition to technical competence and industrial exposure (UNESCO 1987). Interestingly, these limitations shares a greater level of significance in current times. Uncertainties concerning the responsibilities and motivation of teachers are still prevalent across all streams of education in the UAE, (Alwan 2010, Muysken and Nour 2005, Troudi and Thorne 2011, Warner 2018, World Economic Forum 2017) demanding a paradigm shift in the formulation of education policies and implementations of educational innovations. The report (UNESCO 1987) recommends the need for guidance and motivation, competitive salary, and necessary pedagogical qualification in addition to technical competence and industrial exposure. In 2019, when this research is being carried out, educational reformers tempts to often overlook these factors, shifting the priority to other "important" areas of change.

There appears to be little or no studies that attempts to capture the views of vocational teachers in the UAE, particularly, their role in the development and implementation of vocational qualifications. However, a number of other studies that explores or investigates various other aspects of UAE's vocational education. These studies attempt to explore aspects of human resource development (Wilkins 2002), change processes and quality assurance systems (Muysken and Nour 2005), technological readiness (Ahmed and Alfaki 2013), employment policy (Barnett et al. 2014), VET program outcomes, (Al Hammadi 2016), technology usage (Pillai 2017), and institutional contribution (Al Hammadi 2018). On the other hand, a significant number of studies across the globe have discussed specific aspects of national vocational qualifications, role of vocational education teachers, curriculum innovation in VET, adoption of innovation and innovation-related concerns.

2.1.3 Vocational Qualifications in the UAE

The Qualification Framework for Emirates (QF*E*mirates) is an innovation by itself; setting new operational demands for VET stakeholders in the UAE in general and a "transformation-phase" for teachers in particular. With an emphasis on the new occupation-standard-based curriculum, the researcher reviewed various aspects of curriculum innovation, and how teachers adopt these changes. Recent reforms in UAE's vocational education landscape are an attempt to address the socio-economic challenges at local, regional and international levels. In response to the greater demands set by the new industry revolutions such as industry 4.0, and twenty-first century skills, UAE, is instrumental in devising policies and reorganizing existing educational models to address the occupational competency demands (Masdonati 2017, Bolli et al. 2018, Small et al. 2018, Choy 2018, Avis 2018, UNEVOC 2019). Despite its superior overall competitiveness rankings (IMD

2018, World Economic Forum 2017), studies also attempt to highlight considerable levels of skills-shortage among UAE's graduates (EY 2015, Barnett et al. 2015, World Economic Forum 2017, Swan 2017). The establishment of the NQA in 2010 could be viewed as UAE's response strategy to '*cope up with the dramatic*' economic and educational changes in general and address the skills-shortage challenge in particular (NQA 2019). This response mechanism has informed the reorganization decisions pertaining to the structure and provisioning models of UAE's VET systems (NQA 2017), as part of a standard-based educational reform. Prior to these educational reforms (or the pre-NOSS-phase), vocational qualifications lacked the 'industry' or 'occupational' component, built on a curriculum that is more academic or theoretical and less 'applied' from a subject-matter perspective. As a result, industry-driven qualification development practices did not appear to align themselves with the occupational standards. However, in recent years, increasing importance has been given to the development of national vocational qualification, as it is sensitive to the changing needs and occupational requirements contextually specific to the UAE market (NQA 2017). Even during the pre-NOSS-phase, curriculum was centrally developed, prescriptive in nature, and drew from a model that discouraged teacher-consultation or engagement at developmental or implementation levels. Currently, national vocational qualifications are developed as per the policies and procedural guidelines (Figure 2.1) of the VETAC (NQA 2014). The key structure that manages the development of Q+NOSS model is Recognized National Development Committee (RNDC) or Sector Advisory Committees (SACs), who are dedicated industry sectors, comprising of sector representatives and subject-matter experts (NQA 2014). However, NQA has not mandated any policies that guide the selection of stakeholders to be included in the RNDC or SAC. At a broader level, NQA-recommended stakeholders include

representatives of employee and community organizations, employer organizations, professional

associations, government agencies, regulatory bodies, and education providers (NQA 2014).

| Step 1 Research | → | Step 2 Q+NOSS Development | → | Step 3 Industry Review | → | Step 4 Industry Validation | → | Step 5 VETAC Endorsement |

Figure 2. 1 Q+NOSS Development and Endorsement Stages

One of the key deliverables of the Q+NOSS development process is the Q+NOSS (Figure 2.2) or

the Qualifications based on National Occupational Skills Standards. These occupational standards

describe the set of competencies required to perform a certain job and specify the knowledge, skills

and competencies at each level of the qualification (Ahmed & Bodner 2017).
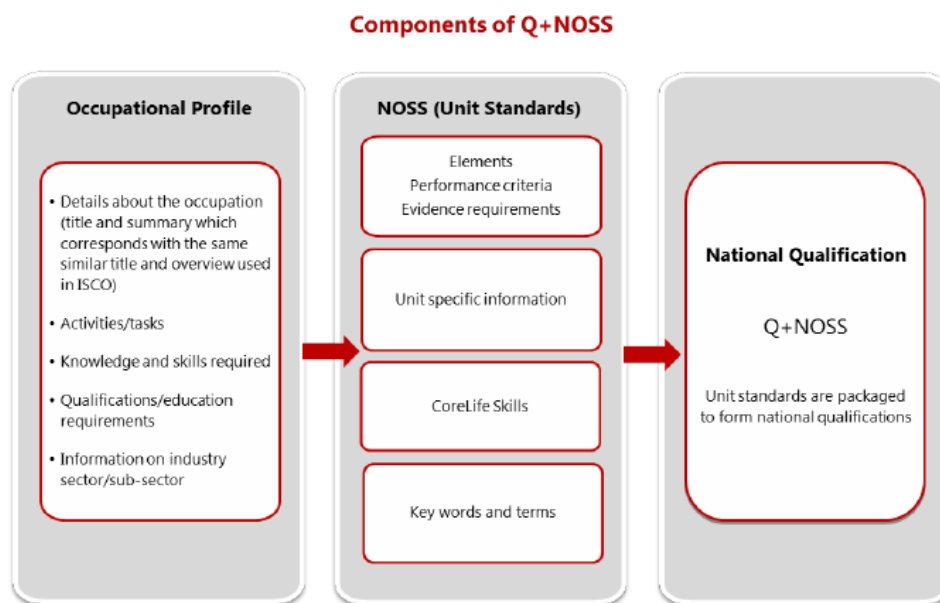
Figure 2. 2 Components of Q+NOSS (adapted from NQA 2014)

The QFEmirates identifies three major components. These are 1) the qualification level, b) the

range of learning outcomes (LOs) at each level, and c) the qualification profile. Qualification levels

are derived from the QFEmirates level descriptors, where each level represents an order of relative difficulty, complexity and depth. Ten levels (Figure 2.3) have been adopted for QFEmirates, with separate qualification titles for Higher Education (HE), Vocational Education and Training (VET), and General Education (GE). Within the nine levels of VET qualifications, this research explores the adoption of qualifications (Q+NOSS) offered across level three (certificate) to level six (advanced diploma).

Level	Generic Nomenclature	Principal Qualification titles used in the QFEmirates (each with its own profile)		
		Vocational Education and Training (VET)	Higher Education (HE)	General Education (G 12 – GE)
10	Doctoral Degree	—	Doctoral	—
9	Master Degree	Applied Master	Master	—
8	Graduate Diploma	Applied Graduate Diploma	Postgraduate Diploma	—
7	Bachelor Degree	Applied Bachelor	Bachelor	—
6	Diploma*	Advanced Diploma	Higher Diploma	—
5	Diploma*/ Associate Degree	Diploma	Associate Degree	—
4	Certificate*	Certificate 4	—	Secondary School Certificate (G 12)
3	Certificate*	Certificate 3	—	TBA
2	Certificate*	Certificate 2	—	—
1	Certificate*	Certificate 1	—	—

Figure 2. 3 UAE Qualification Levels (adapted from NQA 2014)

However, the development model adopted by the regulatory authorities do not encourage teacher-participation or contribution, leading to a centrally determined intended curriculum, which according to Brophy (1983) is the '*prescriptions of the absentee curriculum developers*'.

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Vocational qualifications are awarded to learners who have achieved occupational competence, and who have demonstrated through classroom-based and or realistic work environment, that they can perform in employment (Thompson 1989, Markowitsch & Plaimauer 2009, Tūtlys & Spöttl, 2017). These occupational competence are derived from occupational skills standards which are translated to learning outcomes (LOs) and performance criteria (PCs), packages under what is called as the units of competence (Gekara & Snell 2017, Tūtlys & Spöttl, 2017). A number of units are grouped to generate appropriate qualifications, which are separately assessed, certified and scaffolded over a specific duration of time (Thompson 1989, Gekara & Snell 2017, Tūtlys & Spöttl, 2017). At a broader level, this process of defining curriculum objectives is the translation of broader education aims to specific and concrete practical programmes for the students to learn or as the formulation of rational, coherent schemes for teaching (Skilbeck 1971, Tūtlys & Spöttl, 2017). This resonates with McKernan (2008), who argues that curriculum design should be viewed from a broader perspective and "not simply a procedural or a technical response to problem solving".

2.2 Reforms in Vocational Education and Training

The VET sector has been undergoing tremendous reforms to cope up with the ever-changing world of work. In addition, VET systems across the globe are being subject to various conceptual and structural transformations. These transformations include taking different titles, operational representations and provisioning models (such apprenticeship systems, workplace education, work-based education, competency-based training, and project-based learning to name a few). Technological and social changes have continuously influenced countries and regulators, urging the policy makers and providers alike to become more responsive and creative in preparing people to meet the new-age occupational demands (Clayton & Harris 2018). In England, significant

reforms include 1) the withdrawal of the National Vocational Qualification (NVQ) and the Qualification and Credit Framework (QCF) in 2015 and the introduction of the newly reformed Regulatory Qualification Framework (RQF) and 2) the introduction of the Technical and Further Education Act 2017 (Clayton & Harris 2018). These reforms intents to ensure that technical education provides everyone with the skills and opportunities they need to succeed and gain skilled employment on a long-term basis. (Martin et al 2018). At the heart of all these reforms lies the occupational competence, which has been subject to rigorous modifications, both across breadth and depth. This is mainly because how it has been perceived as a common language by both the world of labor market and the world of education and training (Markowitsch & Plaimauer 2009). Irrespective of the title or its provisioning model, the vocational knowledge, packaged within the vocational qualifications (comprising of knowledge, skills and competence) is what is being tried and tested over decades to ensure its compliance in meeting industry requirements. These vocational qualifications in most countries form the inevitable drivers of VET reforms, promoting inclusion, access, progression routes, putting VET in a lifelong perspective (Clayton & Harris 2018). Seventy plus countries around the world, including the UAE is developing vocational qualifications, however, there are few reliable studies on their impact (Wolf 2009, Chakroun 2010, Locke & Maton 2018). The effectiveness and sustainability of vocational qualifications depends on a number of factors ranging from periodic policy review, vocational institution leadership, teacher training, and community engagement and social partnership (Chakroun 2010). Chakroun (2010) argues that a "social, context-specific" perspective is more relevant than a technical perspective in regards to the development and management of vocational qualifications.

Globally, vocational qualifications suffer from a wide range of criticisms, which includes significant issues related to a) weak curriculum content (Bathmaker 2013, Shackleton and Walsh 1995, Swailes 1997, Hordern 2014, Williams and Yeomans 1994), b) policy-to-practice gap (Billet 1995, Williams and Yeomans 1994), and c) lack of teachers and stakeholder consultation (Allais 2010, Billet 1995, Waymark's 1997, Wheelan and Carter 2001). From a broader policy perspective, there have been criticisms that argue vocational education has been reduced to mere acquisition of skills (Bathmaker 2013). Within the UK context, Unwin (2004) argues that VET has been reduced to *a thin gruel of competence-based checklists* from the status of being a *well-respected vocational qualification*, once upon a time. Cornford (1999) strongly argues that the VET curriculum development policies are in most cases found to be either vaguely written or not available. Curriculum implementation policies, procedures and processes are not always appropriately under focus and it could be seen that implementation issues are being ignored (Cornford 1999). In a major study, Hordern (2014) maintains that the reorientation of VET over the last 30 years towards skills and competency outcomes has emptied out the knowledge content from vocational programmes of study.

The gap between policy intentions and actual practice has hindered the realization of the NVQs. Billet (1995) argues that top-down reforms in vocational education, dictate the development of centrally-determined curriculum, wherein the proponents strongly assumes that the intentions of the curriculum will be interpreted, implemented and adopted into practice with fidelity and consistency throughout the learning journey. A number of other gaps with the NVQs relate to excessive bureaucracy, implementation challenges, and confusion about the meaning of competence, under-emphasis of knowledge and understanding, and unreliable assessment

standards Swailes (1997). For instance, Waymark's (1997) study, which monitored the implementation of NVQ Level 3 Business Administration in the UK between 1990 and 1995, discusses stakeholder differences in regards to inclusion of certain kinds of skills and competencies to the qualification. Matlay (1999) recommends a wider consultation strategy needs to be in place with industry representatives including trade union entities, employment agencies and recruitment groups for NVQs to achieve its implementation objectives.

A number of factors are being cited as reasons for NVQ implementation failure in the UK. This includes a) insufficient attention to policy implementation, b) overly reliance on experimental models, c) insufficient supervision of NVQ implementation, d) poorly managed stakeholder engagement models, e) employer representatives' lack of capability to contribute to qualification development activities, and f) failure to capture employer viewpoint of the qualification due to inappropriate stakeholder representation (Williams 1999).

Vilensky and Fraser (1977) in their study of evaluating a teacher-training program involving sixty-two teachers and thirty-eight student teachers found significant gaps between curriculum intentions and actual program performance. Patterson and Czajkowski (1979) discusses about curriculum change and the challenges of curriculum implementation - between curriculum intentions and what happens in practice. The authors cite the lack of attention to curriculum implementation and refer to implementation as the "neglected phase in curriculum change". Patterson and Czajkowski (1979) defines curriculum change as a "conscious and deliberate attempt" to bring about change in the curriculum. Swailes and Roodhouse (2004) in their study identified a number of issues that were perceived as hindrances to successful NVQ implementation. Perception of NVQs by the industry and employers in particular as an "inferior" track of education compared to the regular academic

track is one of the major findings (Swailes and Roodhouse 2004). There is no "best-practice approach" to the implementation of NQFs, as Allais (2010) argues that NQFs do not provide quick fixes to the complex problems such an unemployment and skills-shortage. Research discourses speak less of NQF success stories and research has not substantially contributed to any evidence that demonstrates enhanced communication between VET systems and labour markets (Allais 2010). Advocates of change suggest improving the parity of esteem for TVET and workplace-based qualification to upgrade the image and appeal for VET qualifications. (Allais 2010). A poorly developed curriculum would probably result in what Avis (1993) refers to as "low-skilled equilibrium", where the majority of enterprises staffed by poorly trained managers and workers who produce low quality goods and services. Therefore, it is very critical to ensure that the initiation phase of a curriculum development engages the right mix of stakeholders, follows a collaborative approach by integrating both industry experts and vocational educators in the development process.

2.3 Teachers' Role in Curriculum Development

"First, that we should take seriously the mass of evidence showing that what really matters is teachers, and stop overestimating what can be achieved through a written qualification outline". (Wolf 2011)

"Second, that if an excellent teacher has a strong preference for one qualification over another that should be respected". (Wolf 2011)

"And third, that no single centrally defined option is every likely to suit everyone" (Wolf 2011).

One of the key findings of most of the curriculum studies is an aspect of teacher-neglect or disengagement in the development process, and subsequent policy-to-practice gaps (Czajkowski

1979, Williams and Yeomans 1994, Billet 1995, Thompson 1998, Swailes 1997, Heikkinen 1997, Wheelan and Carter 2001, Wolf 2011). Literature on curriculum development also emphasizes the need of a robust collaborative model that engages teachers and other key stakeholders, as critical for the success of curriculum implementation initiatives. Curriculum design decisions, according to McKernan (2008), are influenced by the significance of accumulated situational understanding of teachers. Studies have stressed the importance of an effective communication model that engages stakeholders of any curriculum implementation initiative. As a strong proponent of teacher-involved curriculum development, Stenhouse (1975) argued that it was the task of the curriculum developer to represent knowledge in a form that "by virtue of their meaningfulness curricula are not simply instructional means to improve teaching but are expressions of ideas to improve teachers". Stenhouse maintains that curricula should guide and support teachers to reconstruct their views of knowledge and enhance the pedagogical relationship with students in and outside the classroom.

Patterson and Czajkowski (1979) emphasize the significance of shared values and its positive impact in the implementation of a curriculum and cites communication gap between teachers and curriculum developers as the major reason for implementation failure. Teacher consent in regards to curriculum implementation and rich conceptual understanding of the innovation is critical to its success (Guskey 1986, Ingvarson 1987).

Valuing teacher involvement and providing adequate professional development support to teachers play a vital role in adopting an educational innovation (Cornford 1999, Niven et al. 1998, Kimpston and Anderson 1988). Cornford (1999) recommends that VET teachers to be exposed to sufficient educational psychology, particularly pertaining to the transfer of lifelong learning. Winning (2000)

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argues that competency-based training confines teachers within the boundaries of prescriptions of discrete learning outcomes, eventually challenging teachers to teach a real person in real, perhaps unpredicted situation. Skilbeck's (1984) maintains that teachers do not have historical rights to exercise control over the curricula; however, at the same time, the significance of involving teachers in the development process cannot be dismissed as they play a crucial role in ensuring that the intentions of innovations meet a desirable degree of fidelity (Fullan, 1985, McLaughlin & Marsh 1978). Individual teachers enjoy their 'privacy of practice' within their classroom and make most curriculum decisions within educational programmes; this includes the degree by which they see as worthwhile or even credible what is included within curriculum documentation (Brady 1995). In a separate study that reviews the Australian TAFE and associated training packages, Wheelan and Carter (2001) highlight the deskilling of vocational education teachers, as they are "required to teach to outcomes that they have no role in formulating". They further contest the existing teacher engagement approach that ignores teachers' professional and subject matter expertise, and enforce teachers to assess "tightly defined and often prescriptive and narrowly focused competencies". When it comes to standard-based curriculum reforms and educational changes, teachers are sidelined and in most cases 'taken-for-granted'. The socio-cultural aspect of change is still not considered as something significant in educational change management processes. Any strategy of change must focus on changing individuals and the culture or system within which they work (Fullan 2006). Fullan further maintains that -"if teachers are going to develop the skills and competencies of knowledge-creation, teachers need experience themselves in building professional knowledge." Another critical aspect is the weakened connection of teachers with the work-life, identifying them more as general teachers than vocational educators (Heikkinen 1997). This is of significant importance to vocational teachers in the UAE as there are

no strict policy regimes that mandate the requirement for teachers to possess professional industry experience prior to their role as a vocational teacher. In such cases, teachers come from diverse backgrounds with little or no exposure to any particular occupational domain, possessing academic degrees in a specialized discipline, and undertake the role of a vocational teacher. This is another challenge and is a result of a lack of strict governance policy in general and recruitment policy in particular. This could be addressed only by developing and implementing a coherent policy that promotes teachers experience and defining themselves in relation to work (Heikkinen (1997). Heikkinen (1997) further posits that the top-down approach to implementing reforms in vocational education results in a "cultural gap" between the new technocratic staff in administration and teachers. Vocational education researchers propose new frameworks and models that guide the identification and separation of roles in curriculum development process. These models recommend a collaborative approach that engages both industry experts specialized in a specific occupation to define the outcomes, and those in education, be it teachers or subject matter experts, to decide the type of learning required on formal courses to lead to those outcomes (Laird and Stevenson 1992, Thompson 1988, Billet 1995). Billet (1995) proposes a collaborative and teacher-involved curriculum development model, and argues that the settings and characteristics of individuals and their own contextualized community of practice should inform successful curriculum development initiatives.

2.4 Conceptual Framework

The conceptual framework is a critical element of a disciplined enquiry (Antonenko 2014), which is a theory driven (Miles, Huberman, & Saldaña 2014), and a combination of experiential knowledge, prior theory and research (Maxwell 2013). However, the "all-encompassing" and

"overarching" traits or characteristics of a conceptual framework are also attributed to the definition of a "theoretical framework", across a wide range of literature, which makes the distinction more confusing. The discourse community in general lacks a shared understanding of a conceptual framework, as it is also interchangeably used, often in literature to refer to the theoretical framework of a study. Merriam (2009) identifies theoretical framework as an "underlying structure, the scaffolding or frame" of a study. Creswell (2014) uses the term "theoretical lens or perspective" as something that provides an "overall orienting lens", which shapes every other aspect of the study.

 From a relatively different standpoint, Ravitch & Riggan (2017) posits conceptual framework as an overarching argument "about why the topic one wishes to study matters, and why the means proposed to study it are appropriate and rigorous". Personally, the researcher found these conceptions as more convincing as they explore and present it from a pure rationalization point of view. Ravitch & Riggan's model organizes conceptual framework as an all-encompassing structure, wherein the theoretical framework is a substructure. This research concur with the definition of conceptual framework proposed by Ravitch & Riggan (2017), which identifies conceptual model as the "overarching argument for the work" comprising of four elements namely a) personal interests and goals (of the researcher), b) identity and personality (of the researcher), c) topical research, and d) the theoretical framework that underpins the study. The orientation towards the conceptual framework model proposed by Ravitch & Riggan is only at a structural level, and have no intentions to undermine the significance and relevance of a theoretical framework, as it is what allows the researchers to visualize and have a deeper understanding of the phenomena under study (Anfara & Mertz 2015). Ravich and Riggan's argument-oriented conception of the conceptual framework is further asserted by Miles, Huberman and Saldana (Miles, Huberman, &

Saldaña 2014) who maintains that a conceptual framework should graphically or in narrative form, explain the "main things" of the study and the relationship among them. Here the "main things" refer to the key factors, variables or constructs that informs the study. For a more detailed illustration of the conceptual framework, the researcher chose to first graphically outline my conceptual framework (Figure 2.3), followed by an explanation of the key elements -personal interests and identity, topical research, and theoretical framework - based on the model proposed by Ravich and Riggan.

Vocational education has been perceived as a *great platform* (The Government of Abu Dhabi 2018) for UAE nationals to build their occupational skills and to address workplace demands (ACTVET 2019). The current VET landscape of the UAE is rich in terms of its infrastructure, permeated by a variety of organizations, training institutes and national initiatives (MoE 2018), with a goal to build occupational competencies and increase national workforce representation (ACTVET 2019) in both the government and private sectors. These advancements demonstrate UAE's commitment to enhance the quality of vocational education in the country. In addition to these progressive developments in infrastructure and governance, UAE has introduced transformation programs and innovative systems to accelerate teachers' skills and competencies to align with international standards (NQA 2016, MoE 2018).

The NQA (2016) emphasize the need for best practices for teaching in an effort towards creating a first rate education system. However, all these ambitious reforms are being enforced on teachers (Thorne 2011) whose participation in educational development projects are in most cases overlooked. From a policy perspective, and personal experience, VET teacher are not encouraged to participate in the decision-making process concerning educational innovations or changes that

would have a direct impact on their teaching and assessment practices. While a majority of these initiatives focuses on process and infrastructure improvement, very little is being directed towards capturing the perceptions, beliefs and feelings of teachers. In the case of VET, with its underpinning linkage with the dynamics of the industry, changes are more frequent at regulatory, governance and operational levels, resulting in a plethora of reforms, which includes but not limited to changes in curriculum, teaching methods, assessment techniques, and work placement engagements. These changes arise out of national priorities and regulatory imperatives. These changes are planned and directed without considering the local context (Keskula et al 2012, Akkary 2014) and the actors - the individuals or users, particularly the teachers who are the key agents of educational change. Teachers are perceived as change agents who actively advocates for and promotes the use of educational innovation to learners (Taylor et al 2018). Policy makers, change managers, and administrations often attach importance to the problem definition (Fullan 2016) and appears to overlook individual's concerns, while they embark on a change journey. This often results in implementation letdowns and user's averseness to innovations. As the UAE is currently redefining the provisions of its educational systems, and in the wake of these reforms, it is essential to have an understanding of how academicians, educators or trainers embrace these reforms (Troudi & Alwan 2010, Thorne 2011). In the realm of innovation and policy making, the recent curricular reforms in the VET sector tends to suffer from the neglect of the "*teacher agency*" factor, which is defined as "*the capacity of teachers to act within the context of problematic situations*" (Priestley et al 2012).

2.4.1 Curriculum innovation

Educational innovation demands change in teaching premises, thinking and classroom practice (Blenkin et al. 1992), which appears to be neglected by policy makers and regulators while implementing curricular reforms. This is mainly due to the lack of understanding or sidelining of the concerns of teachers who are the actual agents of change. Fullan (2016) underlines and posits this neglect as the reason for failures, which he refers to as the '*spectacular lack of successes* of reforms. Within the UAE context, strategies to capture teacher concerns in the UAE are not matured to the level of informing UAE-focused research discourses. There is a dearth of published literature on vocational curriculum change in the UAE and the current research is an attempt to redress this.

2.4.2 Teacher Concerns

The term 'concern' has been used in various context of education research. Berg (2002) conceptualized concern as '*the questions, uncertainties, and possible resistance that teachers may have in response to new situations and/or changing demands*'. Hord et al (2014) maintains concerns as '*feelings, thoughts, and reaction individuals have about a new program or innovation that touches their lives'*. Roger & Shoemaker (1971), define innovation as '*an idea, practice or object perceived as new by an individual*'. Within the context of this research, I would rather identify concerns as *innovation concerns* as they refer to a composite set of emotions and actions (George et al. 2013, Hord et al 2014) in response to perceived changes, which are new to the teachers, or users of the innovation. In responding to innovations, Fuller (1969) dichotomized teachers concerns - one about the *benefit to self* and the other about the *benefit to pupils*. In other words, its looks at the *personal* and the *impact* dimension of a change. As a teacher, the researcher

perceives that Fuller's categorization captures the emotional uncertainties of a considerable number of educators while they adopt an innovation. The researcher is interested in innovation concerns of teachers, both from an affective and behavioral perspective. This interest sits on the rationale that, for a curriculum innovation to be successful, it must be realized in the classroom and this comes through the beliefs and actions of the teacher (Christou et al. 2014). Hence, the research attempts to have a deeper insight of the feelings, uncertainties, challenges and experiences of teachers when they adopt a new curriculum framework as part of the educational reforms. The researcher also investigate the extent to which teachers adopt and implement the curriculum, particularly focusing their varying levels of adoption.

2.4.3 Vocational curriculum Conceptions

Conceptions and theories emerging from various aspects of vocational education are discussed and explored by a vast amount of research studies at various levels of construction, practice, evaluation, and other manifestations. This research strongly contests the constrained conceptualization of vocational curriculum restricting it to the confinement of educational institutions.

As vocational education addresses, imperatives posed by the social, cultural, pedagogical, and economic sectors, a broader perspective of the vocational curriculum is found to be appropriate. Billet (2011) proposes a basis for what constitutes a curriculum for vocational education by identifying vocational curriculum as a comprehensive framework comprising of three type of curriculum – intended, enacted and experienced curriculum (Glatthorn 1987 cited in Billet 2011, Print 1993 cited in Billet 2011). This conception to a greater degree is congruent with CEDEFOP (2015) definition that advances curriculum as part of a broader framework - as a body of knowledge or a set of skills, a plan for teaching and learning, an agreed standard or contract, and the experience

of the learner over time. Finch and Crunkilton (1999) further strengthens the comprehensiveness of the vocational curriculum underlining its distinguishable characteristics that include process (in-school) and product orientations (workplace), justification (occupational needs), focus (range of skills, attitude and values), in-school success standards (learning expectations), out-of-school success standards (workplace expectations), school-community relationships, federal involvement (regulation and governance), responsiveness, logistics and expense.

Intended or written curriculum, also referred to as ideal curriculum (Glatthorn 2000, Print 1993 cited in Billett 2011) is the curriculum that appears in state standards (Beauchamp 1975 cited in Moore 2004, Lewis and Miel 1978 cited in Moore 2004, Oliver 1978 cited in Moore 2004) which are developed on the learning premise, at an ideological domain (Ennis 1986) which provides a framework for planning learning experiences (CEDEFOP 2015).

Enacted Curriculum refers to the available or taught curriculum used by the teacher to deliver their lessons (Glatthorn 2000, Print 1993 cited in Billet 2011) usually in the form of a syllabus or a workplace-tasks document developed at a level what Ennis (1986) refers to as a formal domain. Vocational teacher's encounter and perception of the intended curriculum are often informed by their values, experiential background, and assessment of students' interests and abilities (Ennis 1986).

The experienced curriculum is composed of learner's experience both in the classroom and in the workplace. However, Glatthorn's curriculum conceptions are constrained to the classroom experiences – one of the limitations to perceiving vocational curriculum as appropriately identified by Eichhorst et.al (2012) citing that – "curriculum is too narrowly focused on subject-specific skills and competencies." Moore (2004) strongly contests this confinement and views that "almost every conception of curriculum reported in these mainstream traditional texts implicitly or explicitly

restrict the use of the term to the context of schools and advocates the conception of an "experienced curriculum" as a naturally occurring curriculum of experience, one which professional educators both in and out of schools, need to understand."

2.4.4 Curriculum Development Practices in Vocational Education

Having discussed the comprehensive approach to curriculum in section 2.3.2 and 2.3.3, this research would look into various approaches that informs the curriculum development practices today. Akin to the constrained conception of vocational curriculum, the development aspects discussed in most of the mainstream literature are also constrained within the boundaries of the school. CEDEFOP (2012) refers curriculum development as a set of processes that facilitate the generation and implementation of curriculum documents. Taba (1962 cited in Schnellert 1993) interconnects theory and practice within the context of curriculum development and states the need to "look at the path" where the curriculum is leading referring to its actual practice. The disparity between theory and practice is cited by McCutcheon (1985 cited in Schnellert 1993) echoing Wolanky's (1992a cited in Schnellert 1993) concern regarding curriculum development process and realization of human potential. UNESCO (2002) acknowledges these challenges regarding the potential of vocational curriculum and strongly advocates the need for a "reoriented" curriculum to address the requirements of the rapidly growing service industries.

Stevenson & Laird (1993) in their paper advance a simplified approach to curriculum development in vocational education proposing a six-step iterative process model starting with occupational analysis, competency standards, accredited syllabus, implementation, and review. Stevenson & Laird (1993) further highlight the decision-making aspect of the curriculum by defining curriculum development as a "process in which value judgments are made, typically about such matters as

intent, content, teaching strategies, learning experiences, assessment, and evaluation". UNESCO (2002) proposes a systems approach to curriculum development to curriculum development adopting industry oriented process model comprising of five steps that include analysis of needs, goals and aims, detailed objectives, implementation, and continuous evaluation. UNESCO (2002) further cites the significance of considering economic aspects in the curriculum development process and states "economic leaders should participate in the curriculum development process". Finch & Crunkilton (1999) survey a variety of contemporary curriculum development systems and proposes a generic systematic curriculum design, a range of curriculum development models that characterizes the relationship between the outside environment (economic factors, political forces, and cultural forces) and the internal organization. The Integrated System for Workforce Education Curricula (ISWEC) proposed by Edling and Loring (1996 cited in Finch & Crunkilton) consists of the career cluster, career major, and the occupation components. ISWEC model addresses the school site learning and worksite learning, restricting the scope to address and facilitate learning activities, excluding the "environment" component or the pre-learning processes. Systematic Curriculum and Instructional Development (SCID) is another curriculum development approach to developing occupational training programs, consists of steps including analysis (that uses the DACUM approach), design, instructional development, training implementation, and program evaluation (Stammen 1997 cited in Finch & Crunkilton 1999).

2.4.5 Theoretical aspects of vocational knowledge

Billet further advances Vygotskyian constructivist perspective (Billet 2003) to the sociocultural and historical sources of vocational knowledge (curriculum and pedagogy) in his inspiring article informs the social sources of vocational knowledge (sociogeneses) at various levels of construction

and manifestations of vocational knowledge. Vocational knowledge construction at a sociocultural level of practice (Scribner 1985b cited in Billet 2003) reflects local cultural (and social) needs resulting in the development of occupational norms, standards, values, expectations, and practices. Vocations or occupations of today's ever-changing economies demand highly complex occupational competencies, having transferable skills adaptable across different domains of activities or communities of practice (Lave & Wenger 1991, Billet 2003, Lesser & Storck 2001).

2.4.5.1 Situated Cognition Theory

Situational practice level Billet (2003) drawing from Lave & Wenger (1991) looks at how curriculum as knowledge is manifested focusing on learner's demonstration of cultural practice (occupation) in different situations of practice (classroom or workplace). Ellstrom (1997) underlines the relationship between general competencies, and particular situation is underlined by defining occupational competence as a "relation between the capacity of an individual and the requirements of a certain (class of) situations. Adaptable occupational competence, one of the key purposes of a vocational curriculum comprises of both cognitive and social skills and application of them at different instance of practice (workplaces) or communities of practice. The occupational skills taught at school, and its actual manifestation at the workplace challenge the transferability skill of the learner and is influenced by the sociocultural aspects of the domain. Situated learning theories proposed by Lave & Wenger (1991) advance the situated social practice that emphasizes the relational interdependency of agent and the world (i.e. the learner and the workplace or school), activity, meaning, cognition, learning and knowing. Issues related to transferring learning skills from school to workplace is appropriately advanced by Resnick (1987) in his well-known article stating that "people think differently in situations outside of school and laboratories."

CEDEFOP (2015) cites that vocational didactic, mostly guided by constructivist learning theory is conceptualized at both broader as well as specific teacher-learner levels. CEDEFOP (2015) defines vocational pedagogy as the total of decisions taken by the trainer in terms of their approach to contextually meet the needs of the learner. Following the constructivist perceptions, situated learning is one form of contextual learning wherein learning is grounded in the actions of everyday situations (Stein 1998).

2.4.5.2 Work-based and workplace learning

According to Hoffman (2011), work-based learning is the learning activity that happens more in the school and less at the workplace (as part of learner workplacement practice), whereas workplace learning (job shadowing, service learning, internship, and apprenticeship) is delivered primarily in a workplace setting supplemented by school-based instructions. Work-based learning facilitates school-to-work transitions and is intended to offer learning experiences that connect classroom-based learning to workplace demands (Kenny et.al. 2015) by provisioning vocational learners with work-based applied learning opportunity (Sun & Kang 2015). Workplace learning on the other hand is a process of acquiring occupational competence by engaging in some form of vocational learning activity to meet workplace demand (Jacobs & Park 2009). Workplace learning is characterized by a set of informal interactions (Smith 2003), productivity and efficiency (Boughton et.al. 2016), and socialization and enculturation (Evans & Waite 2010).

2.4.6 Teacher Beliefs and Perceptions

Having not clearly defined by the education research community (Pajares 1996), conceptualizing "beliefs" (of stakeholders of a vocational curriculum development system) is a challenge for this

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research. Existing literature conceptualizes beliefs in terms of people manipulating knowledge for a particular purpose (Abelson 1979 cited in Pajares 1996), as dispositions to action and major determinants of behavior as the mental construction of experience (Sigel 1985 cited in Pajares 1996), and as individual's representation of reality. When it comes to pedagogical beliefs, this research concurs with that of Tabachnick and Zeichner (1984 cited in Pajares 1996) differentiates between "teacher beliefs" and "teacher perceptions" defining the latter as a "combination of beliefs, intentions, interpretations, and behavior that interact continually". Echoing Tabachnick and Zeichner (1984 cited in Pajares 1996), this research aims to capture perceptions of vocational education regulators, curriculum developers, teachers, learners, and employers.

All the aforementioned sources of literature emerging from diverse aspects of the broader education research landscape discussed above require being brought together to contribute to meeting the main purpose of the research that aims to capture the beliefs and perceptions of stakeholders of the vocational curriculum development activities, particularly in the UAE educational context.

Teacher beliefs and perceptions have been critically reviewed and analyzed by the discourse community from various philosophical and practical standpoints. From a philosophical dimension, the researcher views that a general understanding about an individual's epistemological beliefs would be an ideal starting point to get into the discussion about teacher beliefs and perceptions. According to Hofer & Pintrich (1997), "epistemological beliefs are those beliefs held by individuals about the nature of knowing and knowledge".

Teachers' beliefs and perceptions about curriculum innovation and its consequences have been explored extensively. It could be found that teachers respond positively to curriculum innovation when implementation demands extensive collaboration and engagement. In a recent study focusing on the process of collaboration of teachers to design a new curriculum, Jonker et al. (2019)

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highlights the positive effect of supportive and inspiring group dynamics on the success of the collaboration process. Teachers who participated in this study believes that highly engaging Teacher Design Teams (TDTs) are critical to the effective implementation and institutionalization of educational innovations. A similar study carried out by Fix et al. (2019) explored the perception of vocational teachers about a reformed curriculum for at-risk students. Teachers who participated in the study believes that a strong relationship that integrates the curriculum, students and teachers and critical to effective curriculum innovation. Teachers' perceived social representation is an interesting thought that appears across literature focusing teacher's beliefs and perceptions. Teachers' beliefs and perceptions about their level of autonomy is a matter of concern in the light of top-down educational reforms. In a very interesting study (Erss 2016) investigating the professional autonomy of 33 teachers in interpreting and implementing curricular reforms in Estonia, Germany and Finland, it was found that active representation of teachers in educational decision making greatly influence their decision to enact the curricular intentions. Teachers in these countries believe that they possess an adequate level of pedagogical autonomy within the curriculum framework in choosing the right methods, materials and resources on varying degrees of change. On a similar note, Mellegård & Pettersen's (2016) study investigated teachers' perceptions of curriculum change as they were provided with the discretionary freedom to take up the role as curriculum developers. The study interestingly highlights the level of confidence expressed by the policy makers in teachers' professional autonomy or how they leveraged teachers' professional capital (Fullan 2015). On the contrary, the study found that teachers' perceive the "expanded freedom" as "expanded demands". Teachers who participated in this study, expressed uncertainty regarding their competencies and skills as those required for the development of a curriculum. The study also advances serious questions regarding the suitability of models that

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would facilitate teachers to balance and foster interaction between internal and external change forces to get in line with the curriculum change requirements. Drawing from these literature sources, it would be worth asking how much freedom teachers should be provided with, when they are encouraged to collaborate in curricular reform projects.

A range of other factors influence teachers' interpretation of the curriculum, especially regarding the "subject-matter" or the content of the curriculum. Teachers within the same group tend to foster multiple interpretations of the same curriculum learning outcomes. These differing interpretations are presented in a study by Davis et al. (2019), while exploring the perceptions of mathematics teachers about the official curriculum. Another significant factor which demands a deeper discussion is about teacher-discretion in response to interpreting and implementing educational reforms. Ellili-Cherif & Hadba (2017) point out the "discretion" factor demonstrated among teachers when responding to the adoption requirements of a prescribed curriculum. In their study involving fifty-seven teachers adopting a mixed-methods approach, it was found that a majority of the teachers exercised a high degree of discretion while adopting the new curriculum. The study found that most of the teachers modify, edit, tweak, or include new curriculum components along with the prescribed curriculum within the privacy of their practice. This highlights the importance of consistency in communicating the intentions of the curriculum in all its representations. Advocators of prescribed curriculum should ensure that curriculum components maintain a consistent structure in terms of teaching resources by maintaining a controlled space for teacher discretion and creativity. This would reduce ambiguities and subjective deduction of the curriculum intentions. These findings from the above-mentioned studies indicate the importance of fostering high level of teacher engagement in the curriculum innovation initiatives. Teachers believe that building awareness, encouraging shared working spaces, appropriate induction training, and robust

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technology infrastructure and key to successful educational innovation. In a study conducted by Wongnai & Boachie (2018) that explores the perceptions of teachers about the competency-based training in Ghana, it was found that positive adoption probabilities of innovation are influenced by teachers' participation in workshops, the provisioning of support resources, and establishing motivating strategies. A range of studies also have reported on the influence and the role of teachers' experience on the implementation of a prescribed curriculum change. Rahimi & Alavi (2017) highlights the role of teaching-experience in adopting a new curriculum and critical influence it has on the overall impact of change. Despite the possession of experience, the study also found that experienced teachers are more concerned about the logistical or administrative issues related to the innovation. Similar views are shared by Karatas (2016) in a study that explored the beliefs of 139 preschool teachers. The study found that teachers' exposure to a wide range of teaching and learning occupational circumstances positively influenced their understanding of the curriculum. Studies demonstrate that teachers' beliefs and perceptions are also an effect of their personality traits and characteristics. Curriculum innovation and subsequent enactment processes could be further enhanced through drawing on personal characteristics and propensities of teachers (Macdonald et al. 2016). Studies also point out the underlying influence of teacher's self-efficacy on traversing the challenges inherent in the demands advanced by curriculum reforms.

2.5 Theoretical Framework

The conceptual framework has guided this researcher to identify the theoretical perspective through which the researcher can approach this research. This perspective draws upon concepts, constructs, definitions, models, and theories pertaining to a particular literature-base (Merriam 2009).

As this research attempts to explore the concerns of vocational teachers as they adopt a new or curriculum, it is not just confined to capturing the personal feelings or worries of an individual teacher or group of teachers. Rather, the researcher would argue that this research dwells deeper into the behavioral and affective domains of an individual teacher, as she is enforced to adopt a change (or an innovation). Henceforth, the researcher surveyed a number of theories and models, which have conceptualized the lifecycle of a change, not just as an event, but also as a process model. Researcher's argument draws on the premise that each individual construct a personalized mental structure and behavioral patterns in response to dealing with a change.

2.5.1 Developmental Conceptualization Theory

Frances Fuller's seminal work on developmental conceptualization (Fuller 1969) proposes a three-stage model that conceptualizes the concerns of teacher-students, who exhibit self-concerns, task-concerns, and impact-concerns during their pre-service, early-teaching, and late-teaching phases respectively. Fuller's three-stage model was further extended to the conceptualization of an individual-centered framework, the Concerns-Based Adoption Model (CBAM) to explore greater insights of individual's concerns as they experience an educational innovation (Fuller and Case 1972, Fuller et al. 1974, Loucks & Hall 1979, Hord et al. 2014). Fuller, in her study uses the term "perceived problems or worries" to refer to "concerns" and proposed a developmental conceptualization of teacher concerns starting from a non-concern phase to late-concern phase (Fuller 1969). Fuller posited three phases of concerns namely pre-teaching concern, an early teaching concern and a late teaching concern (Fuller 1969). A more detailed classification of Fuller's (Fuller & Case 1972, Fuller et al. 1974, Fuller 1969) concerns models are described below (Table 2.1):

Phase	Nature of Concerns	Concerns-driven queries
Pre-Teaching	Non-Concern	No specific concerns. Most concerns are based on rumors and anticipation.
Early Teaching	Concern with Self. Concerns with familiarizing oneself to a teaching situation.	Where do I stand? Am I instructed on what to do? Can I try something myself? How adequate am I?
Late Teaching	Concerns with Pupils. Concerns about teaching methods and learning materials.	How is it going to affect students? Would it be easier or difficult for my students to understand? What would be the response of students? How would it influence student performance?

Table 2. 1 Classification of Concerns (adapted from Fuller & Case 1972)

The rationale to understanding and exploring concerns is the key to this research. The simplest of the questions - why is it important to delve into the intricacies of "concerns" and to what degree would it benefit the educational universe in general and the educational policy makers in particular? Fuller does not spare any such thoughts and raises questions concerning the cause and effect relationship between teacher concerns and pupil learning outcomes (Fuller 1969). However, Fuller asserts that a deeper understanding of concerns might help expedite conflicting results about teacher personality and teaching behavior. In her concluding remarks, Fuller reiterates:

"*In any case, teaching against the tide is unlikely to increase interest in education courses. Teaching with the tide is at least easier on both the instructor and the teacher in preparation than breasting the waves*".

2.5.2 Conceptual Change Model

During the early eighties, Posner et al (1982), proposed the Conceptual Change Model (CCM), referring to the change as "a rational process of exposure to consideration of, and conscious assimilation or accommodation of new ideas". Posner et.al's change model draws on the Piagetian conceptions of assimilation (using an existing concept to address the new phenomena) and accommodation (inadequacy of the existing concepts forces the learner to replace or reorganize her central concepts) (Posner et.al 1982, Fieldman 2000, Ozdemir & Clark 2007). Posner et al model identified four critical variables in the conceptual change process (Table 2.2).

Dissatisfaction:	Learners must have accumulated questions unsolved by their existing concepts.
Intelligibility:	Learners must be able to make sense of a new concept before they can explore its possibilities.
Plausibility:	A new concept must be able to solve the problems or questions that existing concepts could not.

Fruitfulness:	A new concept must have the potential to lead to new questions, products or areas of inquiry.

<p align="center">Table 2. 2 Variables in the Change Process (adapted from Posner et.al 1982)</p>

However, for the purpose of my research, despite the fact that CCM model has been extended to study perceptions of teachers in regards to curriculum innovation, I would tend to argue that CCM does not provide any definitive dimensions beyond the process of decision-making. Posner et al. (1982) defined conceptual change as a rational process of exposure to, consideration of, and conscious assimilation or accommodation of new ideas.

Focus on individuals (this is quite interesting and adds value to my research it has constructivist orientations, which is built on the premise that "individual" (be it teacher, or student) construct their own mental structures or attach contextual meaning to the phenomenon. Posner et al. (1982) maintains, "a person's central concepts are the vehicles whereby a given range of phenomena becomes intelligible". Loucks & Hall (1979) also shares a similar view that identifies or posits individuals as the critical unit of analysis.

2.5.3 Fullan's Change Theory and the Triple I Model of Change

According to Fullan (2015), reform is more about change in cultural practices within the classrooms, or within the privacy of their practice. Fullan points out that the 'neglect of the phenomenology of change', or how an individual experiences change in practice, is one of the key reasons for implementation failures. Triple I model (Table 2.3) describes three phases of initiation, implementation and institutionalization (Fullan 2015). Initiation phase is when an innovation or a

new idea is being promoted and proposed. Further, the "initiative" is moves to phase of implementation, where the innovation is put to actual practice or used. Institutionalization phase is an extension of the implementation phase, where the innovation is tested for its degree of sustainability. This is where a decision is made, whether to continue with the adoption or not.

Initiation	Implementation	Institutionalization
Consists of the process that leads up to and includes a decision to adopt or proceed with a change	Involves the first experience of attempting to put an idea or reform into practice	Process of embracing the change as it gets built in as an ongoing part of the system or disappears by way of a decision to discard or through attrition

Table 2. 3 Triple I model (adapted from Fullan 2015)

This research predominantly draws upon the theoretical constructs of the Concerns-Based Adoption Model (CBAM) proposed by Hall et al. (2014). CBAM evolved out of the works of Frances Fuller (1969), which led to the further investigation that focus on individuals "when they are asked to change their practice or adopt an innovation", resulting in the development of the conceptual framework of CBAM (Hall et. al 2014). CBAM is one of the most widely applied models of educational change (Bailey & Palsha 1992, Anderson 1997), and perceived as an appealing strategy for understanding the implementation of new practices (The evidence-based intervention work group 2015), particularly for understand the affective and behavioral responses

of teachers when they adopt an innovation. This research also draw upon the constructs of social science theories as an additional paradigm to further explore teacher's behavioral change, and adoption practices when they adopt a new curriculum. As the conceptual framework of CBAM guides and advocates the collection of both qualitative and quantitative data, my research is informed by an overarching social science theory which is presented as a conceptual model (Maxwell 2012) that helps me to explain the concerns of vocational teachers as they adopt a new curriculum.

This research draws upon these conceptions, definitions, and models to explore the perceptions, feelings, and behavioral responses of vocational teachers when they adopt or enforced to adopt an innovation (curriculum innovation to be contextually specific) that significantly influence key aspects of their field of practice. This research focuses on the concerns of vocational education teachers in one of the largest vocational educational institutions in the UAE, as they are currently experiencing the first major curricular reform since its inception in 2010.

The rationale for this research rests on the argument that identifies and posits teachers as the key agents of any educational change.

Fullan (2015) in his seminal book "The New Meaning of Educational Change", emphasize the role of teachers and identifies them as they "key agents of change", and maintains that "educational change depends on what teachers do and think - it's as simple and as complex as that". Change is a very frequently used conception across research discourses and literature-base. According to Kent (1997), "change" is an umbrella term, which encompasses concepts such as innovation, development, renewal, reform and improvements.

2.5.4 Conceptions of Innovation

Innovation, according to Kent (1998) is a "radical break with former practice", whereas Roger (2003) considers innovation as less radical and rather as "an idea, practice or object that is perceived as new by an individual or other unit of adoption". According to Hall et al. (2014), innovation is a generic term for "any program, process of practice - new or not - that is new to a person". All these above conceptions refer to the "newness", which clearly indicates that innovation does not refer to any minor adjustment or simply a renewal of an existing affair; rather it is a paradigm shift, a radical break from the previous practice or system.

Within the context of this research, the recently reformed NOSS-based vocational qualification, a curriculum innovation in its own sense, is "new" to all vocational teachers, and undoubtedly a radical break from their perception of existing qualification models. It might be worth exploring the rationale for perceiving these as radical. This research argues that curriculum innovation is not a mere modification of instructional materials, rather it is a cultural change, which involves changes in teaching premises, and consequently thinking and classroom practices (Fullan 2015). When it comes to breasting changes or innovations, CBAM views change as a process, a process through which individuals experience the demands of an enforced change, resulting in the arousal of a composite representation of emotional thoughts referred to as concerns (Newlove and Hall 1976).

2.5.5 Adoption

Rogers (2003) refers to adoption as a "process of deciding to use" an innovation. Hall et al. (1973) differs from Roger's preposition of adoption by extending it beyond the decision making process. Hall et al. (1973) maintains that adoption "involves a multitude of activities, decisions, and

evaluations that encompass the broad effort to successfully integrate an innovation into the functional structure of a formal organization such as a school, a college, or an industrial organization". This definition parallels to a greater extent, with Fullan's (2015) phases of initiation, implementation, and institutionalization.

This research aims to explore the views and concerns of vocational education teachers who are being tasked to adopt a new curriculum, which has been developed by without much of their involvement or contribution.

A large number of research studies emphasize the role of teachers in vocational curriculum development which views teachers as the focal point of a curriculum innovation effort (Loucks & Hall 1979, Kimpston & Anderson 1988, Thompson 1988, Laird & Stevenson 1992, Billet 1995, Heikkinen 1997, Cornford 1999, Winning 2000, Wheelan & Carter 2001, Niven et al. 1998, Fullan 2006, Wolf 2011, Broad 2016).

All the above mentioned studies provides a clear picture of the state of affairs of NVQ implementation challenges and the role of teachers in the implementation of a vocational qualification. Henceforth, the outcomes of this research are relevant to all key governance stakeholders - curriculum developers, VET leadership, industry partners, and policy makers. The research should potentially guide concerned authorities and VET leadership to make informed decisions and to enhance curriculum innovation and implementation practices.

2.6 The Concerns-Based Adoption Model

CBAM was developed out of research at the Research and Development Center Texas, which views change as a process, experienced by individuals who seek to or are being asked to change their behavior in response to any innovation (1979 A Concerns Based Approach Loucks et al). CBAM focuses on the individuals and perceives them as the critical unit of a stage-based analysis, drawn from two dimensions of their developmental growth. These two dimensions of developmental growth are referred to as the Stages of Concerns (SoC) and the Levels of Use (LoU). (Loucks & Hall 1979).

A two-year study describes the application of CBAM to capture the implementation of a revised science curriculum in Canada and to determine the effects of the effort on the concerns of the teachers and their use of the new curriculum. The study emphasizes the role of teachers and views teachers as the focal point in any school improvement effort (Loucks & Hall 1979).

The CBAM is a user-centered framework that aims to identify the intrinsic needs of individual adopters of an educational innovation and provides a supporting mechanism to address implementation-specific challenges and frustrations (Fuller et al. 1974, Newlove & Hall 1976, Loucks and Hall 1979, Locks & Hord 1980, Hall et al. 2014). The CBAM framework is built on the construct that identifies and maintains 1) change as a process and not an event, 2) change as individual accomplishment, 3) change as a highly personal experience, 4) change as that involves developmental growth, 5) change as best understood in operational terms, and 6) the focus of facilitation should be on the individuals, innovations, and the context (Hord et al 2014). The proponents of CBAM provides a tool-oriented framework that would enable the exploration of

attitudes and behaviors of individuals attempting to adopt a new innovation into practice. Drawing on Fuller's developmental conceptualization model (Fuller 1969), CBAM provides explanations of the developmental progressions, which individuals experience while adopting an innovation (Locks & Hord 1980, Vanderberghe 1983, Marsh & Jordan-Marsh 1985, Bailey & Palsha 1992, Conway & Clark 2003, Hall et al. 2014, Vocht & Parchman 2017). One of the earliest studies defines CBAM as an "empirically-based conceptual framework which outlines the developmental process that individuals experience as they implement a new innovation" (Locks & Hord 1980). CBAM uses three dimensions or diagnostic tools - Stages of Concern (SoC), Levels of Use (LoU), and Innovation Configuration (IC) Maps - to assess, monitor, and better understand aspects of the implementation process related to an innovation (Hall et al. 2006, Hord et al. 2014).

2.6.1 Stages of Concern

Stages of Concerns (SoC) dimensions of CBAM focuses on the concerns of individuals involved in the implementation of innovation (Hall et al. 1973, Fuller et al. 1974, Newlove & Hall 1976, Hall et al. 1977, Locks & Hord 1980, Hall et al. 2014, Vocht et al. 2017). SoC dimension identify seven distinctive stages of concerns with varying levels of intensity at different phases of innovation implementation (Hall et al. 2014, Vocht et al. 2017). The seven stages are grouped under three developmental conceptualization of concerns (1969 Fuller) - self, task, and impact (Hall et al. 2014) (Table 2.4).

Stages of Concerns: Typical Expressions of Concern about the innovation		
	Stages of Concern	Expression of Concern
Impact	6 Refocusing	I have some ideas about something that would work better
	5 Collaboration	I am concerned about relating what I am doing with what other teachers are doing
	4 Consequence	How is my use affecting students?
Task	3 Management	I seem to be spending all time getting materials ready
Self	2 Personal	How will using the innovation affect me?
	1 Informational	I would like to know more about it
	0. Unconcerned	I am not concerned about the innovation

Table 2. 4 Stages of Concerns (adopted from Hord et al. 2014)

2.6.2 Levels of Use

The LoU construct includes eight behavioral indicators that describe the behavior of users of an innovation through various stages from getting oriented to managing and finally to integrating and renewing the innovation (Loucks & Hall 1979, Locks & Hord 1980, Hall et al. 2006, Hall et al.

2014). The LoU component of CBAM (Table 2.5) does not attempt to explore to any extent, the attitudinal, motivational, or other affective aspects of the user, rather on the behavioral aspects.

Level	Description
VI Renewal	User reevaluates the quality of use of the innovation and makes more effective alternatives to the established use of the innovation
V Integration	User is making deliberate efforts to coordinate with colleagues and improve the innovation for the benefit of the client
IV B Refinement	User makes changes to increase the impact on clients within immediate sphere of influence
IV A Routine	Use of the innovation is stabilized and user has established a pattern of use. User has made some minor adjustments and changes to improve the innovation
III Mechanical	User focuses on the short-term, day-to-day use of the innovation. Minor changes are made to familiarize the innovation rather than meeting client needs
II Preparation	User has definite plans for the use of innovation
I Orientation	User is attempting to acquire information about the innovation or shows interest to learn about the innovation
0 Non-use	User has little or no interest or knowledge in the innovation

Table 2. 5 The Levels of Use (adopted from Hord et al. 2014)

A number of studies have attempted to explore the concerns of teachers and other change facilitators (Loucks et al. 1979, Anderson 1997, Jongmans et al. 1998, Kimpston & Anderson 1988, Crawford et al. 1998, Donovan & Strudler 2000, Leung 2008, Saunders 2012, Rakes & Dunn 2015, Vocht et al. 2017, Tyler-Wood et al. 2018, Masarweh 2019).

Loucks et al. (1979) emphasize the importance of understanding teacher concerns and consider it as a highly effective way to have a better understanding of the perceptions of the individuals involved with new experiences. Individuals who are engaged with any educational innovation travels through various developmental stages, having varying levels of intensity and rigor. Within the context of an educational innovation, the focus is on the "perception of the person", who according to Loucks et al (1979) is the final determinant of any educational change, irrespective of any additional interventions or techniques. CBAM and its applications in a wide variety of educational settings are discussed in detail in Chapter 3.

Chapter 3: Application of CBAM in this research

This chapter is organized to include five sections. Section 3.1 of this chapter advances the rationale for including a dedicated chapter to highlight the significance of the CBAM framework for this research. Section 3.2 provides a detailed account of the conceptual models, which informed the development of the CBAM framework. Section 3.3 provides a detailed view of the internal process interaction mechanism within the CBAM framework. This is followed by section 3.4, which looks into the application of CBAM in various research studies. Finally, section 3.5 provides a detailed discussion in regards to the use of CBAM in this research, and the extent to which its diagnostic constructs are adopted to address the research questions.

3.1 Introduction

This chapter presents a thorough review of the Concerns-Based Adoption Model (CBAM), and advances beyond the theoretical aspects of CBAM (which is explored in greater detail in section 2.7.4 of Chapter 2) to provide its contextual relevance and the extent to which it is used in this research. As this research focuses on the concerns of vocational teachers, and considering CBAM's limited application in VET-based studies (Saunders 2012), it would be useful to discern the diagnostic tools of CBAM and to know how they are implemented in actual practice settings. Furthermore, this chapter explains in detail, how and to what extent is CBAM critical to this research, and how it is applied to address the research questions.

Since its development in the 1970s and further refinement in the1980s, CBAM has been endorsed as 'the most robust and empirically grounded theoretical model for the implementation of educational innovation' (Anderson 1997) and is recognized as an effective mechanism for

assessing their implementation (Hall & Hord 2011, Hord et al. 2014, Senin & Nasri 2019). Furthermore, CBAM has been widely used in research studies to investigate the affective and behavioral changes of teachers or users who are engaged in the process of adopting innovations in educational settings (Hord et al. 2014, Rakes & Dunn 2015, Chumbley 2016, Vocht et al. 2017, Yan & Deng 2019).

3.2 Educational change models and how they informed CBAM

A team of researchers (Hall, Wallace and Dossett) at the Research and Development Center at the University of Texas originally developed the CBAM framework for Teacher Education, in response to the 'innovation focus approach to educational change' (George et al. 2013). These researchers first conceptualized the CBAM framework in 1973 in the 'Original CBAM Paper' (Hall et al. 1977), drawing on Fuller's (1969) developmental conceptualization model (Bailey & Palsha 1999, George et al. 2013, Turns et al. 2007, Hollingshead 2009, Shoulders and Myers 2011, Kwok 2014, Voch et al. 2017, Gudyanga & Jita 2018). Since its development in the 1970s and 1980s, CBAM has been endorsed as 'the most robust and empirically grounded theoretical model for the implementation of educational innovation' (Anderson 1997) and is recognized as a robust mechanism for assessing their implementation (Hall & Hord 2011, Hord et al. 2014).

The central premise of the framework posits an individual innovation adopter (user) as the 'critical unit of analysis' (Loucks & Hall 1979) in any educational change process (Hord et al. 2014), with due consideration given to other key change-related organizational and contextual factors. CBAM assumes change as a 'highly personal experience, which is best understood in operational terms',

and argues that the focus should be primarily on 'the individual, innovation and the context' (Hord et al. 2014) and not on the change-sponsoring organization.

As a client-centric model, CBAM assumes change as a process (Hollingshead 2009, Shoulders & Myers 2011, Hord et al. 2014, Chumbley 2016), consisting of a number of developmental stages, as experienced by an individual adopter involved in the implementation of an innovation, such as newly reformed curriculum or an e-learning system. The CBAM framework attempts to describe the innovation context (within which the change process is being experimented), provides diagnostics mechanisms to capture individual adopter's response to the innovation, and suggest appropriate interventions to facilitate high level of implementation fidelity (Anderson 1997, George et al. 2013). CBAM attempts to capture the affective and behavioral responses of individual-adopters, who in most cases, are 'enforced' to embrace externally prescribed innovations (George et al. 2013), be it a new curriculum, a text book or an educational technology. CBAM uses three diagnostics constructs for examining the patterns of individual responses to an innovation. These constructs are a) Stages of Concerns (SoC), b) Levels of Use (LoU) and the c) Innovation Configurations (IC) (Hord & Loucks 1980, Anderson 1997, Hord et al. 2014, Min 2017). From a structural standpoint, the CBAM process model in regards to the innovation context and key components are detailed in section 3.2 of this chapter. CBAM as an educational change model has inherited, and inspired by conceptions and processes from previous educational change models (Hall et al. 1973). The next section discusses the various change models and conceptual frameworks that have inspired the development of the CBAM framework.

From a CBAM standpoint, the adoption (of an innovation) is conceptualized not as a one-off event, but rather as one that 'involved multitude of activities, decisions and evaluations that encompass

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the broad effort to successfully integrate an innovation into the functional structure of an organization such as a school, a college, or an industrial organization' (Hall et al. 2014). Streamlining an innovation with the functional structure of an organization requires a collaborative linkage between the sponsors and the practitioners of the educational innovation, as assumed by the CBAM framework. As an eclectic model (Figure 3.1), CBAM draws on selected concepts of the 'linkage model' proposed by Havelock (1970). The linkage model is a synthesized and refined version of three approaches to managing education change – a) the Research, Development, and Diffusion perspective, b) the Social Interaction perspective, and c) the Problem-Solver perspective. (Hall et al. 1973, George et al. 2013, Hall et al. 2014) (Table 3.1).
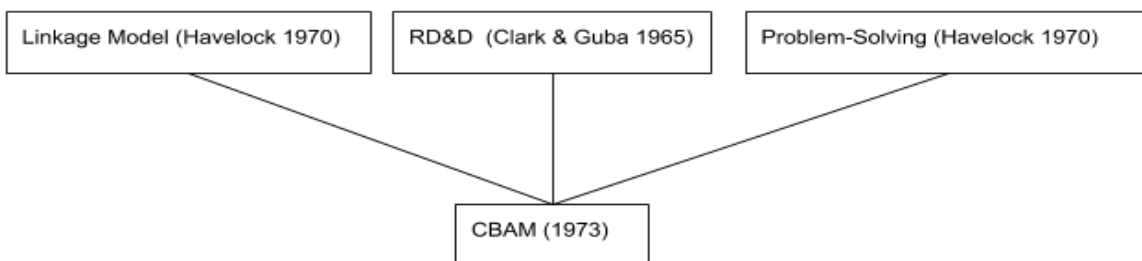
Figure 3. 1 The Linkage Model (adapted from George et al. 2013)

Research, Development, and Diffusion perspective	"An orderly, rational, sequential, well-coordinated research, development, and diffusion arrangement will speed up and increase efficiency of the change process" (Owens 1973)
Social Interaction perspective	"Concerned with the spread of an existing innovation through social systems using strategies such as 1) natural diffusion, 2) utilizing existing communication ,and 3) building new networks (Owens 1973, Hall et al. 1973)
Problem-Solver perspective	The focus is on the development of problem-solving capabilities of the organization, in which the user, identifies, clarifies and select an appropriate solution to the problem (Owens 1973, Hall et al. 1973)

Table 3. 1 Linkage Model Components (adapted from Owens 1973, Hall et al. 1973, and Hall et al. 2014)

3.1.1 Linkage model (Havelock 1970) draws on the basic premise that not only links but also establishes a collaborative communication platform or context between the sponsors of an innovation and the practitioners (or adopters) of the innovation. However, the CBAM framework has its own fundamental characteristics that distinguish itself from the linkage model (Table 3.2).

Linkage Model	CBAM
Linkage model synthesize the best features of RD&D, social-interaction perspective and problem solving orientation	CBAM uses concepts of the linkage model and processes from RD&D, and problem-solving perspective
Linkage model does not initially require the use of an innovation (Hall et al. 1973). Linkage model provides a 'discontinuance' or 'rejection' stage, giving room to reject an innovation	CBAM assumes that a specific innovation will be accepted (Hall et al. 1973) and follows RD&D process model of development, dissemination, trialing, and ultimate integration (or institutionalization) into the normal operations of the institution
Linkage model is concerned with the organizational development and promotes collaborative communication with users and non-users of the innovation	CBAM is not directly involved with the organizational development per se, rather with the innovation adopters
Linkage model emphasize the problem-solving capabilities of the user	CBAM nurtures the problem-solving capabilities of the user as the process of adoption progresses and as the power to use, an innovation is transferred to the user.

Table 3. 2 Linkage Model and CBAM (adapted from Havelock 1970) and CBAM Framework

3.2.2 Conceptualization of Adoption

CBAM conceptualizes adoption in concert with the model (Table 3.3) proposed by Clark & Guba (1965), which consists of three phases – trial, installation and institutionalization.

Research	This phase involves researching the educational needs in regards to the innovation. This is usually referred, within innovation contexts, to as the needs-analysis phase, feasibility study phase.
Development	This phase involves design of innovations, analyzing requirements, planning and modelling the innovation, which includes invention and design.
Diffusion	This phase involves dissemination (creating awareness of the innovation among adopters and adopting institutions) by using awareness campaigns, workshops, training and consultation
Adoption	This phase involves trialing (beta testing), installation or executing the innovation (or rolling out the innovation) and institutionalization (which is integrating the innovation to the routine operational aspects of the adopting institution

Table 3. 3 RD&D Model (adapted from Clark & Guba 1965)

3.2.3 Fuller's Developmental Conceptualization

Frances Fuller initially conceptualized an individual adopter's concerns by modelling the developmental concerns of pre-service teachers. Early proponents, Fuller and Case (1974) outlined an initial model that categorized seven kinds of concerns that ranges from a purely self-concern (low-level concern) stage to a high-level, pupil-concern stage (Table 3.4).

Phase	Code	Description	Concern-contexts
One: **Pre-teaching Phase** Concerns about Self (Non-teaching concerns)	0	Concerns unrelated to teaching	I am concerned about my office desk I am concerned about my employment-contract I am concerned about my kids' school admission
Two: **Early Teaching Phase** Concerns about self as a teacher (Covert and Overt Concerns)	1	Where do I stand?	Concerns about authority figures and acceptance by them.
	2	How adequate am I?	Concerns about one's adequacy as a person.
	3	How do pupils feel about me?	Concern about personal, social, and emotional relationship with students.
Three: **Late Teaching Phase** Concerns about Pupils	4	Are students learning what I am teaching?	Concern about teaching methods.
	5	Are students learning what they need?	Concern about what students need as a person.
	6	How can I improve myself as a teacher?	Concern with personal and professional development, ethics, community problems and other events.

Table 3. 4 Concerns Phases (adapted from Fuller (1969), Fuller & Case (1972))

CBAM emerged from Fuller's initial conceptualization towards a theoretical framework as ongoing research was conducted on the change and adoption process (Hall et al. 2006, George et al. 2013). The next section discusses the current CBAM process model including the various components involved in the linkage, probing, diagnosing, and intervention mechanisms of the change process.

3.3 Can CBAM be called a theory?

The proponents of CBAM identifies it as a 'model' of innovation adoption process (Hall et al. 1973), an empirically based conceptual framework (Hord & Loucks 1980, George at al. 2006, Hord et al. 2014, AIR 2015). Even though the proponents have not identified CBAM as a theory, the theoretical constructs (Fuller 1969, Clark & Guba 1965, Havelock 1970) based on which CBAM is grounded cannot be neglected. At the outset, CBAM appears to be in concert with the Kerlinger's (1986) definition of theory as 'a set of interrelated constructs, definitions, and propositions that presents a systematic view of the phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomenon'. Anderson (1997) advances an interesting question regarding the appropriateness of warranting the status of a "theory" to a conceptual framework for describing teacher change (Anderson 1997). CBAM appears to meet the criteria be identified as a good theory (Agnew & Pyke 1969), as it is a) simple, b) testable, c) novel, d) supportive of other theories, e) internally consistent, and f) predictive. CBAM attempts to describe, monitor and evaluate an educational change process using simple, but robust diagnostic construct described in its process model (Hord et al 2014). Moreover, the application of CBAM in evaluating the impact of educational innovations are widely applied across schools and higher education

settings across the globe, in longitudinal as well as regular studies (George et al. 2006, Saunders 2012, Hord et al. 2014, Kwok 2014, Avery 2017).

3.4 Managing controversies related to the CBAM

CBAM constructs have undergone rigorous tests by numerous researchers in various innovation settings resulting in contextualized variations of the diagnostic tools. Vanderberg (1983) re-conceptualized the original 'Austin SoC-Q' and proposed a 'Belgian-Dutch SoC-Q' that merged the 'personal' and 'informational' sub-scales (or stages) as one single, integrated subscale and added a modified 'consequence for pupil' sub-scale to the 'Self- concerns' stage. An additional restructuring is the inclusion of a new sub-scale - 'refocusing based on experience with pupils', part of the 'impact' (or 'others') stage. Bailey & Palsha (1992) adapted a five-stage SoC model, as opposed to the original seven-stage SoC model to study the concerns of inservice professionals working in early intervention programs for infants and preschoolers with disabilities. The authors claimed that their five-stage framework as 'more parsimoniously and psychometrically consistent' for conceptualizing needs. Shortsberger and Crawford (1999) refuted the original SoCQ construct and argued that the subscales of 'Awareness' and 'Refocusing' lack reliability and should be removed from the SoC-Q instrument. In another study, Kwok (2014) refuted CBAM's concept that adopter's concerns undergoes developmental progression with the accumulation of improved experience with the innovation. In regards to the adaption of the SoC subscales, it has been stated by the proponents of CBAM that these stages of concerns are distinct but not mutually exclusive (Hord et al. 2014). This means that an individual user may experience multiple concerns or feelings at a particular period of time, when he or she is engaged in the process of implementation. However, as a response to these criticisms, I would argue that that the basic premise of CBAM is the

individual adopter and the 'context' (Anderson 1997, Kwok 2014) within which the innovation is being rolled out. The context plays a major role in how the innovation is being trialed, installed and institutionalized. These above-mentioned studies are indicative of CBAM's testability and applicability in specialized contexts.

3.5 CBAM Process Model

CBAM process model outlines the complex interactions involved in the innovation adoption process. It is an attempt (by its proponents) to represent the highly dynamic, intertwined, personal, and interactive process that takes place when educational institutions adopt complex innovations (Hall 1974, Hord & Loucks 1980, Bailey & Palsha 1992, George et al. 2013). CBAM does not view educational innovations as a one-off event, but rather as an individual-oriented developmental process, with a key focus on the individual-adopter's feelings and behaviour during the implementation of an innovation.

The process model (Figure 3.2) outlines the innovation 'context', consisting of a resource system, a user system, a collaborative system, diagnostic tools (SoC, LoU, and IC), intervention and probing mechanisms, and users.
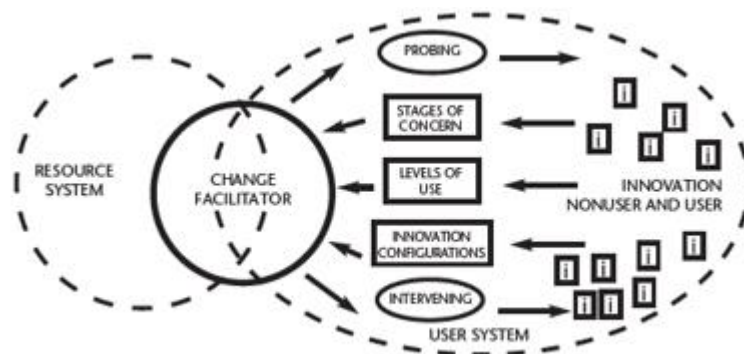
Figure 3. 2 CBAM Process Model (adapted from Hall et al. 2014)

3.5.1 Resource System

The resource system could be an individual, or a functional department within the adopting institution, or an external entity that has the capability to assist the adopters of an innovation (Hord et al. 2014). Resource systems may include policy guidelines, development templates, best-practice stipulations, procedural guidelines, informational brochures, materials, equipment, inservice training, consultant services, and or financial assistance for expanding the innovation knowledge base (Loucks & Hord 1980, Anderson 1997).

3.5.2 User System

User systems is the adopting institution. Within the context of my research, the user system is the ABC institute or the case. User systems are composed of individual users such as trainers, teachers, and or institutions interested in committing human, financial, and environmental resources to the adoption of an innovation (Hall et al. 1973, Hall 1974, Loucks & Hord 1980, Anderson 1997, George et al. 2013).

3.5.3 Change Facilitators and Probing

The user-system and the resource-system is linked by a temporal collaborative system, which encourages and promotes interaction to ensure successful adoption of the implementation (Figure 3.3).
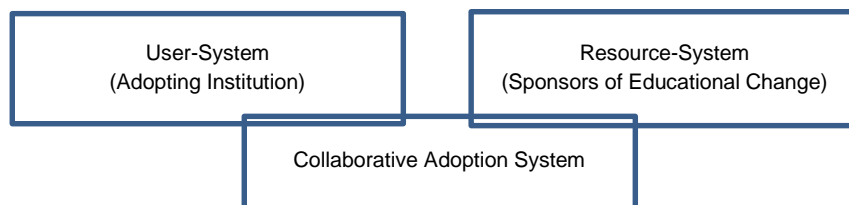
Figure 3. 3 Collaborative System (adapted from Hall et al. 1973, Hord & Loucks (1980)

The change facilitator (CF) (Hord et al. 2014) or a staff developer (Loucks & Hord 1980) is a major factor in the CBAM model that links (or mediates interaction between) user and resource systems to create a collaborative system for adoption (Anderson 1997, Hord et al 2014). The change facilitator could be a curriculum developer, program chair, instructional coordinator, internal verifier, or an external consultant, who has access to the resource system and committed to promotes continual reciprocal feedback processes between user and resource systems (Hall et al. 1973, Hall 1974, Loucks & Hord 1980, Anderson 1997, Hord et al 2014).

CF, who is a critical component of the collaboration system, mediates between the resource system and the user system. The CF catalogs or captures the usage level and concerns of individual adopters in order to establish effective collaboration strategies. These collaboration strategies include carefully selected interventions. The process of capturing user-system personnel readiness is called probing. The change facilitator facilitates the use of the innovation and plays a vital role in rolling out the innovation. From an operational perspective, the CF captures the needs, concerns, usage and capabilities of individual adopters and calls upon the resource system to design interventions and appropriate calls for actions. Intervention actions include consultation, assistance, orientation, implementation support, and guidance arrangement. Hord (1992) classifies various types of interventions such as organizational support, training, monitoring and evaluation, consultation and reinforcement, external communication, dissemination, and facilitating responding mechanisms to concerns. Hord (1992) identifies six functions attached to the job role of a CF, which includes:

- Developing articulating and communicating a shared vision
- Planning and providing resources to support educators' implementation efforts

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- Checking on progress in the use of research-based practices

- Supporting educators' professional learning and development

- Providing continuous assistance for implementation

- Creating a school context supportive of change

However, the job description of the CF pose operational challenges in regards to the identification and selection process. It is challenging to identify a profile that matches Hord's (1992) criteria-set. Roach (1992) concludes that an energizing individual who facilitates the overall adoption process, a knowledgeable and passionate champion is a key determinant to implementation success. Change facilitation, in all instances, may not be (single-handedly) managed by an individual. Rather, it could be shared among a group of individuals, who are passionate and knowledgeable, delineates the operational and strategic actions required for the adoption of the innovation. This may also include articulating a milestone-oriented measurable objectives of enhanced services. Change facilitation as an operational process could be streamlined by adopting various styles. In simple terms, this means that a CF may wear many hats depending on the context within which the innovation is subject to adoption. Factors relating to socio-cultural, political, economic, technological aspects may influence the rate and nature of adoption practices. An individual may adopt an initiator CF role if he or she has very strong and clear understanding of the proposed innovations. An initiator CF might be able to draw a detailed roadmap of the current and future developments and subsequent benefits of the innovation. The leadership style of an initiator CF might be more of an authoritative nature, encouraging and demanding team members throughout the change initiative to bring the best out of them. Initiator CFs are predominantly risk takers and willingly to experiment new demands and reforms as a result of economic or technological

disruptions. These CFs are enthusiasts and often benefit from these adoption by exploiting the potentials of first-mover advantages. Initiator CFs will also be constantly engaged in experimenting their innovation adoption approaches and may attempt multiple "out-of-the-box" approaches to reach the most creative adoption techniques. However, for initiator CFs to survive, requires an organizational context free of budget and human capacity constraints. On the other hand, there are manager CFs, who are relatively apprehensive about the innovation and are concerned about budget and other resource availability. These manager CFs rely on detailed review and research of change initiatives, before making any adoption decisions. Manager CFs follow a different delegation strategy, and prefer to undertake a majority of tasks themselves. These kinds of CFs are concerned about resource optimization and wastage, and might lead to delay in adopting the innovation. Manager CFs tend to balance between operational and strategic goals and are not as futuristic as an initiator CF. The role of a manager CF in most instances is to deeply analyze the change proposals, weigh various propositions, carry out further research, and outline the underlying threats and opportunities. There is another category of CF, the responder CF, who is way different to a manager CF and an initiator CF. The responder CF follows a pure operational approach to innovations which have already been adopted. A responder CF do not attempt to make any decisions or propose any changes by themselves. Rather, responder CFs responds to any operational tasks assigned to him or her by delegating them with coworkers. The role of responder CF is limited to managing current operational processes without spending much time on futuristic innovations and change initiatives.

User system is a social system, a context by itself, composed of the adopting institution, individual adopters, and supporting strategic and operational functions. Each individual adopter is characterized by his own set of concerns, problems, skills, agendas, and needs (Hall 1974).

The user system is supported by a more powerful resource-system to enrich the capability of the user-system. The resource system could be an individual, group or a functional unit, which is either part of the user-system, or an external individual, agency or a regulatory authority.

3.5.4 Stages of Concerns (SoC):

Stages of Concerns (SoC) is one of the diagnostic constructs within the CBAM framework that focuses on the 'feelings' or 'concerns' of the individual adopter while engaging in the process of implementation of an innovation. SoC is the most representative of the CBAM and the most widely used of the three diagnostic constructs (Hall & Hord 2011, Min 2017).

For an individual adopter of the innovation, the engagement (with the innovation) is a personalized experience, which requires timely intervention for both cognitive and affective factors (George et al. 2006). The proponents of CBAM identifies seven stages of concerns, categorized across three major dimensions or groups namely self, task and impact concerns (Table 3.5). The seven stages of concerns are distinct, but not mutually exclusive (Hall et al. 2014). This means that an individual adopter, will have, at a particular point in time of the innovation adoption process, will have varying levels of concerns as the implementation progresses. For instance, a teacher experiencing a new curriculum will have high-intense self-concerns during the early stages of the implementation, and relatively low-intense impact concerns. This simply means that this hypothetical teacher will experience high personal concerns when she begins to teach the new curriculum for the first time.

However, at the same time, these concerns represent the emotional state of affair of the adopter, which is influenced by a number of external environmental and internal organizational factors. Moreover, the emergence of high-intense concern at one particular stage (higher or lower) does not guarantee a reduction of concern at another stage. A teacher, for example

Stages of Concerns: Typical Expressions of Concern about the innovation		
	Stages of Concern	Example: Expression of Concern
IMPACT	6 Refocusing	I am worried about the currency and relevance of this curriculum, which I think is out of date. I think it's time to develop an entirely new curriculum based on the latest industry and occupational trends.
	5 Collaboration	I am concerned about how other teachers in other campuses are using this curriculum. I think we should integrate our thoughts on this curriculum to leverage its maximum potential.
	4 Consequence	I am concerned about students' perception of this curriculum. What is their experience? Are they benefitting from this curriculum? I am worried about how this would guide them to apply the concepts at workplace.
TASK	3 Management	I am afraid; I am using most of time developing materials, classroom activities and assessments to support the use of this curriculum in my classes.
SELF	2 Personal	How will the new curriculum affect me as a person? Am I competent or skilled to deliver this curriculum? Will this affect my role as a teacher?
	1 Information	I would like to know more details about the new curriculum in terms of its purpose, and expectations

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	0 Unconcern	I am not concerned about the new curriculum

Table 3. 5 Stages of Concerns (adapted from Hord et al. 2014)

3.5.4.1 Procedures for Assessing Concerns

Hord et al. (2014) proposes three methods for capturing the concerns of individual adopters, which includes 1) a face-to-face conversation, 2) the use of open-ended statement and the most widely used 3) SoC-Questionnaire (SoCQ). The proponents of CBAM recommends these methods for the change facilitator to use, as a probing mechanism, depending on the 'context' within which the innovation is being carried out.

3.5.4.1.1 Face-to-face conversation:

The face-to-face conversation assumes an informal talk, wherein the CF should query about the feelings and concerns of the adopter. For instance, a useful question would be, "How are feeling about teaching the new curriculum?", or "Do you think the new curriculum helps the learners to meet current industry demands?" Careful review of the responses from these questions may be used to generate additional questions. In addition, the CF should pay close attention to the responses, and analyze them in parts and in entirety. For instance, a teacher-response such as "The curriculum is not working really well for my students because I have no time to develop teaching materials" has two parts, if analyzed carefully. The first part of the statement might indicate that the teacher is expressing concerns about the impact of the curriculum on learners (Stage 4 – consequence concerns). The second portion of the statement indicates that the teacher is concerned about the lack of time and materials (Stage 3 – management concerns).

3.5.4.1.2 Open-ended Statement:

The second method for determining the concerns of adopters, the open-ended statement, is more formal than the face-to-face approach. Hord et al. (2014) recommends this approach to solicit concerns-related information from groups. Teacher-groups, for instance could be provided with the open-ended data collection form, for them to write answers to questions such as "When you think about the new curriculum, what are you concerned about?" Responses could include single to multiple sentences. The responses requires to be analyzed to determine the concern stage it belongs to, to prepare appropriate interventions by the CF.

3.5.4.1.3 SoC Questionnaire (SoCQ):

The third method is the most popular and widely used SoCQ instrument, a 35-item questionnaire that requires 10-15 minutes to complete by hand or using computer software. Each item is measured on a range from zero (not relevant) to seven (very true of me) scale. More details about the reliability and validity of the SoCQ instrument, and how to interpret SoCQ responses are extensively discussed in Chapter 4.

3.5.5 Levels of Use (LoU)

LoU is one the diagnostic constructs or tools within the CBAM framework, which describes the operational behaviour of the adopter of the innovation. Individual adopters have varying levels of usage at different developmental stages of the innovation. LoU construct does not focus on attitudinal, motivational or other affective aspects, rather on the behavioral aspects of the adopter.

During the initial stages of the implementation, adopters tend to exhibit a disjoint usage behavior with the innovation. There could be many reasons for initial resistance to the introduction of

educational innovation, which could include value rejection, inadequate resources to support implementation, poor capacity, or time constraints (Fullan 2015). CBAM assumes that, with continued usage, the user becomes familiarized with the innovation, and incrementally develops the necessary skills and competence to be 'seasoned' with the innovation. However, experience alone is not sufficient to develop high quality use of the innovation; additional guidance and support are required. LoU does not attempt to describe the reason for adopters' level of engagement with the system. It does not attempt to look at the implementation from a causality perspective. Rather, LoU attempts to describe the user from an operational perspective, i.e. how the adopter is 'using' the innovation.

LoU identifies eight distinct levels of usage of the innovation (Figure 3.4), each level describing a range of user-behaviors (Table 3.6), and limited by a decision point, a transition mark that determines the movement from one level to the other.
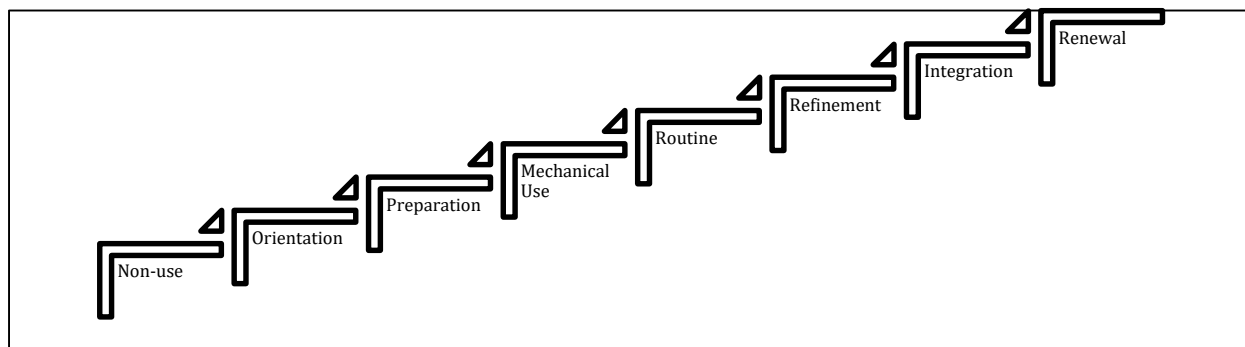
Figure 3. 4 Levels of Use (adapted from Hord et al. 2014)

DECISION POINT F—Begins exploring alternatives or major modifications to the innovation presently in use.	
Level VI Renewal:	State in which the user reevaluates the quality of use of the innovation, seeks major modifications or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.
DECISION POINT E—Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.	
Level V Integration	State in which the user is combining own efforts to use the innovation for the benefit of the clients with the related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.
DECISION POINT D-2—Changes use of the innovation in order to increase client outcomes, based on formal or informal evaluation	
Level IV Refinement	State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

DECISION POINT D-1—Establishes a routine pattern of use.	
Level IV Routine Use	Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.
DECISION POINT C—Makes user-oriented changes.	
Level III Mechanical Use	State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
DECISION POINT B—Makes a decision to use the innovation by establishing a time to begin.	
Level II Preparation	State in which the user is preparing for first use of the innovation.
DECISION POINT A—Takes action to learn more detailed information about the innovation.	
Level I Orientation	State in which the user has acquired or is acquiring information about the innovation and/ or has explored or is exploring its value orientation and its demands upon the user and the user system.

Level 0 Non-Use	State in which the user has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.

<div align="center">Table 3. 6 Levels of Use and Descriptions (adopted from Hord et al. 2014)</div>

3.5.5.1 Procedures for assessing Levels of Use

Hord et al. (2014) suggest an informal interview framework (Figure 3.5) as a useful method to describe individual adopter's levels of use of the innovation.

Figure 4.2. Informal Interview

From *Measuring Implementation in Schools: The Levels of Use* (p. 18), by G. E. Hall, D. J. Dirksen, and A. A. George, 2006, Austin, TX: SEDL. Copyright ©2006 by SEDL.
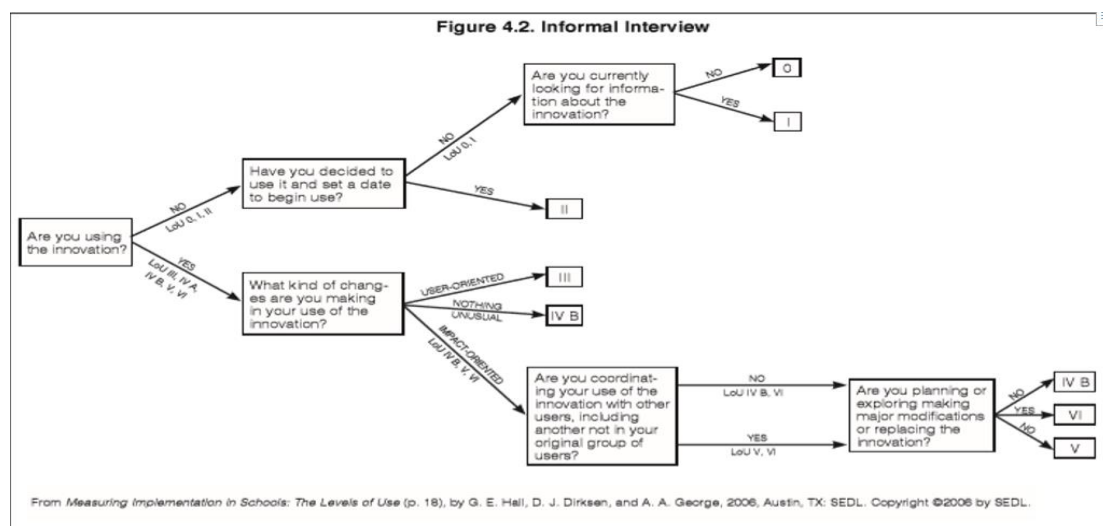
<div align="center">Figure 3. 5 Informal Interview (adapted from Hord et al. 2014)</div>

According to the interview framework (Hord et al. 2014), the probing begins with a question to find out whether the adopter is using the innovation or not. (Within the context of my research, all teacher-adopters were using the curriculum, as they do not have an option not to use the curriculum). If the answer is 'no', it clearly indicates that the adopter could be classified as a non-

user and further questions could be asked to ensure their decision to use the innovation (orientation level) or their level of interest in the innovation (preparation level). For instance, if a teacher adopter replies that she is not currently using the newly proposed curriculum, then it would be appropriate for the CF to know the reasons for not using the innovation. There might be instances where the individual adopter wants to neither get additional information nor prepare herself to use the innovation, which clearly classifies her as a LoU 0 Non-User. This terminates the interview process. In some cases, the adopter might not have started using the innovation, has not made her mind, however, is acquiring more information about the innovation, and gauging its value orientations to use it at a scheduled later date, which classifies the user within LoU I Orientation.

There are also possibilities when the adopter has decided to start using the innovation, and is currently engaged in the process of gathering more information about the innovation to use it for the first time, then the user is at LoU II - Preparation. Within the higher education setting, teacher adopters usually fall into LoU II phase, usually during the start or prior to the start of a new term where they organize their time and teaching resources to kick-start a newly introduced curriculum or training component. Individual adopters who fall into the range of LoU 0 to LoU II are non-users, who have not actually started using the innovation (Hall et al. 1999).

As the adopter actually starts using the innovation, when they fall into LoU III (Mechanical), LoU IV (Routine or Refinement), LoU V (Integration) or LoU VI (Renewal), depending on their level of operational-use with the innovation. An adopter is at LoU III Mechanical if she is in partial concert in regards to her use of the innovation, which is somewhat disjointed and lacks a detailed scheme of work (Hall et al. 1999). At this level, the adopter's behavioral approach to innovation use is disjointed would attempt preparing her personal schedule, or developing supporting materials

(classroom exercises or activities) to equip her as an individual to 'operate' the innovation to her own benefit.

Once the user is accustomed to the innovation, the user gradually finds herself in the 'personal-comfort-zone', and falls into LoU IV A – Routine. In an educational setting for instance, teachers at this level make little or no adjustment to the innovation; they will be doing what they did last term or year (Hall et al. 1999). The focus is more towards making oneself aligned with the characteristics of the innovation. The innovation, at this level is perceived to be primarily adopter-focused and not every behavioral act at this level is extended beyond their personal use of the innovation.

When the adopter extends the use of the innovation beyond her confinement to the benefit of the client or the students (Anderson 1997, Hall et al.1999, Hord et al. 2014), then the usage level is at LoU IV B – Refinement. Here, the adopters attempts to make variations to the innovation for the benefit of the student. This includes enrichment and elimination of teaching and learning materials making them more learner-friendly. The developmental pattern of usage is quite evident with this construct as it progresses from an individual adopter's comfort zone, extending the possibilities of the innovation to the fulfilment of student needs.

The usage context is further expanded to LoU V – Integration, when the adopters attempts to invite the collaborative inputs of other colleagues (who are using the innovation) to achieve a collective impact for the students. Here it is purely student-focused and any collaborative initiative is to maximize the use of the innovation to ensure the highest levels of implementation fidelity for enhancing the learning experience of the students. On the contrary, if the collaborative enthusiasm

is confined to improving the personal experience of the innovation, then the adopter falls into LoU III Mechanical level (Hord el al. 2014).

LoU VI – Renewal is when the adopter begins exploring alternatives and attempts to explore the latest trends in the field of practice for the maximum benefit to the client. It is achieved through major modification such as rewriting the qualification itself, or making a significant change to the overall learning outcomes of a specific module to accommodate new occupational competency requirements. For instance, a teacher-adopter might suggest a significant transition of the current curriculum from a traditional classroom based learning system to a blended or a completely e-learning platform.

3.6 Application of the CBAM in educational settings

3.6.1 School Setting

CBAM as a framework, attempts to model the complex process of adopting educational innovations, which involves many individuals and highly dynamic and interactive processes (Hall 1974). Christou et al. (2004) explored the curricular concerns of four different groups of 655 primary school teachers in Cyprus in relation to the implementation of a new mathematics curriculum and the use of new mathematics books. The study used SoCQ to capture teacher concerns and found that teachers in general has 'management' concerns, meaning that they are more worried about the tasks and processes (Berg et al. 2000) involved in using the new textbook. Similar studies embraced the CBAM theory to explore the concerns of schoolteachers in regards to the implementation of innovative pedagogical practices in a primary school in Bangladesh (Park 2012), introduction of a new English language curriculum in China (Wang 2014), introduction of

a new common core aligned mathematics program in New York (George 2015), introduction of a new physical sciences curriculum in South Africa (2018). Cruz (2014) applied the concepts of CBAM to measure the effect of change facilitation coaching in an urban elementary school in Arizona. Rakes & Dunn (2015) studied the concerns of 102 pre-service and inservice teachers' concerns in regards to online teaching. Chumbley (2016) attempted to determine high-school teachers' perception of impact of the agricultural dual enrollment program in a school in New Mexico. In an interesting study, McKinney (2016) attempted to determine the difference in concerns between two groups of teachers in response to the administration of a specialized intervention program. Vocht et al. (2017) explored the concerns of 67 teachers from 10 European countries in their adoption of Responsible Research and Innovation (RRI) into teaching. Sarfo et al. (2017) explored the concerns of schoolteachers in Ghana in regards to their adoption of the new Information and Communication Technology (ICT) curriculum in basic education. Avery (2017) attempted to delineate the relationship between teacher concerns and self-efficacy in their study within an inclusive classroom setting. Yan and Deng (2019) surveyed 425 Chinese teachers using SoCQ, and explored their concerns towards inclusive education drawing on the CBAM framework. CBAM enables a more detailed understanding of an individual's feeling or attitude towards an innovation and the extent to which an innovation is being used - to the level of the individual user or to the level of the customer, or even beyond to the level that the innovation is being exploited and tested to ensure its potential. The personalized usage level and individual concerns of a specific user is highly useful for regulators or leadership to provide adequate support and devise necessary or appropriate personalized interventions to ensure project success. Fuller's developmental conceptualization theory advocates that individuals tends to have varying levels of concerns and 'attitudes' tat different stages of their interaction with the innovation. Studies indicate that

individual's concerns and attitudes shift from self (personal) to task concerns and finally influence concerns. Every educational innovation has student achievement or wellbeing as its primary goal and for this to happen, it is crucial to understand the constructivist premise, which has its greatest influence drawn from teacher-students communication. CBAM views that 'change often requires not only gaining new skills, but shifting one's attitudes and beliefs'.

3.6.2 Higher and Vocational Education Setting

Turns et al. (2007) explored the teaching concerns of engineering educators in an engineering college in the US. Hollingshead (2009) used CBAM as a strategic framework to increase awareness of the change process associated with the implementation of a character education program in Texas. Ianneillo (2009) conceptualized the theoretical aspects of CBAM to investigate the concerns and levels of use of intern teachers, with an aim to assist colleges and universities with their teacher education programs. A two-year longitudinal study explored the concerns of 71 agricultural education (Shoulders & Myers 2011) teachers using the SoCQ construct found that teachers were most concerned with issues related to collaboration.

Within the vocational education settings, Saunders (2012) explored the concerns of 27 vocational education teachers in Western Australia to assess the impact of a professional development program. Using the SoCQ and LoU constructs of CBAM, the study found that majority of the group experienced high level of collaboration concerns. In regards to the LoU, the study identified that 41% of users are LoU IVA – Routine level (who have no plans to adapt or change), 52% of users at LoU IVB – Refinement level (who are actively involved in maximizing student outcomes) and 7% of users at LoU V Integration level (who coordinate and work with others to improve student

outcomes). Educational reforms that have neglected the human-factors associated with educational innovations and a considerable majority of them fails to meet their intended objectives. This variability between intentions of policy makers and practitioners of innovation requires to be explored in depth and breadth. CBAM-based research studies explore these variability aspects of innovation implementation from different dimensions. Park (2012) attempts to understand the details of the variability aspect of innovation in his study that explores the change process of 51 primary school teachers in Bangladesh using SoC and LoU constructs of the CBAM framework.

Despite the popularity and wider usage of CBAM in educational innovation projects and applied settings, it has faced controversies, which I attempt to outline to understand the possible misconceptions while adopting CBAM as a theoretical framework.

3.7 Application of CBAM in this research

It would be interesting to discuss how the CBAM has been applied in this research. The characteristic features of the CBAM and its application in various other studies focusing educational changes have been discussed in the previous sections. As this research investigates the views and concerns of vocational teachers, a robust framework (such as the CBAM), grounded on the theories of educational change was deemed appropriate. This research utilizes the possibilities of two diagnostic constructs (SoC and LoU) of the CBAM to capture both the affective and the behavioral aspects of vocational teachers, adopting the Q+NOSS-based curriculum.

The SoC construct of the CBAM is adopted in this research to capture the "affective" traits or the "attitude" of teachers towards the adoption of the new curriculum. In simpler terms, the SoC construct facilitates the exploration of teachers' feelings, thoughts, and reactions to the new

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curriculum. In this research, this would help the researcher to see where the teacher stands in response to the adoption of the new curriculum. This would provide the researcher a contextualized and unique profile of an individual teacher to know whether he or she has more self, task, or impact concerns. Since the Q+NOSS-based curriculum has been offered at various qualification levels for different disciplines, teachers' concerns tend to vary proportionally. It would be interesting to know these variations and factors that influence these concerns. Teacher concerns, both at individual and institutional level are captured in this research using a mixed methods approach, combining the SoC-Questionnaires (SoCQ) and semi-structured interviews. By doing so, an in-depth understanding of the feelings and reactions of teachers could be identified for further analysis and exploration. Individual teachers would be interviewed to understand their attitude to the newly reformed Q+NOSS-based curriculum. The SoCQ would include questions that would draw or invoke teachers' personal concerns, management concerns, or collaboration concerns. Within the context of this research, teachers at the ABC institute come from various socio-cultural backgrounds, different educational settings, and carry a range of vocational and academic experiences. Consequently, their concerns and attitude towards the educational innovation would be different in some cases unique considering their unique profile and response to educational innovations. The SoCQ would bring out teachers' personal curiosity or interest in the new curriculum, their feelings about time-sufficiency, resource availability, learner-impact, collaboration possibilities, and overall relevance.

On the other hand, the LoU construct of the CBAM is applied in this research to describe the behaviour of the teachers through various stages of the innovation. This is highly significant, as it would inform the research about how ABC teachers are using the Q + NOSS-based curriculum in

its actual sense of implementation. It is very important to know teachers' usage level of the new curriculum. As the Q+NOSS-based curriculum is rolled out across various campuses of the ABC institute, it is clear that the teachers have started using them. Teachers' usage level may depend on how supportive and conducive the environment is, in order for the teacher to use the new curriculum. This research adopted a semi-structured interview approach to identify the level of usage of the new curriculum. By doing so, the researcher would be informed whether the teacher is mechanical user, routine user or someone who is a champion of the new curriculum, challenging and suggesting the new curriculum intentions.

Drawing from the knowledge constructed out of the SoCQ and LoU interviews, this research would contribute to the development of a concern profile of individual teachers who are engaged in the adoption process. Furthermore, it would generate a comprehensive understanding of the intensity of teachers concerns and overall usage levels. These findings are highly significant as they could effectively feed into the development of appropriate and timely intervention strategies to enhance the implementation of the Q+NOSS-based curriculum.

3.8 Limitations of the CBAM Model

Various studies have reported on the limitations of the CBAM in regards to aspects relating to its theoretical underpinning, plausibility, particularly within the scope of higher education research settings. As a framework, CBAM makes two critical claims. Firstly CBAM asserts itself as a user-centric model. Secondly CBAM maintains itself as an "enabler" for change facilitation. To a greater extent, these claims are valid considering the potential usage of the two diagnostic constructs (SoCQ and LoU) proposed by the CBAM. However, it would be interesting to analyze the extent

to which CBAM is user-centric and an enabler. The diagnostic constructs are found to be limited to identifying the concern-stage and the usage-levels of individual users. The scope of CBAM appears to culminate with this identification process. For instance, imagine a hypothetical user is identified with a multi-peak profile having higher levels of informational and personal concerns. CBAM does not provide any insights into the "causation" dimension when it comes to individual user's concerns. The diagnostic tool does not capture the reason or the underlying problem that has given rise to these informational and personal concerns. The broader set of definition provided by the CBAM framework does not inform researchers about the real cause of these concerns. When it comes the LoU diagnostic tool, CBAM emphasize on a binary approach to identifying the usage-level of an individual user. This process is carried out using a "yes-or-no" question that helps the researcher to arrive at the current usage level of the individual user. However, CBAM framework is limited to that knowledge, and does not technically facilitate the researcher in exploring the inherent issues, institutional challenges or related conflicts leading to that circumstance. There could be a variety of issues encountered by individual teachers when it comes to adopting an innovation. Personal concerns might arise from issues relating to social, cultural, technological, financial, and political and in some cases ergonomic. It would be less effective for change facilitators to device intervention strategies if they are not aware of the critical issues faced by individual users. For instance, lack of motivation may be one of the key reasons for teachers who exhibit very high personal concerns. A detailed conversation with the individual teacher may reveal insights about her remuneration and lack of professional development. The challenge lies in the determining those aspects which are categorized under an overarching theme called "personal concerns". What concerns are personal and what are not? CBAM, as a theory has serious limitations when it comes to decomposing and categorizing concerns. However, these limitations could be

resolved by extending the diagnostic constructs to include additional data gathering techniques. Within the context of this research, additional qualitative interviews were added to the CBAM construct to explore more detailed information concerning issues vocational teachers face as they adopt an innovation.

3.9 Summary

This chapter has set the background of the research by giving a detailed account of the theoretical and practical aspects of the CBAM concepts. This chapter presented a timeline of various theoretical models that shaped up and informed the current CBAM framework. Furthermore, the chapter showcased a variety of educational innovation reforms, where the CBAM is effectively used to obtain adopter's views and thoughts about the change, how the changes are being adopted, and the challenges involved in the adoption process. More importantly, the chapter exclusively discussed the application of the CBAM in this research, its contextual relevance and the extent to which its theoretical underpinning and diagnostic constructs address the research questions. A more specific and pertinent analysis of the CBAM diagnostic constructs and how they address the research question is more detailed in Chapter 4. The methodological framework of this research, description of the various methods used in this research and how they explicitly address the research questions are discussed in Chapter 4.

Chapter Four: Methodology

4.1 Introduction to the chapter:

This chapter describes the methodology used in guiding this research, drawing on both the aims and purpose of the research. Furthermore, the chapter discusses in detail the contextual settings in which the research takes place, the characteristics and other attributes of participants, and the data collection methods used in the research. In addition, it explains the rationale that informed the researcher's decisions in regards to the choice of methodology, which includes data collection techniques and data analysis approach.

4.2 Introduction to the methodological aspects:

This research is a case study carried at three campuses of a government vocational educational institutes in the UAE. These campuses are implementing the Q+NOSS-based vocational curriculum. The research aims to investigate the views and concerns of vocational educators in these campuses as they adopt the reformed Q+NOSS-based curriculum. The research also explores the extent to which the vocational educators implement the curriculum. Accordingly, the research attempts to explore factors that influence the adoption of the curriculum, and the inter-relationship, if any, between these factors and the degree to which they influence each other. Considering the different dimensions of the phenomenon the research aims to explore, a multiphase mixed-method approach has been followed in this research relying on various data collection strategies.

The first phase of the research describes and synthesizes the reformed Q+NOSS-based curriculum, with a focus on its relevance within the context of the research. As a research method, document analysis was used to review the curriculum documents.

The second phase of the research identifies the stages of concern vocational educators are currently at, in regards to the adoption of the curriculum. A deeper analysis of the stages of concerns also enabled the researcher to capture the views and concerns of vocational educators, and also to discern factors that influence their views as they adopt the reformed Q+NOSS curriculum. These phases relied on both qualitative interviews and questionnaire-based surveys to gather vocational educators' views and concerns.

The third phase of the research explores the levels of use of the reformed curriculum. Here the focus is on the behavioral aspects of vocational educators in regards to the usage of the Q+NOSS-based curriculum. Findings and further analysis of the responses of vocational educators informed their behaviour and usage levels and practices. Also the research outcomes shed light on the extent to which the reformed curriculum is being adopted by the vocational educator. The results of all these three phases are analyzed and interpreted separately and are integrated to address the main research question and sub-questions as follows:

Main Research Question:

What are teachers' views and concerns about the reformed VET curriculum in regards to its development, level of engagement, adoption processes and enactment in the classroom?

Sub-Questions:

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1. What is the reformed VET curriculum?

2. What are teachers' concerns and the extent to which they influence the adoption of the reformed curriculum?

3. To what extent does demographic characteristics of the teachers influence their concerns, and why?

4. To what extent does concerns influence each other?

5. To what extent are the curriculum implementation is congruent with those mandated by the regulatory body and why?

The methodological orientations and choices to address the above-mentioned questions requires careful consideration and recognition of the social, cultural, and occupational context within which these teachers operate. The context has significant relevance to my research as the theoretical framework focuses on the affective and behavioral responses and interactions of adopters within a specific and distinct context. The meaning in context - the socio-cultural and occupational context - which, in my research setting is the ABC institute - plays a vital role in capturing teachers' interpretation of the innovation.

4.3 Philosophical Worldview

It is important to philosophically position the research as it would not only delineate a researcher's perspective, but also necessitates 'what one believes about the nature of reality (also called ontology) and the nature of knowledge (epistemology)' (Guba 1990, Merriam 2009). Guba (1990) uses the term 'paradigm' to describe the 'basic belief systems' held by a researcher to guide his inquiry. Guba emphasizes the significance of these belief systems and identifies them as the

'starting points or givens that determine what inquiry is and how it is to be practiced' (Guba 1990). Examining and knowing one's own orientation to fundamentals aspects about the nature of reality, the purpose of doing the research and the type of knowledge that is intended to be produced lays the foundation of a research project (Merriam 2009). This belief system or the philosophical stance, or the general orientation is informed by a researcher's 'philosophical worldview' - 'the orientations about the world and the nature of research that a researcher brings to a study' (Creswell 2014). The philosophical worldview and orientations are determinants for embracing 'a qualitative, quantitative, or mixed methods approach in their research (Creswell 2014). The researcher is convinced that this philosophical orientations would, to a greater extent influence the choice of the research approach, and other key decisions in every phase of this research. Creswell (2014) posits that worldviews 'are based on discipline orientations, student advisors/mentors' inclinations, and past research experiences'.

This research examined the phenomena that emerge as a result of the interaction between teachers (innovation adopters) and innovation (e.g. new curriculum) within a contextual boundary referred to as the user-system (Hord et al. 2014). An individual adopter is arguably influenced by a variety of contextual factors, and each adopter may have a unique pattern of experience with the innovation. The Concerns-Based Adoption Framework (CBAM) describes these relationships (between the adopter and the innovation) mainly from two perspectives - the affective and behavioral orientations (Anderson 1997, George et al. 2013, Hord et al. 2014, Kwok 2014, Voct et al. 2017). Consequently, individual adopter may construct their own perception or meaning of the single innovation. The innovation itself might be interpreted differently, and each adopter might attach a separate meaning to the innovation and implementation expectations. These characteristics

underpin the constructivist paradigm, where there are 'multiple realities, or interpretations, of a single event' (Merriam 2009). Hence, the philosophical underpinning of this (my) research as Creswell (2014) explains is:

> "In this worldview, individuals seek understanding of the world in which they live and work. They develop subjective meanings of their experiences...These meanings are varied and multiple, leading the researchers to look for the complexity of views...Often these subjective meanings are negotiated socially and historically. They are simply imprinted on individuals but are formed through interaction with others (hence social constructivism) and through historical and cultural norms that operate in individuals' lives" (pp.8).

4.4 Methodological and analytical approach

Selection of a suitable research methodology was drawn from the phenomenon under research, research questions and my philosophical orientation discussed earlier in this chapter. This research seeks to explore the two aspects of the phenomena – affective factors that influence the adoption of the new vocational curriculum, and the behavioral factors that influence the level of usage of the adoption and its congruence with the intentions of the innovation. The researcher is interested in both exploring the behavioral orientations and quantifying the stages of individual adopter's concerns. This research adopts CBAM as a theoretical lens to examine the contextual relationship between the adopter and the innovation, between the individual teacher and the curriculum in regards to its implementation demands. Since its development in the early 1970s, this model has been widely used for measuring and explaining educational change, including that resulting from

curricular reforms, and it is arguably one of the most conceptually robust and empirically grounded models for examining change (Anderson 1997).

Van den Berg (1993) maintains that attempts to examine and describe teacher concerns represent a 'new focus for CBAM theory and research', and is potentially relevant to the study of contemporary restructuring initiatives and educational reforms. As Saunders (2012) maintains, my research does not present CBAM as a 'panacea' for examining teacher concerns, but instead 'its applicability and usefulness are described and discussed in relation to the adoption of a national vocational curriculum in a government institution (ABC Institute) in the UAE. Anderson (1997) asserts that knowledge of various components of the CBAM framework 'provides a rich conceptual platform for predictions about teacher change. A diagnostic framework such as CBAM is critically significant for devising effective interventions to support and guide teachers for achieving intended curriculum implementation fidelity and enhancing the experience of learners. Hord et al. (2014) maintains that:

"Facilitators have a resource system available to help individuals change. The resources may be rich or quite thin. Which resources and how and when to use them is grounded in a 'concern-based diagnosis" (p.10).

Researcher's previous role as a vocational teacher and a vocational curriculum developer has helped me to have a better understanding of the phenomena that emerge as a result of the interaction between various systems during the adoption process. The researcher has also embraced the role of a facilitator or a change agent who facilitates effective mediation between the curriculum developers and the vocational teachers. Researcher's current role also includes regulatory

monitoring of vocational institutions, which includes the inspection of organizational standards contributing to maintaining teacher standards, from a human resource management perspective. As an outsider researcher, the researcher perceive the CBAM theoretical lens as an intervention mechanism to improve teacher commitment and enhance learner experience. I discuss the potential benefits and limitations of these roles in section 4.6 (Ethical Considerations).

This research proposed an exploration of vocational teachers' concerns in regards to the implementation of a new curriculum in a vocational education institute in the UAE. An understanding of these concerns may help inform senior leadership team and policy makers devise appropriate intervention strategies to support teachers to effectively implement the innovation. Henceforth, the key purpose of this research was to examine the views and concerns of vocational educators while they are engaged in the adoption of the reformed vocational curriculum.

4.5 Research Strategy

To design a suitable strategy to carry out this research, the researcher surveyed numerous approaches employed in previous CBAM-based research studies. Extensive literature review processes included in-depth analysis of monographs written by original CBAM team (Hall and Hord 1987; Hord, Rutherford, Huling-Austin, and Hall 1987) and CBAM-influenced studies from 1980 until 2019. These explorations and surveys indicate that a vast majority of the CBAM-based studies focus on the concerns of school teachers (Anderson 1997, Saunders 2012, George et al .2013), considering the school as a case. These studies examine teacher concerns through a variety of conceptual lenses such as social, political, organizational, and pedagogical employing the original CBAM-recommended diagnostic tools (SoC, LoU and IC) either used independently or in

combination. A range of CBAM-influenced, longitudinal as well as cross-sectional studies (George et al. 2013) appears to adopt case study as a research strategy. Marsh (1987) investigated the concerns of schoolteachers' concerns regarding the implementation of a new social studies curriculum. Using an Australian elementary school as the case, this longitudinal study used the SoC questionnaire and LoU-interview methods as recommended by the original CBAM framework to facilitate data collection.

Having identified case study as a suitable research strategy, which supports multiple data collection methods, this research adopted three different techniques (document analysis, semi-structured interview, and questionnaire-based survey) for gathering data, as discussed in the following subsections. A summary of the data collection methods adopted to examine teacher adaptive and behavioral concerns are shown in Table 4.1.

Research Question No.	Research Question	Data Collection Method(s)	
1	What is the reformed VET curriculum?	Document Analysis	
2	What are teachers' concerns and the extent to which they influence the adoption of the reformed curriculum?	Semi-structured Interview	Questionnaire-based Survey
3	To what extent does demographic characteristics of the teachers influence their concerns, and why?	Semi-structured Interview	Questionnaire-based Survey
4	How and to what extent does concerns influence each other?	Semi-structured Interview	Questionnaire-based Survey

5	To what extent is the curriculum implementation congruent with those mandated by the regulatory body and why?	Semi-structured Interview	Questionnaire-based Survey

Table 4. 1 Summary of matrix of data collection methods used to explore the phenomena

This research was conducted across three campuses of ABC institute, within the emirate of Abu Dhabi, UAE. For the purpose of this research, this research will use pseudonyms for these three campuses as JZ, JL, and BN. These three campuses offer certificate and diploma programs which follow the new curriculum framework based on the Q+NOSS model. Since the research aimed to examine teachers concerns in regards to the adoption of the Q+NOSS-based curriculum, all those teachers who are assigned to teach the new curriculum, across these campuses were requested to participate in the research.

To gain an in-depth understanding of the phenomena, the research adopted a convergent parallel mixed methods approach (Creswell 2014). There are several reasons for choosing a mixed methods approach in the first place and convergent mixed methods in particular. 'A stronger understanding of the problem or question' (Creswell 2014) is the central premise of mixed methods. Within the context of this research, the researcher considers, in concert with the mixed methods centrality, that a greater understanding of teachers' concerns towards the curriculum innovation requires both quantitative and qualitative data, than having either one of them. Another reason for the selection of mixed methods has to do with the theoretical underpinning of the CBAM framework and its recommended diagnostic constructs, based on which the research is posited. The two CBAM diagnostic constructs (SoC, and LoU) recommend the usage of a quantitative survey-based SoC Questionnaire (SoCQ) to collect teacher concerns-related data, and a qualitative interview technique to capture the levels of usage in regards to the innovation. Therefore, in order to have a

deeper understanding of both adaptive and behavioral responses to the innovation, this research considered the use of both the quantitative SoCQ-based survey and qualitative LoU-interview to collect data.

Further, the convergent parallel mixed methods approach was found to be relatively preferable considering the level of administrative challenges in regards to data collection from government institutions. This is related to obtaining consent and administrative approval to collect data from vocational teachers. As per the official approval from the ABC institute senior management, the researcher was granted permission to meet vocational teachers only once during the term, within which the data collection needs to be completed. Teachers' availability was one of the key challenges, in addition to other concerns which will be detailed in the section that discusses ethical issues. Considering this administrative constraint and availability challenges, it was decided by the researcher to adopt the convergent mixed methods to effectively utilize the permitted time-period to gather teacher responses in a single meeting.

4.6 Institution Background: ABC Institute

ABC institute was established in 2007 by His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the United Arab Emirates (UAE) and ruler of Abu Dhabi. ABC institute operates five across the UAE.

ABC institute's vision is 'to be the benchmark of technical and vocational education and training in the UAE'. ABC institute's mission 'to empower Emiratis with the competencies needed to contribute to the nation's future development through workplace focused, lifelong technical and vocational education and training' supports this. ABC Institute offers qualifications in a range of

subjects including foundation English, mathematics and science, business, engineering, information technology, environmental health & safety, and continuous education.

The Abu Dhabi Centre for Technical, Vocational Education, and Training (ACTVET) as a registered training provider approve ABC institute. In 2016, ABC institute received 'Conditional Endorsement' to offer 36 Qualifications from the National Qualification Authority (NQA) / Vocational Education and Training Awards Council (VETAC). Out of these 36 qualifications, ABC institute, at the time of conducting this research, offers nine qualifications across its campuses.

4.7 Population and Sample Description

 The target population consisted of 105 vocational education teachers in three campuses (JZ, JL, and BN) of ABC institute. The sample size consisted of 47 teachers teaching the newly launched Q+NOSS-based curriculum in Business, IT, Health and Safety, and Engineering qualifications. A list of teachers' names, and their respective campuses were obtained officially from the ABC institute. Out of 47 teachers, 28 teachers (i.e. 60%) across three campuses responded to the survey questionnaire and agreed to be interviewed, as shown in Table 4.2.

Campus	Population	Sample	Respondents	Percentage
JZ	43	15	10	35.7%
JL	44	16	10	35.7%

BN	18	16	8	28.5%
Total	105	47	28	

Table 4. 2 Sample size and respondent percentage

4.8 Instrumentation

The following section describes the use and purpose of the instrumentations used in this research. The instrumentation used in this research includes document analysis, qualitative semi-structured interview, and questionnaire-based survey.

4.8.1 Document Analysis

 Merriam & Tisdell (2017) define document analysis as an unobtrusive data collection strategy that evolves from the topic of enquiry. Documents refer to a wide range of written, visual, digital, physical material or "other meaningful matter" (Salkind 2010) "such as images, work of art, whether mass produced, created in conversations, or private". Unlike other methods, such as participant interviews and observations, document analysis does not always directly address the research question. The answers to the research questions require to be inferred by interpreting those available documents and contextualizing them to address specific aspects of the research (Salkind 2010). As a scientific tool and a systematic research technique, document analysis can provide interesting insights about the phenomena, or in some instances might lead to accidental uncovering of valuable research data (Merriam & Tisdell 2017). The process of document analysis follows an iterative model (Figure 4.1) that starts by locating relevant documents, making inferences about

the content, and interpreting the results to contextually address the research question (Salkind 2010).

The figure contains the following labels:

Content analysis

Interpretation ← Inference ← Description

Analytical construct

Research question

Context
Conceived by
content analyst

Answer

Stable correlations
known or assumed

Texts

The many
worlds
of others

Validating evidence

Meanings, references, and uses of Texts
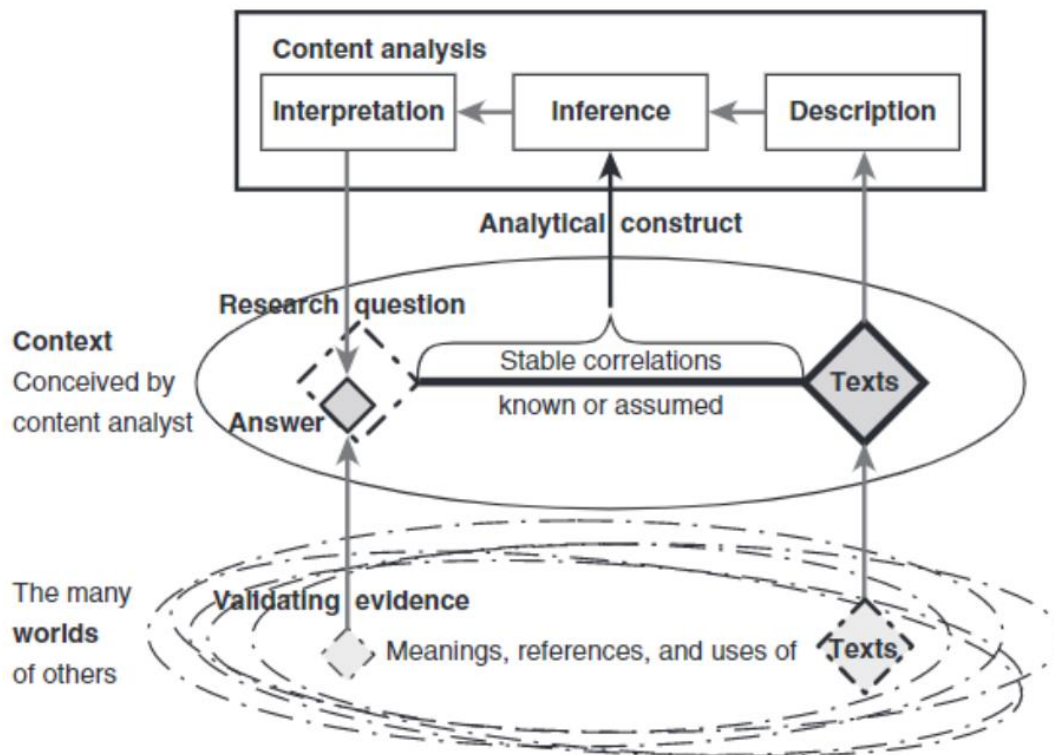
Figure 4. 1 Framework for Document Analysis (Adapted from Salkind 2010)

Locating appropriate documents that contextually align with and serve the research purposes are of significant importance. As Merriam & Tisdell (2017) asserts, researchers must verify the author, place, date of publication, and accuracy of the documents chosen for analysis. For the purpose of this research, regulatory documents were available on public domain of NQA's website. Also, the authenticity of the documents were ensured by reconfirming with an NQA representative.

The second stage of making inferences and interpretations of the documents comprise a variety of coding procedures, which includes counting, frequencies, descriptive statistics, or narrative descriptions (Fraenkel, Wallen & Hyun 2019). Making meaningful inferences from document text is relatively challenging mainly because of the unobtrusiveness factor, which is an inherent characteristic of any document. This is also one of the main advantages of document analysis, wherein the document is not influenced by the researcher's presence or interference (Merriam & Tisdell 2017, Fraenkel, Wallen & Hyun 2019). Another advantage of document analysis lies in its convenience and the cost factor. Documents in most cases are easily accessible, freely available, and could be retrieved without consuming enormous amount of time (Merriam & Tisdell 2017). However, on the flip side, it should also be considered that documents are not developed for research purposes, which is one of its limitations. Documents may not be comprehensively detailed so as to address researcher's enquiry (Merriam & Tisdell 2017).

A more serious concern about document analysis is about establishing validity where usually the interpretation of document analysis data assumes that what is clear to the researcher remains clear to others and what is unclear remains unclear to others (Fraenkel, Wallen and Hyun, 2014).

Within the context of this research, document analysis is adopted to address the first research question - what is the reformed VET curriculum? By adopting the document analysis strategy, this part of the research attempts to explore the conceptualization of the reformed VET curriculum model in terms of its definition, the developmental processes, the underpinning pedagogical structure, the alignment with occupational requirements, and implementation characteristics.

Since this research conceptualizes curriculum as an integration of both the intended and the taught curriculum, two categories of documents were selected for analysis - regulatory documents published by the NQA and program-specific documents published by the ABC institute. Both these categories of documents were selected based on two different sampling techniques. Regulatory documents were selected based on purposeful sampling technique. In purposive sampling, according to Fraenkel, Wallen, & Hyun (2019), the researcher selects a sample based on prior information. Considering my previous role as a curriculum developer, and having the prior knowledge of the curriculum development processes, purposive sampling technique was adopted to select regulatory documents pertaining to the reformed vocational curriculum. Regulatory documents published by the NQA falls under the first category, which are conceptualized as the intended curriculum. Latest versions of the regulatory publications pertaining to qualification development in general and vocational education in particular were subject to extensive review and analysis. Regulatory publications such as the Qualifications Framework Emirates Handbook (QfE Handbook), VETAC Q+NOSS System Guidelines, amendments to the RNDC process document, and NQA UAE NOSS template were carefully chosen to be included in the analysis process. The second category of documents or the program-specific documents were selected by adopting a cluster random sampling technique. Program-specific documents were randomly selected from different clusters such as IT, Business, Health and Safety, and Engineering, pertaining to various levels of qualification. Vocational curriculum development policies, program-specific qualification units, and Training and Assessment Guides (TAGs) used by the vocational teachers were included in this category.

Curriculum documents for a specific qualification level includes 1) the program-specific Q+NOSS 2) individual qualification units, which outlines the performance criteria (PCs), and the learning outcomes (LOs) of a specific qualification unit, and 3) the training and assessment guide (TAG). Any Q+NOSS is built on the curriculum framework proposed by the Qualification Framework for Emirates (QfE), that outlines the knowledge, skills and aspects of competence for each qualification level.

Each qualification unit within a specific Q+NOSS has an equivalent work application component, which forms the basis of student internship. This also defines the scope of activities to be completed or expected to be completed at the workplace.

In concert with the theoretical framework that underpins this research, the first two constituents, i.e. the Q+NOSS document and individual qualification units could be referred to as the "intended curriculum", and the TAG as the "taught curriculum". The intentions of the curriculum are articulated by subject-matter experts in coordination with the other key stakeholders including industry representatives. This process is under the supervision of the regulatory authority (NQA) and is formalized through a Recognized National Development Committee (RNDC) for developing national qualifications. On the other hand, the TAG is the vocational teachers' translation of the Q+NOSS, which could be perceived as an operational document such as a "lesson plan" or a "training guide", which would enable the teacher to effectively adopt and implement curriculum objectives. The TAG identifies the teaching topics aligned with the predefined LOs and PCs, the assessment types and other classroom-delivery aspects pertaining to the execution of the unit. The TAG is what could be referred to as the "taught curriculum", and are developed in most cases, by

teachers to teach a particular qualification unit. Teachers are required to develop TAGs for each qualification unit, which further informs preparation of a lesson plan and assessment instruments.

The aim of analyzing these documents is to understand and describe the underpinning curriculum framework that informs the Q+NOSS, in addition to the extent to which the three strands - knowledge, skills, and aspects of competence, are reflected in the taught curriculum. The cross-verification between the intended curriculum and taught curriculum is captured using a checklist based on the three strands identified in the QfE framework. Each aspect of the taught curriculum is benchmarked against the QfE and categorized into knowledge, skills, and aspects of competence. Three types of responses (yes, somewhat, and no), would be recorded against each category followed by the comment box to highlight any additional remarks.

4.8.2 Stages of Concerns Questionnaire (SoCQ) Survey

This research used the SoC-Questionnaire (SoCQ) to provide a quantitative representation of ABC teachers' views and concerns. Surveys in general aim to capture certain characteristics of a group by studying a sample, rather than from every member of the population. In essence, researchers are interested to find out how the participants of a group distribute themselves on more variables such as age, industry experience, teaching experience, and highest qualification for example. Designing a survey method include consideration of a range of factors. Key factors include a) identifying the purpose of the survey, b) rationale for choosing the design, c) determining the population and the sample size, d) determining the sampling technique, e) defining the survey instrument, and f) timeline for administering the survey (Creswell 2014).

Within the context of this research, the purpose of the survey is to capture the views and concerns of vocational education teachers at the ABC institute. The questions included as part of the survey invoke vocational teachers to express their feelings, attitudes, behaviors, or any other emotions as they adopt a newly introduced curriculum. These responses would further analyzed and interpreted to arrive at certain kinds of inferences.

The rationale for including a survey to capture teachers' views and concerns draws fundamentally from the theoretical stance advanced by the CBAM that guides the methodology for this research. Furthermore, the survey (or the SoCQ) is one of the diagnostic constructs of the CBAM framework which is a predefined questionnaire consisting of thirty-five questions which could be assessed on a 0 to 7 Likert scale.

The survey adopted by this research is a cross-sectional survey, where the data is collected from a sample of teachers drawn from a pre-determined population. For the purpose of conducting this research, the research site (ABC institute) and the population (ABC teachers) were determined prior to the collection of data.

The population (ABC vocational teachers) for this research was determined in advanced considering the fact that this is a case-study research investigating teacher concerns. ABC institute is one of the first governmental vocational institutes to adopt the reformed Q+NOSS-based curriculum. ABC teachers were one of the first set of teachers who were subjected to teach Q+NOSS-based curriculum.

This research involved stratification of ABC teachers before selecting the sample. ABC teachers who are teaching Business, IT, Health and Safety, and Engineering qualifications, and following the newly reformed Q+NOSS-based curriculum were identified to be form in the sample. This amounted to forty-seven teachers in total, across three ABC campuses. Official permission was

obtained from the directors of these three campuses, who further informed their respective program chairs and teachers about the purpose of the research, providing the teachers with the option to either accept or reject the questionnaire-response request.

The survey was administered on the internet using an online survey tool developed by the Southwest Educational Laboratories (SEDL). Researcher visited individual ABC campuses to meet vocational teachers requesting their participation in the survey process. Teachers who expressed their consent were initially introduced to the purpose of the research, followed by a brief about the online survey. The online survey was launched on a web-browser that run on researcher's laptop and participants were requested to respond to the survey by choosing their response scale on a Likert scale ranging from 0 (irrelevant) to 7 (very true of me). The survey also captured participants' demographic details, which includes years of professional experience, years of teaching experience in total and with the ABC institute, and highest qualification.

This research administered the use of the SoCQ using the questionnaire (Hord et al. 2014) (see Appendix A) developed by SEDL. The questionnaire was modified by replacing the term 'innovation' with 'curriculum', with permission from SEDL online. In regards to capturing the LoUs of individual adopters, a semi-structured interview was carried out with vocational educators, keeping the interview chart (see Appendix B) as the basis of framing the interview questions.

In regards to gaining access to ABC campuses, an official written permission was obtained from the Managing Director's office (see Appendix C). An official email was provided (to the researcher) by the Managing Director's office copying campus directors of individual campuses to cooperate with the researcher to contact teachers for the purpose of data collection. Each campus director granted the researcher with permission to contact their respective teaching staff directly

based on their available time-schedules. Further, prior permissions were obtained from individual campus directors both by email and over the phone to confirm data collection schedules. The researcher was permitted by individual campuses a period of 45 minutes in total with individual teachers. This time allocation was organized into three stages - a) a five minutes briefing about the research purpose and the usage of the online SoCQ, b) followed by a 15-20 minutes semi-structured interviews to capture the LoU of the individual adopter and c) ended with a 15 minutes for SoCQ-based survey.

Individual campuses provided the necessary technology support to connect to the online SoCQ system. The researcher used the five minutes introductory period to brief about the research purpose, ensured confidentiality, discussed the significance of teachers' cooperation and input to the survey, explained the advantages of participating, and included directions for responding to the online survey. Individual adopters were briefed about the usage of the term 'curriculum' to mean the newly launched Q+NOSS-based curriculum, and ensured that they refer to the same during the SoCQ survey and the interview. A total of 28 teachers across three campuses (JZ, JL, and BN) participated in the survey and interview for a period of three months starting from November 2018 until January 2019.

Data collection was carried out during the end of Term 1 of the academic year 2018-19 across three campuses (JZ, JL, and BN) of the ABC institute. The collected data sought to determine whether teachers experienced different stages of concerns regarding the Q+NOSS curriculum implementation. Survey as chosen as one of the data collection methods for several reasons.

Southwest Educational Laboratories (SEDL) developed the SoCQ through extensive research and facilitated wider consultation through research studies to ensure its validity and reliability (George et. al. 2013).They recommend SoCQ as a robust data collection instrument considering the accuracy of its assessment and completeness of the data (George et al. 2006, Hord et al. 2014) both from the standpoint of an individual adopter or a group. Using the SoCQ, an individual adopter's profile could be developed, showing the intensity level on each stage, presenting a useful patterns of concerns. SoCQ was tested for reliability, internal consistency and validity with numerous cases and innovations (George et al. 2013). For the purpose of this research, I purchased the online version of the SoCQ from the original SEDL sponsored website (AIR 2015).

The SoCQ comprises of following provisions that would capture:

a) Participant information

b) Raw Scale Scores (35-Items)

c) Raw Score Totals (Stages 0-6)

d) Percentile Table

e) Percentile Scores (Stages 0-6)

f) SoC Profile

a)   **Participant information:** The SoCQ scoring device starts the collection of participants' demographic and other innovation-related details. The online version of the SoCQ facilitates the capturing of individual participants' information such as the qualification level taught, campus they belong to, total years of teaching experience, years of teaching experience with the current institution, total years of industry experience, and program of research. These details could be used for profiling individual or group of adopter and could be further analyzed to identify potential relationship patterns between adopters from different campuses. Once this is captured, participants are encouraged to respond to the 35 items SoCQ.

b) Raw Scale Scores (35-Items):

Each of the 35 items express a certain kind of concern about the particular innovation and is measured against a 0 to 7 Likert scale. These 35 expressions are not in consecutive order, and are distributed across the questionnaire. They fall into either one of the categories within the ranging from Stage 0 (unconcerned) to Stage 6 (refocusing). For instance, one of the expressions is - 'I am concerned about revising the use of the curriculum', for which an adopter could identify himself on a 0-7 range, depending on the varying degree of concerns about her involvement or potential involvement with the innovation as shown in Table 4.3. The 0 at the low end of the scale indicates an item that is completely irrelevant for an adopter, whereas a 7 identifies to be very true of her. Upon completing the responses to these 35 items, the raw score total is calculated for each stage, for example as shown in Table 4.4.

0	1, 2	3,4,5	6,7
Irrelevant	Not true of me now	Somewhat true of me now	Very true of me now
			Circle one number for each item
	0 1 2 3 4 5 6 7		
I am concerned about how the curriculum affects the students			

Table 4. 3 SoCQ Ranges and Description (adapted from Hord et al. 2014)

c) **Raw Score Totals (Stages 0-6)**

Stages	0	1	2	3	4	5	6
Statements	Statement 3 (response 1)						
	Statement 12 (response 1)						
	Statement 21 (response 2)						
	Statement 23 (response 4)						
	Statement 30 (response 4)						
Raw Score Total	12						

Table 4. 4 Row Scale Totals (adapted from Hord et al. 2014)

d) **Percentile Table:** The raw score total that is being captured and calculated as a response to the individual adopter's response to the concern expression is mapped against a predefined percentile table to identify the percentile score or ranking. The percentile score might vary for individual adopters depending on their intensity of concern with the innovation and their responses to the questionnaire statement.

e)   **Percentile Scores (Stages 0-6):** The percentile score represents the relative intensity of concerns of individual adopters or subgroups at each phase of the innovation adoption process. The higher the percentile score, the higher the intensity of concerns (George et al. 2013) and vice-versa. For instance, if the percentile score of an individual adopter is 69 Stage 0 (unconcerned), 98 at Stage 1 (informational concerns), and a 63 at Stage 2 (personal concerns), this indicates that the individual adopter has a relatively highly intense informational concerns, against a relatively lower personal concern. In a non-quantitative term, it simply means that the adopter, at this particular stage of adoption is more worried about gathering more details about the innovation (e.g. curriculum). A highly intense informational concern indicates that the adopter is 'interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements of use' (Hall et al. 1973). As a person, the adopter with an intense informational concern would be looking for additional support to understand various aspects of the innovation such as technicalities, functionalities or inherent characteristics. The percentile score is further mapped to generate a profile (Figure 4.2) of the adopter.

f) SoC Profile
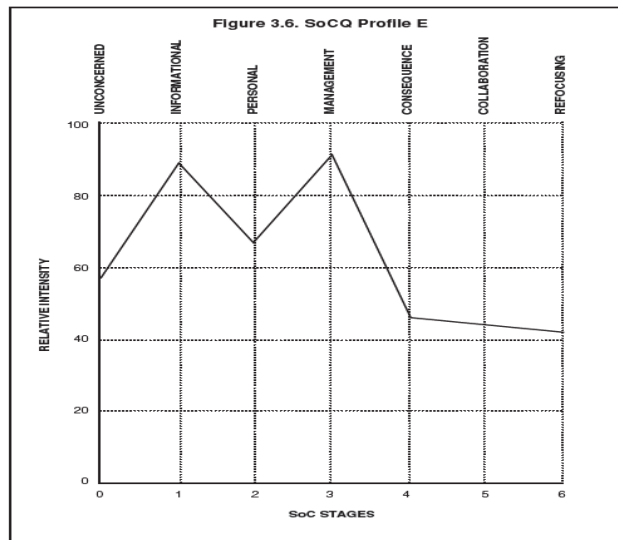
Figure 4. 2 SoCQ profile adapted from Hord et al. (2014).

4.8.3 Levels of Use (LoU) Interview

4.8.3.1 Qualitative Research Interviews

The qualitative research interview is a widely used data collection method to capture the context of the research phenomena from a participating subject's point of view. This mechanism explores the meaning of the participant's experiences with the research area under study. Within the context of this research, the participants are the vocational teachers, who are engaged in the process of adapting the reformed curriculum. This engagement is in fact a meaning making process and interviews would bring out the meaning they attach to educational reforms or curriculum innovations. These meanings may be contextual, personal and probably context or contradict the desired or intended meaning attached by the originators of the reformed curriculum. Extracting the meaning attached to certain phenomena by human participants is a daunting task and requires specialized and professional conversational skills to carry out the inherent interview tasks.

According to Brinkmann and Kvale (2015), this professional conversation is "an inter-view, where knowledge is constructed in the interaction between the interviewer and the interviewee". The interaction between the researcher and the participant teachers in this research exchanged views about the reformed curriculum, as it was of mutual interest within the context of the research. These interactions involved probing of carefully analyzed questions and listening mechanisms with the aim of capturing thoroughly tested knowledge. Furthermore these interactions could take different forms such as face-to-face interviews, telephone interviews, e-mail internet interview or focus group interviews. There are a number of advantages and limitations with the use of interviews as a method of data collection. Interviews are useful when the research participants cannot be directly observed. As Merriam & Tisdell (2016) points out, "interviewing is necessary when we cannot observe behavior, feelings, or how people interpret the world around them". This is extremely relevant for this research considering the fact that the researcher was not permitted by the ABC authorities to observe participant teachers. Researcher's presence and consequent bias affecting the validity and reliability of the research is one of the key disadvantages with interviews (Creswell 2014).

4.8.3.2 Power plays in interviewing

Creswell (2014) and Brinkmann & Kvale (2015) highlight another critical aspect relating to interviewing which is about the power dynamics and the sharing of control during the process. It is to be noted that the power of control within the overall interview process (in terms of administration) rests with the researcher as he or she is required to define and control the interview situation. This is also another challenging aspect of conducting interviews, especially when the participants are qualified, competent and authoritative in their respective field of practice.

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However, as Brinkmann & Kvale (2015) maintains, "the interviewer has a monopoly of interpretation". The interplay of power between the interviewer and interviewee in qualitative research interviews is manifested through various complex and situational forms. The manifestation of power between a senior researcher (interviewer) and a vocational teacher (interviewee) is discussed by Vähäsantanen & Saarinen (2012), in which they argue that the interviewer's power is not exclusive favoring the interviewer. Vähäsantanen & Saarinen (2012) point out that in certain instances, interviewees can withhold information, derail the interview process or schedule, challenge the interviewer, and even contest the interviewer's interpretations. This unequal power distribution in research interviews could also be challenging for the interviewer when he or she is perceived as a representative of a powerful enterprise. This power asymmetry is one of the major challenges faced by the researcher during the administration of the interview process. As the researcher is employed with the Ministry of Education, a majority of research participants were initially reluctant to completely cooperate with the research or open up their minds to express their feelings or concerns. Participant teachers at the ABC institute (interviewees) viewed the interviewer researcher as a regulatory representative shifting the power control completely to the end of the researcher and maintaining a cautious stance. This is problematic and causes discomfort among participants and ultimately results in non-disclosure of their views, feelings and attitudes. Problems arising from the interplay of power could be resolved by adopting strategies such as self-disclosure and rapport-building exercises (Jacobsson & Akerstrom 2012). Defining and controlling the power balance within a qualitative research interview, however requires craftsmanship and high-quality interviewing skills. In regards to the craft of research interviewing, Brinkmann & Kvale (2015) maintains that:

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"When the person of the researcher becomes the main research instrument, the competence, and craftsmanship - the skills, sensitivity, and knowledge - of the researcher become essential for the quality of the knowledge produced".

Commenting on the high-quality interview traits, Glesne (2011) maintains that a "good interviewer" is a) anticipatory, b) a learner, c) analytic, d) therapeutic, e) patiently probing, f) non-threatening, g) aware of power and hierarchy, and h) caring and grateful.

4.8.3.3 Types of interviews:

Interviews and generally categorized into three types based on their theoretical stances. These are the structured, semi-structured, and unstructured or conversational interviews. Structured interviews, as the name says, follows a proactive approach to the method, wherein all the research questions are established well in advance, before the interview and stays unchanged throughout the interview process (Merriam & Tisdell 2016, Glesne 2011, Brinkmann & Kvale 2015). In a semi-structured interview technique, the research questions are established well in advance before the interview, however subject to modification or tweaking during the course of the interview. The level of flexibility in formulating the questions before and during the interview process is moderate to high, where a majority of the interview is guided by a range of questions or problems to be explored (Merriam & Tisdell 2016). These flexibilities and modifications are mainly because semi-structured interviews are designed to capture life world experiences of individual (and group) participants, who attach diverse meaning to the same phenomenon they interact with, at different instances of time. Brinkmann & Kvale (2015) defines semi-structured interview as "one with the purpose of obtaining descriptions of the life world of the interviewee in order to interpret the

meaning of the described phenomena". The third kind of interview is the unstructured interview which is more or less like a loosely ended casual conversation without any predefined structure. Unstructured interviews are usually preferred when the researcher has relatively lesser grip or knowledge about the phenomenon (Merriam & Tisdell 2016), where questions are generated along the way (Glesne 2011) as the interview progresses.

The semi-structured interview type could further be categorized depending on the discipline or nature of phenomena being studied. One such specialised form of interviewing, is the "topical interviewing". According to Glesne (2011), topical interviewing "focus more on a program, issue, or process than on people's lives". Topical interviews attempts to explore perceptions, concerns, feelings, and attitudes of participants towards some topics, for example, asking educators about their views about regulator-prescribed changes in the curriculum in vocational institutions. This research adopts topical interviewing technique as the research aims to capture the views and concerns of vocational teachers as they adopt the reformed vocational curriculum.

4.8.3.4 Philosophical and Disciplinary Orientations

Interviewing is being discussed, explored and analyzed theoretically from a diverse philosophical stances or viewpoints. Brinkmann & Kvale (2015) maintain that most of the knowledge that are generated from an interview research have phenomenological or interpretivist orientations. The phenomenological philosophy facilitates the exploration of the social phenomena from the participant's own viewpoints, and describing the life world as they have experienced it (Brinkmann & Kvale 2015). Research studies focusing on the exploration of participants' experiences, feelings,

desires, opinions, concerns, and attitudes tends to follow the interpretivist or phenomenological approach. As Glesne (2011) maintains, "interpretivist traditions portrays a world in which reality is socially constructed, and ever changing". Within the context of this research, the key purpose is to understand how ABC teachers interpret and make meaning of the reformed curriculum and how they react to the adoption-related demands imposed by the regulatory authorities and institutional leadership. Each participant teacher constructs a (contextual) social reality by engaging in the adoption process, contesting and concurring with the new curriculum requirements, and by collaborating with other teachers teaching the new curriculum. Therefore, capturing the constructed realities and perceptions of several teachers would yield a socio-cultural pattern of action and thought. This capturing mechanism is implemented using various research methods such as interviews and questionnaires, by observing, asking questions and interacting with individual participants.

4.8.3.5 Planning the Interview

Getting quality data from interviews critically contribute to the overall quality of the research. As Merriam & Tisdell (2016) points out, "the key to getting good data from interviewing is to ask good questions". Crafting a quality interview process requires good planning. Creswell (2014) suggests the use of an "interview protocol" for generating questions and recording responses during an interview. The interview protocol views the interview as a task or a mini project by itself and the protocol acts as a project management plan. Interview protocol defines the ground rules for the interviewer and also recommends proactive actions for known risks, for instance the malfunctioning of the tape recorder. The interview protocol or the interview guide (Merriam & Tisdell 2016) is a set of tools to facilitate the administration of the interview process. This includes

a form to record the date and time of interview, instructions to the interviewer, typical ice-breaking questions, a few specific questions, and an interview process log. The log may include key incidents related to the interview, any reference documents for further verification, follow-up interview sessions if required, and any comments regarding reliability and validity.

4.8.3.6 Formulating Interview Questions

Brinkmann and Kvale (2015) argues that interview questions should be "brief and simple". The quality of the interview questions could be ensured by conducting pilot interviews, which are crucial for experimenting the questions (Merriam & Tisdell 2016). Piloting is useful not only in gaining an experience or a practice of conducting the interview, but also as a learning mechanism to understand which questions are confusing, wordy, significant, and useless. Clarity in articulating the questions are of critical importance in an interview and plays a major role in extracting the desired information from the participant. Interview questions need to be articulated in simpler terms to sound familiar to the interviewee's social world and the context within which he or she operates. This would eventually make the interviewee more comfortable to respond. Merriam & Tisdell (2016) recommend avoiding technical jargon and specialized concepts in the beginning of the interview to give a comfortable start to the interaction process. There are several types of questions that could be asked to incite or invoke the participant and creates a positive conversational context. Patton (2002) categorizes six types of interview questions (Table 4.5):

Question Type	Description / Example
Experience and Behaviour Questions	This question focuses on activities undertaken by the participant. E.g. Tell me about a day at work?

Opinion and Values Questions	This question focuses on the participant's beliefs or opinions. E.g. What is your opinion as to whether teachers should also be curriculum developers?
Feelings Questions	This question focuses on the affective dimensions of the participant. E.g. How do you feel about the new curriculum?
Knowledge Questions	This question focuses on the participant's actual knowledge about the situation. E.g. How important is the understanding of occupational competencies to the development of the curriculum?
Sensory Questions	This question focus on specific experiences heard or felt by the participant. E.g. What are your observations about learners' reaction to the new curriculum?
Demographic Questions	This question focus on capturing participant age, education, experience, etc.

Table 4. 5 Type of Interview Questions (adapted from Merriam & Tisdell 2016)

Brinkmann & Kvale (2015) advances the role of the interviewer in the process and maintains that interviewer is "his or her own research tool". Interviewer's ability to sense the nature of participant's responses is very critical to effective interviewing and generating quality data, as the questions may vary for different participants. Table 4.6 outlines nine types of interview questions as advanced by Brinkmann & Kvale (2015):

Question Type	Example
Introductory Questions	Can you tell me about the new curriculum framework?

Follow-up Questions	Participant's responses may be extended through a nod or mmm or by repeating significant words mentioned by the interviewee
Probing Questions	Could you say something more about the new occupational competencies?
Specifying Questions	How did you react when you were asked to change the way you teach?
Direct Questions	Have you ever reported about the underrepresentation of teachers in curriculum development?
Indirect Questions	How do you believe other teachers management of the course files?
Structuring Questions	Now let us move from curriculum development. I would now like to introduce another topic – regarding occupational competency.
Silence	By allowing carefully planned pauses in the interview, participants may get adequate time to reflect and break the silence themselves with key information
Interpreting Questions	You then mean that…?

Table 4. 6 Types of Interview Questions (adapted from Brinkmann & Kvale 2015)

Interestingly Merriam & Tisdell (2016) advances a "devil's advocate" question among other types as outlined in Table 4.7:

Type of Question	Example
Hypothetical Questions	Suppose it was your first day at ABC institute teaching the new curriculum. What it would be like?

To understand participants' response in a particular situation	
Devil's advocate Questions To understand participants' response by challenging them to consider a contesting or contradicting viewpoint	Some vocational teachers would say that it is the teacher's occupational incompetence that fails most of the curricular reforms. What would you tell them?
Ideal Position Question To capture participant's understanding of an ideal situation	Would you describe what you think the ideal vocational curriculum would be like?
Interpretive Questions To capture the participant's response to interpretations or explanation previously provided	Are you finding returning to the educational and training field from production industry a different experience from what you expected?

Table 4. 7 Types of Interview Questions (adapted from Merriam & Tisdell 2016)

Framing good questions require practice and rehearsals. It would be considered by research interviewers to ask the questions to themselves, challenging oneself to respond as minimally as possible. Performing a self-review of the process and specific responses would contribute to effective interviews, resulting in good interview data.

4.8.3.7 Conducting the interviews:

It is vital for any kinds of interview formats, that the interviewer possess a strong knowledge regarding the study's aims, objectives, and of the data that is to be collected. This would facilitate effective probing to extract the most appropriate kind of data, and confirm all required and relevant issues are addressed in terms of coverage. Before executing the interview process, it would be helpful for the researcher to make herself comfortable, and prepare a few questions when she first meets the interviewee. This preparation should include assuming neutrality with respect to

participant's knowledge, which is regardless of how contradictory it is to interviewer's beliefs, perceptions or values the participant's stance might be. This is critical to the overall success of the interview and would avoid unnecessary debates, arguments, and discomfort. As Merriam & Tisdell (2016) asserts, "being respectful, non-judgmental, and non-threatening is a beginning". And on the other hand, good respondents or cooperative participants on most occasions share their concerns and views with an interested and sympathetic interviewer, who is also a good listener. In some cases, participants use it as an opportunity to express their feelings and clarify their thoughts. There are a range of traits recommended by Brinkmann & Kvale (2015) for becoming a master interview craftsman (Table 4.8).

Characteristic	Description
Knowledgeable	Interviewer has in-depth knowledge of the interview theme, and knows critical issues relating to the phenomena being discussed.
Structuring	The interviewer maintains an interview plan or a guide to systematically carry out the interview process
Clear	The interviewer asks a clear, simple, easy and short questions.
Sensitive	The interviewer concentrates on every word shared by the participant and is keen on the nitty-gritties of the conversation.
Gentle	The interviewer is patient and waits for the participant to complete his or her conversation.
Open	The interviewer focuses on the critical or important for the interview, and if required follow-up on them.
Steering	The interviewer guides the interview and manages all interruptions diplomatically.
Critical	The interviewer critically reviews the responses to test the reliability and validity of what the interviewee has shared.
Remembering	The interviewer recalls important points previously shared at a different point by the participant.

Interpreting	The interviewer clarifies his interpretations of participant's responses, which many then be confirmed or contested by the interviewee.

Table 4. 8 Interviewer Characteristics (Adopted from Brinkmann & Kvale 2015)

The LoU construct of the CBAM framework describes the behavior of individual adopters and this does not at all focus on capturing the attitudinal, motivational or other affective aspects of the adopter (Hall et al. 2014). Using LoU as a diagnostic tool, one is attempting to define operationally what the adopter is doing, without explaining causality. An individual adopter's LoU could be assessed using a variety of techniques, which includes an interview chart (Figure 4.3), a focused interview, and a combination of informal questioning and observation (George et al. 2013, Hord et al. 2014).
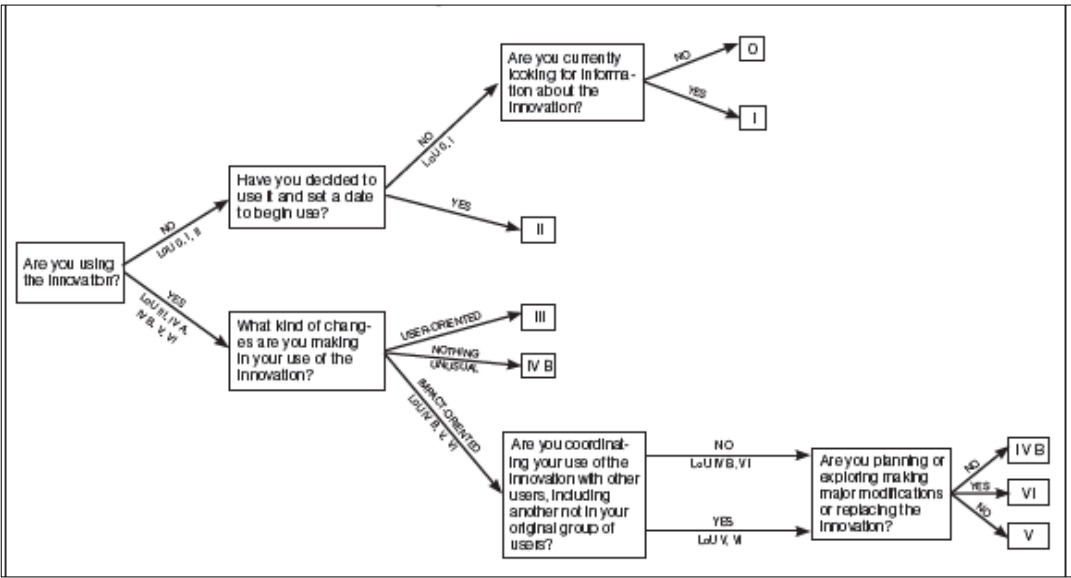
Figure 4. 3 LoU Interview Chart (adapted from Hord et al. 2014)

In regards to the semi-structured interview, the researcher recorded all interviews using an audio-recorder, in order to get more clarification on the details and for further data analysis. A total of twenty participant teachers (six females and twenty two males) were interviewed across three

campuses. The researcher transcribed majority of the audio recordings myself using a web-based application called 'Otranscribe' and a few of the interviews using 'Sonic' application. Further, I cross verified each of these transcripts which included proof-reading, and accuracy checks. The audio recorder was used upon obtaining permission from individual participants. Individual participants were assigned pseudonyms to conceal their identity, using a combination of the campus succeeded by two digits. For instance, JZ campus teachers were identified as JZ01.

4.9 Data Analysis and Management

This research is designed to use a multiphase mixed-methods that has three different phases and hence collects different types of data that requires a variety of data analysis techniques, as described in the sections to follow. The resultant data from the first phase (qualitative data from document analysis), second phase (convergent parallel mixed-methods design) and third phase (qualitative data from interviews) are collected concurrently. However, resultant data from each of these phases are analyzed and interpreted separately. Then the results of these three phases are compared and integrated to address the main purpose of the research. The first phase is the description of the reformed Q+NOSS-based curriculum, and the contextualization of the same in a classroom setting. The second phase is the vocational educators' views and concerns as they experience the adoption of the reformed Q+NOSS-based curriculum. Finally the third phase informs vocational educators' usage level or their behavioral aspects in regards to the reformed Q+NOSS-based curriculum.

In the first phase, the qualitative data is generated through document analysis of multiple documents and then collected, analyzed, and interpreted. The findings out of these analysis and interpretations informs the first question of the research.

The second phase of the research starts with administering the qualitative interview with the participants (vocational educators) to capture their views and concerns about the reformed Q+NOSS-based curriculum. These responses from the vocational educators were collected using semi-structured interviews, and recorded using a voice recorder for further analysis. The interview responses were analyzed using the thematic analysis technique. Interview responses were transcribed using an online transcription software (OTranscribe) and further cleansed to reduce spelling, and grammatical mistakes. Each interview transcripts were reviewed multiple times in order to identify recurring themes or codes.

According to Merriam (2009), coding is nothing more than assigning some sort of shorthand designation to various aspects of your data, so that you can easily retrieve specific pieces of data. These designations can be single words, letters, numbers, phrases, colors or combinations of these. The qualitative interview transcripts were manually analyzed, without relying on any dedicated software application for data analysis. This approach proved to be highly beneficial to me as a researcher, as Merriam (2009) states, it gives deeper insights and hunches about what is going on with the qualitative data (Merriam 2009). The interview transcripts were reviewed multiple times and codes were generated and categorized to form themes. The themes were categorized in line with the individual concern stages as identified in the theoretical framework underlying this research. For instance, vocational educators' responses that echoed their worries about themselves in regards to job-security, or their own doubts about their skills were coded into the "personal concerns" category. Similarly, through multiple iterations of analysis and coding, the qualitative interview responses were grouped into seven different categories of concern ranging from the least bothered "unconcern" category to most bothered "refocusing" concerns. The interpretation of

qualitative data from interviews was followed by the interpretation of the quantitative questionnaire-based survey designed to capture vocational educators' views and concerns quantitatively. These responses were collected using an online survey developed by the SEDL, then it was analyzed using the Statistical Package for Social Sciences (SPSS) software. The quantitative data of educators' questionnaire was analyzed using descriptive statistics to find the mean, standard deviation, and frequency of responses. The quantitative results were used to confirm or contest participants' views and concerns generated from the qualitative interviews. At a later stage, the conclusion of the results in the second phase is merged, interpreted and kept for the results of the third phase.

4.9.1 Quantitative Data Analysis

The primary source of quantitative data in this research arises from the questionnaire-based survey platform. This survey platform, as mentioned earlier, is an online, interactive web-based application developed by the SEDL. The questionnaire is designed to have two sections. First section was designed to collect the demographic characteristics of the participants. These demographic characteristics included the campus name, qualification level taught, qualification discipline, total years of teaching experience, total years of teaching experience with ABC institute, and total years of industry (vocational) experience. The second section consisted of the Stages of Concern – Questionnaire (SoCQ) to measure the stages concerns of the teachers.

There are three sources of quantitative data resulting from the demographic characteristics. These are total years of teaching experience, total years of teaching experience with ABC institute, and total years of industry (vocational) experience. Analysis of these quantitative demographic data

was conducted using descriptive statistics. Firstly, individual demographic data were reviewed, recorded using a spreadsheet, and grouped to determine the mean and standard deviation for each participants. The total teaching experience all the teachers were reviewed and then compiled to form two groups. The first group consisted of teachers possessed more than ten years of total teaching experience, and the second group consisted of teachers with less than years of total teaching experience. Similarly, teachers with more than five years of teaching experience with ABC institute were grouped separately to those with less than five years of experience. Finally, concerning the third factor, teachers' industry experience, teachers with more than five years of total industry experience were grouped separately to those with less than five years of experience. Using descriptive statistics, these two groups were compared to determine the mean and standard deviation between these two groups of teachers and the extent to which these factors influence teacher views and concerns.

The second section consisted of the data resulting from the SoCQ (questionnaire) as mentioned above. The SoCQ captures teachers' responses to the 35-item questionnaire on a 0 to 7 Likert scale. These responses are recorded by the online application and later compiled to calculate an average score for each Stages of Concerns (SoC). The raw scores for each teacher is mapped against a predefined percentile table to determine the percentile score or ranking for each teacher. The percentile score represents the relative intensity of concerns of individual adopters or subgroups at each phase of the innovation adoption process. The percentile score is finally plotted to a graph to generate an individual profile for each teacher. The data obtained from the SoCQ is further analyzed to determine the extent to which concerns influence each other. The correlation between teachers' concerns were determined using SPSS. This is to determine whether and how strongly

concerns are related. At the same time, this correlation technique was not used to determine causation, rather to identify positive and negative correlation between teachers' concerns.

The survey was administered on the internet using an online survey tool developed by the Southwest Educational Laboratories (SEDL). Researcher visited individual ABC campuses to meet vocational teachers requesting their participation in the survey process. Teachers who expressed their consent were initially introduced to the purpose of the research, followed by a brief about the online survey. The online survey was launched on a web-browser that run on researcher's laptop and participants were requested to respond to the survey by choosing their response scale on a Likert scale ranging from 0 (irrelevant) to 7 (very true of me). The survey also captured participants' demographic details, which includes years of professional experience, years of teaching experience in total and with the ABC institute, and highest qualification.

This research administered the use of the SoCQ using the questionnaire (Hord et al. 2014) (see Appendix A) developed by SEDL. The questionnaire was modified by replacing the term 'innovation' with 'curriculum', with permission from SEDL online. In regards to capturing the LoUs of individual adopters, a semi-structured interview was carried out with vocational educators, keeping the interview chart (see Appendix B) as the basis of framing the interview questions.

Each of the 35 items express a certain kind of concern about the particular innovation and is measured against a 0 to 7 Likert scale. These 35 expressions are not in consecutive order, and are distributed across the questionnaire. They fall into either one of the categories within the ranging from Stage 0 (unconcerned) to Stage 6 (refocusing). For instance, one of the expressions is - 'I am concerned about revising the use of the curriculum', for which an adopter could identify himself

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on a 0-7 range, depending on the varying degree of concerns about her involvement or potential involvement with the innovation as shown in Table 4.3. The 0 at the low end of the scale indicates an item that is completely irrelevant for an adopter, whereas a 7 identifies to be very true of her. Upon completing the responses to these 35 items, the raw score total is calculated for each stage for each participant (vocational teacher).

The raw score total that is being captured and calculated as a response to the individual adopter's response to the concern expression is mapped against a predefined percentile table to identify the percentile score or ranking. The percentile score might vary for individual adopters depending on their intensity of concern with the innovation and their responses to the questionnaire statement.

The percentile score represents the relative intensity of concerns of individual adopters or subgroups at each phase of the innovation adoption process. The higher the percentile score, the higher the intensity of concerns and vice-versa. For instance, if the percentile score of an individual adopter is 69 Stage 0 (unconcerned), 98 at Stage 1 (informational concerns), and a 63 at Stage 2 (personal concerns), this indicates that the individual adopter has a relatively highly intense informational concerns, against a relatively lower personal concern. In a non-quantitative term, it simply means that the adopter, at this particular stage of adoption is more worried about gathering more details about the innovation (e.g. curriculum). A highly intense informational concern indicates that the adopter is 'interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements of use' As a person, the adopter with an intense informational concern would be looking for additional support to understand various aspects of the innovation such as technicalities, functionalities or inherent characteristics. The percentile score is further mapped to generate a profile of the adopter.

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In the third phase, qualitative data resulting from the interview responses of vocational teachers were analyzed and interpreted to determine the extent to which the reformed curriculum is being implemented or used. Again, as mentioned earlier, qualitative interview results were collected, cleansed and thematically analyzed to form different categories. Interview responses were thematically categorized so as to align with the various usage levels defined by the theoretical constructs discussed as part of the research.

4.9.2 Qualitative Data Analysis

This research adopts qualitative data analysis as conceptualized by Miles and Huberman (1994). According to this model, the qualitative data analysis involves three concurrent flow of activity such as data reduction, data display and conclusion drawing/ verification. The flow model (Figure 4.4) illustrates the interaction of activities involved in qualitative analysis:
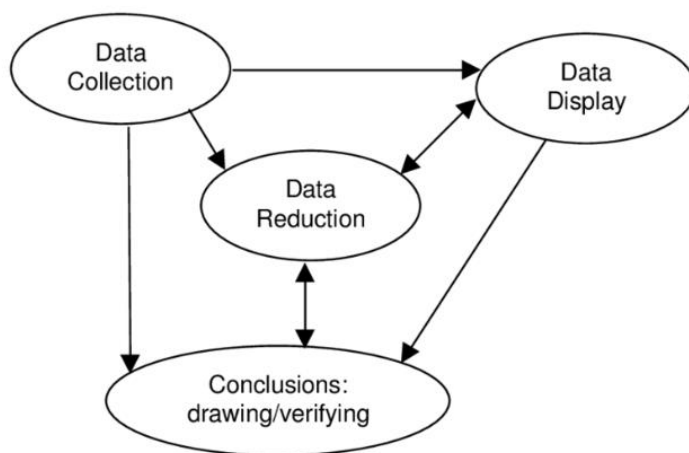
Figure 4. 4 Components of Data Analysis: Flow Model (adapted from Miles & Huberman 1994)

4.9.2.1 Data Reduction:

Miles & Huberman (1994) maintains that:

> "Data reduction is a form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that "final" conclusion can be drawn and verified".

Miles & Huberman (1994) advance data reduction as a process of selecting, focusing, simplifying, abstracting, and transforming the data recorded in the researcher's field-notes or transcriptions. Data reduction in actual practice settings of research could be referred simply as "coding". This is considered to be a continuous process throughout the life-cycle of a qualitative research project. Data reduction activities gets initiated prior to the start of data collection, which is an anticipatory activity as the researcher starts defining the conceptual framework, establishing the research questions, and planning on the data collection strategies. Miles & Huberman (1994) argue that data reduction is an integrated task, which is part of a bigger data analysis activity and not a detached or one-off process. During the process of data collection, the researchers resort to analytical choices to determine what to include and what to exclude from the collected data. This contextualization of data supports the analysis process by which the researcher attach predefined meanings and codes to translate the raw data to a more relevant data group or data chunks. Miles & Huberman (1994) maintains that data reduction is a kind data condensation, where qualitative data is transformed through selection, summary or paraphrase.

4.9.2.2 Data Display

This is the second major flow of the qualitative data analysis activity, wherein data is represented for the purpose of extended analysis or make contextual interpretations. In general terms, data

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display refers to "an organized, compressed assembly of information that permits conclusion drawing and action "(Miles & Huberman 1999). Qualitative data are displayed as extended texts, matrices, graphs, charts and networks. Despite being the most frequent form of data display, extended texts challenges researchers' information processing capabilities. Extended texts are in most circumstances poorly structured and extremely voluminous, and demand high configuration analytical skills. Adopting alternative data display measures such as graphs and contribute to innovative data management practices. This would facilitate streamlined access to the data and enables meaningful visualization of the data to make justified conclusions.

4.9.2.3 Conclusion Drawing and Verification:

This is the third stream of qualitative data analysis process advanced by Miles & Huberman (1994). This stream involves a range of analytical sub-activities which is a continuation of activities within the previous data reduction and data display processes. The activity of drawing conclusions kicks off right from the beginning of data collection and includes identifying patterns, highlighting explanations, underlining possible configurations, and marking causal flows and propositions. The final conclusion is made when the data collection is completed and is influenced a number of factors such as the size of the collected data, coding, storage, and retrieval methods used, and researchers' capabilities. Conclusions drawn from the analysis of the data are also verified along the process. Researchers perform cross verification of the data using mental checks during data recording or by carrying out in-depth efforts to repeat a finding in an alternative dataset. Finally, the meanings emerging as a result of extensive analysis have to undergo confirmability tests to ensure their validity within the context of the research.

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Qualitative data resulting from the semi-structured interview were subjected to step-by-step process of analysis. The first step was the category construction, which involved in-depth review of the interview transcripts collected during the research. Individual interview transcripts were manually reviewed to identify keywords, which are potentially relevant, and significant to the research. Initial data analysis adopted an open coding technique, which according to Merriam (2009) is the process of making notations and jotting down notes, comments, observations and queries in the margin. The open coding technique used in this research assigned codes to important to potentially relevant pieces of data to construct categories. In this research, categories or *themes* were constructed by identifying and sorting recurring patterns within the data codes. The second step of data analysis consisted of naming the categories to precisely reflect what is in the coded data. Since this research draws on qualitative interview data to measure teachers concerns and levels of use, two different set of categories were constructed. First set of categories were derived to match the teachers' concern stages and each category was named according to the seven stages of concerns such as unconcern, informational, personal, management, consequence, collaboration, and refocusing. The second set categories were named to match the level of usage such as a non-use, orientation, preparation, mechanical, routine, refinement, integration, and renewal. In addition to tagging codes to potentially relevant keywords to the interview texts, this research also drew procedures recommended by Hord et.al (2014) for assessing concerns. The researcher used a numbering technique that would circle specific sentences and assign a number ranging from 0 to 7, indicating its orientation towards a specific concern stage. For instance, the following sample interview excerpt discussed in Hord et al. (2014) indicate the number-mapping process used in this research:

(2) It was really hard for me you know like because as I said, I had sleepless nights, indeed, because in a way I am doing two different things. I am an assessor (teacher) and I am the internal verifier. (3) The term ends this week and the next term will start next week...we will have course next week...so we hardly get time to prepare for our classes in advance...(1) I would like to observe other teachers to see how they manage this problem.

The first sentence indicates that the teacher's concern is an expression of personal concern (stage 2). In the second sentence, the teacher is concerned about the lack of time and resource and hence is an expression of management concerns (stage 3). Finally, in the third sentence, the teacher is looking for more information on how other teachers are managing this issue, which is an information concern (stage 1). Finally, upon assigning the numerical and textual codes are assigned to individual interview transcripts, categories are revisited to ensure whether they contain appropriate concern expressions.

The third step involved a comprehensive evaluation of the categories, which are now sorted according to the nature of the coded data. As Marshall and Rossman (2006) indicates, these categories are "buckets or baskets into which segments of texts are placed". Within the scope of this research, the process of categorization and in-depth analysis of qualitative data was done manually, considering the reasonable quantity of data, and for the researcher to have a more personalized assessment of the interview texts. Finally, the conclusion of the results is interpreted and merged with the results of both data.

4.10 Validity and Reliability

Ensuring trustworthiness and rigor involves conducting the investigation that brings confidence in the result of the research. According to Merriam & Tisdell (2016), ensuring validity and reliability comprises conducting the investigation in an ethical manner. Fraenkel, Hyun & Wallen (2019) emphasize the importance of quality of data collection instruments used in the research, and underlines the extent to which it influences the authenticity of the research outcomes. Researchers adopt a range of procedures to ensure that the research findings are valid and reliable, regardless of the type of research (Fraenkel, Hyun & Wallen 2019, Merriam & Tisdell 2016). However, there are also differing arguments regarding the conceptions of validity and reliability within the qualitative and quantitative paradigms (Merriam & Tisdell 2016).

The data collection instruments (interviews and surveys) designed for this research approach validity and reliability from multiple perspectives. According to Kvale & Brinkmann (2009), *reliability pertains to consistency and trustworthiness of research findings.* For Merriam & Tisdell (2016), *reliability refers to the extent to which research findings can be replicated.* Fraenkel, Hyun & Wallen (2019) positions *reliability to the consistency of scores or answers from one administration of an instrument to another, and from one set of items to another.* Validity, on the other hand is viewed from the dimensions of correctness and congruence. According to Kvale & Brinkmann (2009), validity pertains *to the degree that a method investigates what it is intended to investigate.* Fraenkel, Hyun & Wallen (2019) views validity *as the appropriateness, meaningfulness, correctness, and usefulness of the inferences a researcher makes*.

This research uses two diagnostic tools or data collection instruments – the SoCQ and the LoU-interviews, to generate research findings and maps reliability to *consistency* and validity to *correctness*.

4.10.1 Reliability and Validity of Stages of Concerns Questionnaire (SoCQ):

As discussed in section 4.11 Stages of Concerns Questionnaire (SoCQ) Survey, the SoCQ quantifies the seven stages of concerns. The survey instrument comprises 35 Likert scale questions in which the vocational teachers are asked how they experience the adoption of the reform Q+NOSS-based curriculum. George et.al (2013) determined that the SoCQ has good reliability, with Cronbach-Alpha (internal consistency) coefficients ranging from 0.64 to 0.83, and the test-retest (Pearson-r) coefficients ranging from 0.65 to 0.86 (Hall et al. 2013). George et al (2013) used a range of approaches to determine the validity of SoCQ scores including inter-correlation matrices, judgments of concerns based on interview data and confirmation of anticipated group differences and changes over time. In addition to these reliability and validity aspects of the instrument, the questionnaire was pilot with two vocational teachers. The questionnaire was designed to value the anonymity of the teachers so to encourage them to be as honest in their responses. Further to the pilot survey, teachers' comments were gathered to ensure whether to introduce any changes to the survey. According to the views of the teachers in the pilot study, a few data fields were added to the demographic section of the questionnaire.

4.10.2 Reliability and Validity of Levels of Use (LoU) Interviews:

A semi-structured format is adopted by this research to carry out the LoU interview as described in section 4.12 LoU Interview to capture vocational teachers' *feelings* and *behaviour* towards the

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Q+NOSS-based curriculum. As Merriam & Tisdell (2016) asserts, *the more important question for qualitative research is whether the results are consistent with the data collected.* Reliability is problematic in the social sciences, argues Merriam & Tisdell (2016), considering the volatile nature of human behavior. Regarding the LoU interview, Hall et al (2013) acknowledge the biases in reporting and initiated a study titled "*A Developmental Model for Determining Whether the Treatment Is Actually Implemented*" to test and verify the LoU interview as a reliable way to measure LoU. Hall et al (2013) determined that the LoU has good reliability, with correlation coefficients ranging at .65. They also used a range of approaches to determine the reliability of the LoU interviews including a "percent-agreement" technique and Cronbach's alpha coefficient.

4.11 Ethical Consideration

The initial approval for conducting this research was obtained from the Ethics Advisory Committee of the British University in Dubai (BUID). In addition to that, approval for data collection was secured from the central directorate of the ABC vocational institute. The ABC institute's approval included access to all its three campuses where the reformed vocational curriculum is being implemented. Formal consent to participate in this research was gathered from individual vocational educators prior to the commencement of the data collection phase.

Each participant was provided with a 'consent form' (see Appendix D) during the briefing period, and were informed about their rights as a participant. The vocational educators signing the consent form indicates their willingness to participate in the research, ensuring the confidentiality and security of the information provided during the data gathering session (Merriam 2009).

Individual teachers were informed that their participation is voluntary and he or she has full rights to seek more clarification regarding the questions and discontinue their participation at any time during the data collection process. Teachers were requested to read the contents of the consent letter and approve the same as an indicator of their approval to participate in the research. In regards to maintaining confidentiality, participants were informed that all information would be kept confidential and solely by the researcher. In order to preserve anonymity, participants were not asked to provide their names, age, and nationality. As Glesne (2011) emphasize, privacy is generally the foremost concern with most of the research participants. A description of any expected risk has been explained and instructions were provided in regards to withdrawing consent and participants' right to not to engage in the research. Furthermore, advantages and benefits that might derive from the research were explained as well as participants' freedom and right to ask questions about any aspect of the research. As The research did not involve any risk to the participants in any form.

4.12 Summary

This chapter discussed the methodological aspects of the research. The linkage between the theoretical framework informed by the CBAM and the research methodology is established. Mixed methods approach guides this research, guiding the selection of data collection methods such as interviews, questionnaire-based surveys and document analysis. The chapter also discussed the data management approaches and analysis methods. The chapter concludes by discussing the ethical considerations adopted by this research in regards to data integrity, and protecting participant privacy. The following chapter provides a detailed analysis of the research findings and to what extent they address the research questions. Response to teacher interviews, surveys and outcomes of document analysis are subjected to in-depth analysis, and interpretation processes to arrive at certain conclusions.

Chapter Five: Research Findings

This chapter discusses the findings resulting from the analysis and subsequent interpretation of the data gathered through interviews, surveys, and document analysis. The research questions follow a logical order (Figure 5.1), by starting with the first question that attempts to describe the new vocational curriculum, both from its regulatory intentions and teachers' implementation perspective.

1. What is the new vocational curriculum?	2. To what extent is the curriculum congruent with regulatory body?	3. What are your views and concerns in regards to the adoption of the new curriculum?	4. To what extent does demograhic factors influence your concerns?	5. Does these concerns influence each other?
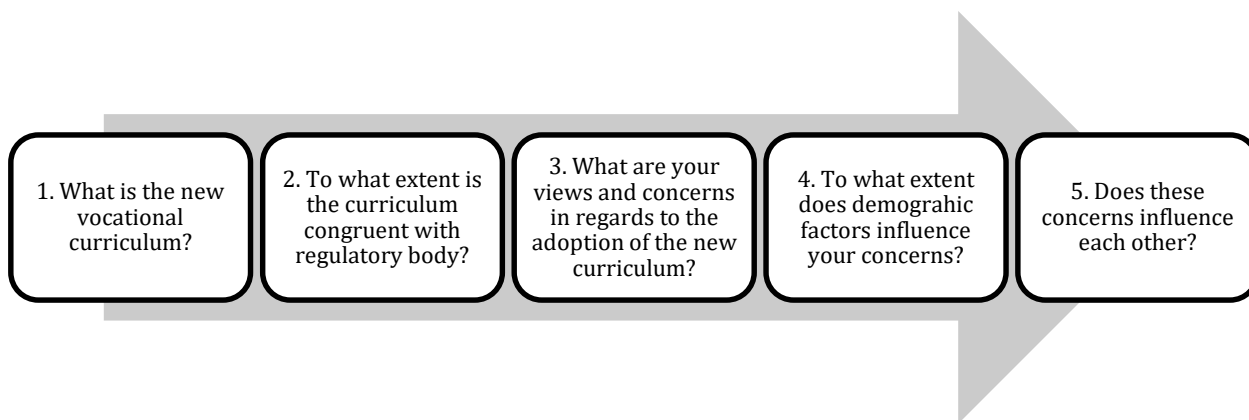
Figure 5. 1 Logical ordering of research questions

Question one - **What is the new VET curriculum? –** seeks to describe both the intended and taught curriculum by adopting document analysis techniques and further analysis. Upon reviewing the new vocational curriculum, the current then attempts to identify the actual level is use of the new curriculum by the vocational teachers. Question two - **To what extent is the curriculum implementation congruent with those mandated by the regulatory body and why? –** is an attempt to capture the current usage level or status (or the behavioral aspects) of the curriculum by the teachers. The teachers' levels of usage of the curriculum are explored using the LoU diagnostic construct proposed by the CBAM theoretical model. This questions aims to know whether the teachers are actually teaching the new curriculum, and to what extent they are using it. Are they

making any changes to the new curriculum or do they have adopted some modifications to the new curriculum? – Answers to these questions are interpreted from the analysis of teachers' interview responses. Once the teachers' usage level of the new curriculum is explored and identified, the research explore the concerns (emotions or feelings or the affective aspects) of vocational teachers while are engaged in the process of implementing the curriculum. The third research question - **What are teachers' concerns and the extent to which they influence the adoption of the reformed curriculum? –** explores the relative intensities of various kinds and stages of teacher concerns. The SoC diagnostic construct of the CBAM set the underlying theoretical base for the categorization of teachers' concern stages and captured by the research using both qualitative interviews and questionnaire-based surveys. The current research further drills down and performs an in-depth analysis of the concerns of the teachers and attempts to understand the extent to which demographic factors (such as work experience, industry exposure etc.) influence teachers' concerns. This is addressed by the fourth research question - **To what extent does demographic characteristics of the teachers influence their concerns, and why? –** And is captured using qualitative interviews and surveys. Finally, the last research question - **How and to what extent do concerns influence each other –** is an attempt to determine the extent to which these various concerns influence each other.

The following sections provides in-depth discussion of the findings based on the analysis and interpretation of the above mentioned research questions.

5.1 The reformed VET curriculum

The current research found that the reformed or newly introduced VET curriculum (new curriculum hereafter) is conceptualized as an integrated framework combining both the occupational standards as well as the implementation support resources. The regulatory authority (NQA) prescribes the occupational standards and the training providers (ABC institute within the context of this research) develop the classroom implementation resources. Drawing the conceptions of curriculum advanced by Billet (2011), Print (1993) and Glatthorn (1987), and interpretation of curriculum documents, it could be interpreted that the occupational standards could be referred to as the intended curriculum and the classroom implementation resources as the taught curriculum. This conceptualization of curriculum as an integrated construct also reflects NQA's conceptualization of curriculum, stated as:

> *A systematic group of units/ courses or sequences of subjects required for graduation or certificate in a major field of study. It includes defining training goals, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.* (NQA 2017)

In-depth analysis of this concept identifies two aspects – a) the subject-matter component and b) the training and delivery component. These two components are described and articulated in a variety of documents (Table 5.1), which were subject to document analysis as part of this research.

Vocational Curriculum Documents	
Subject-matter Component (NQA)	Training and Delivery Component (ABC Institute)
• Qualification Framework for Emirates (Qf*Emirates)* Handbook • VETAC Q+NOSS System Guidelines	• Training and Assessment Guide (TAG) • Assessment Instruments

• International Standards Classification of Occupations (ISCO)	• Student Work Placement Portfolio • Curriculum Development Policy Document

Table 5. 1 Vocational Curriculum Documents

5.1.1 The Subject-Matter Component or the Intended Curriculum:

The subject-matter component and subsequent sequencing and packing are part of what is referred to as the qualification, is defined as:

> *A coherent set of learning outcomes obtained, in a [sic] form of a certificate, diploma or a*
>
> *degree, only when an awarding/ regulatory body determines, following established*
>
> *standards, that an individual has achieved such learning outcomes related to a complete*
>
> *qualification.* (NQA 2017)

Further analysis of the above-mentioned definition refer to "established standards" or the occupational standards or referred to as the NOSS and is defined as:

> *Industry determined and authority-endorsed and industry sector-based National*
>
> *Occupational Skills Standards (NOSS) with associated qualifications comprised of unit*
>
> *standards.* (NQA 2017)

Therefore, drawing and distilling from all the above mentioned conceptions, this research found

that the new curriculum encompasses not only the occupationally-oriented intentions (units,

courses, learning outcomes) of the learning system, but also the learning goals, training methods,

as well as other "arrangements" for training teachers and trainers.

The subject-matter component or the intended curriculum is informed by and articulated across

two documents - a) the QfEmirates and b) the VETAC Q+NOSS system guidelines.

QfEmirates is the newly introduced and underpinning qualification framework for developing all (categories of) qualifications in the UAE and forms the basis of any qualification developed in the UAE. QfEmirates provides a "frame of reference for existing qualifications and a foundation for the design of new types of qualifications, based on 'learning outcomes', which are defined in terms of knowledge, skills, and aspects of competence". The QfEmirates comprises of a) qualification levels for higher and vocational education qualifications, b) learning outcomes, and c) the strands of learning outcomes.

Qualification Levels are defined as:

> *An indication of the relative complexity and/ or depth of achievement and the autonomy required to demonstrate that achievement by the learner.*

The QfEmirates identifies ten higher and vocational education qualification levels and they differ from one level to another with the greatest complexity at Level 10 as shown in Figure 5.2.

Level	Generic Nomenclature	Principal Qualification titles used in the QFEmirates (each with its own profile)		
		Vocational Education and Training (VET)	Higher Education (HE)	General Education (G 12 – GE)
10	Doctoral Degree	—	Doctoral	—
9	Master Degree	Applied Master	Master	—
8	Graduate Diploma	Applied Graduate Diploma	Postgraduate Diploma	—
7	Bachelor Degree	Applied Bachelor	Bachelor	—
6	Diploma*	Advanced Diploma	Higher Diploma	—
5	Diploma*/ Associate Degree	Diploma	Associate Degree	—
4	Certificate*	Certificate 4	—	Secondary School Certificate (G 12)
3	Certificate*	Certificate 3	—	TBA
2	Certificate*	Certificate 2	—	—
1	Certificate*	Certificate 1	—	—

Figure 5. 2 adapted from QF Handbook (NQA 2017)

Each of the above levels, describe the sets of learning outcomes (LOs), which are defined as:

Statements of what the learner is expected to know, understand and be able to do after completing the learning process. In QfEmirates, learning outcomes are defined in terms of knowledge, skills and aspect of competence. (NQA 2017)

The set of learning outcomes or strands "reflect what is expected to be achieved, at the respective level, for each qualification" and define levels in a framework of qualifications.

Qf*Emirates* identifies five strands of learning outcomes (Table 5.2), comprises of knowledge, skills, and aspects of competence in terms of a) autonomy and responsibility, b) role in context, and c) self-development.

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Level X	Strand 1	Strand 2	Strand 3		Strand 4	Strand 5
	Knowledge	Skills	Autonomy and responsibility		Role in context	Self-development
			Aspects of Competence			

Table 5. 2 Five Strands of Learning Outcomes (adapted from QF Handbook NQA 2017)

At a broader level, QfEmirates defines knowledge as a combination of tried and tested theories and best practices related to the field of work. Skills are conceptualized as the "ability" to "apply" the knowledge (informed by underlying theories and practices) to the completion of occupational tasks. Aspects of competence refers to the application of knowledge, skills, and personal and social abilities in meeting workplace demands. At a detailed level, these five strands are defined in the QfEmirates as follows (Table 5.3):

Knowledge	*Knowledge is the cognitive representation of ideas, events or happenings.*
Skills	*Skill is the learned ability to perform a function that in some way responds to or manipulates the physical, informational or social environment of the individual.*
Aspects of competence	*Aspects of competence is the effective and creative deployment of knowledge and skill in human situations, including general social and civic life, as well as specific occupational contexts.*
Autonomy and responsibility	*It refers to the scope of authority to make decisions independently in given situations. It includes the level of self-awareness and self-management.*
Role in context	*This requires learning to adopt appropriate roles within the group and apply social skills and an understanding of the tasks of the group within context*
Self-development	*Relates to how and to what extent the learner can manage his/her own learning.*

Table 5. 3 Definition of Five Strands of Learning (QfEmirates Citation)

5.1.1.2 The Q+NOSS System

The architecture and scope of the Q+NOSS system is described in the VETAC Q+NOSS System Guidelines document. There are three components of the Q+NOSS - occupational profiles, unit standards, and national qualifications as illustrated in Figure 5.3
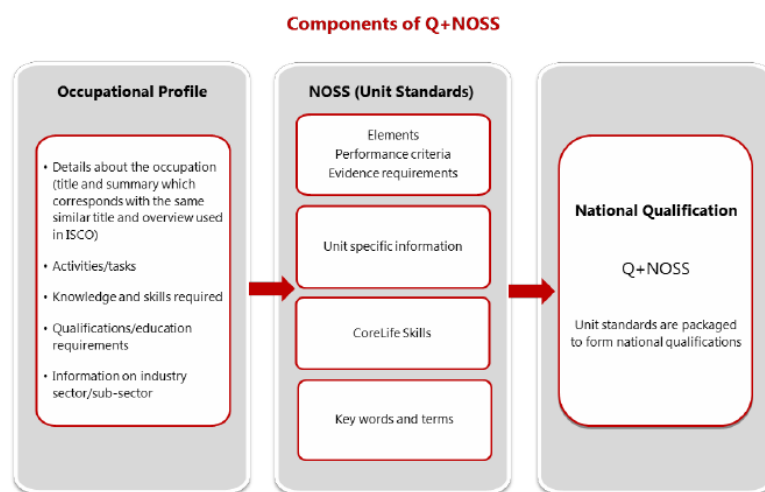
Figure 5. 3 Components of Q+NOSS (adapted from VETAC Q+NOSS Doc)

Occupational Profile: An occupational profile a summary description of an occupation at a national level that represents the national unification of many jobs that align and relate to the occupation. The occupational profile identifies a number of characteristics such as the group of tasks performed at the workplace, knowledge, skills and attributes required, likely work conditions, qualification requirements, experience requirements, indicative salaries, employment prospects, job titles, and career progression.

NOSS: Qf*Emirates* defines NOSS as "*agreed statements that specify competent performance expected in the employment*". NOSS describe what a learner needs to do, know and understand to perform their role in a consistent and competent way. NOSS comprises of unit standards that form an occupation and are grouped by a specific industry sector. A unit standard as per Qf*Emirates*

"specifies the knowledge, skills, and performance, work outcomes, standard of performance to be demonstrated, conditions under which work is performed, and evidence required for the assessment of competence".

Q+NOSS: Recognized national qualifications (comprising of a suite of unit standards) that are aligned with the Qf*Emirates,* which are exclusively approved for use in the UAE.

Each level of the Q+NOSS has a summary level descriptor and a strand-based level descriptor. The summary level descriptor identifies the range of specialized knowledge, skills and aspects of competence required to meet the learning outcomes specified at that level. For instance, the summary level descriptor of a vocational qualification at Certificate IV level (Figure 5.4) broadly outlines the learning outcomes expressed in terms of functional taxonomies.

Level	Summary Level Descriptor
4	Learning outcomes at Level 4 indicate a broad range of specialised and relevant associated knowledge, including some theoretical and abstract concepts with limited depth. It also covers: • using specialist cognitive and practical skills to identify and deploy known solutions to defined problems including deployment of appropriate retrieval tools and which may be subjected to change in a number of contexts • implementing given approaches to complex procedures and processes, leading and being accountable for small peer teams within a technical activity, and providing limited supervision • presenting and explaining information concepts and ideas • producing from pieces of information, cohesive texts that may be short and varied • applying, reflecting and communicating an assortment of mathematical procedures and representations in a number of contexts, which may be interrelated • taking responsibility for own learning within a predictable environment • complying with ethical standards.

Figure 5. 4 Level Descriptor for Level IV (NQA 2017)

From the above Figure 5.4, it could be seen that at Certificate IV level, the action verbs used to express occupational functions such as "use", "implement", "present", "produce", and "apply". Qf*Emirates* identifies a functional taxonomy framework (Figure 5.5) that identifies and maps appropriate action verbs (taxonomies) for each level of the qualification framework.

QF level	Function	Taxonomy
9-10	Policy	Analyse, Develop, Forecast, Research
7-8	Managing	Evaluate, Lead , Manage
6-7	Specifying	Assess, Commission, Design, Develop, Direct, Estimate, Facilitate, Implement, Investigate, Report, Specify
6	Controlling	Audit, Control, Diagnose, Evaluate, Inspect, Institute, Mobilise, Monitor, Plan, Procure, Regulate, Schedule, Supervise, Verify
4-6	Maintaining capacity	Administer, Comply, Coordinate, Develop, Maintain, Organise, Respond, Test, Utilise
1-4	Performing/ carry out	Align, Apply, Assemble, Attend, Build, Calibrate, Carry out, Check, Compile, Conduct, Configure, Construct, Contribute, Control, Deliver, Document, Erect, Fabricate, Fault-find, Identify, Install, Make, Modify, Monitor, Operate, Overhaul, Perform, Position, Prepare, Produce, Provide, Rectify, Repair, Select, Sell, Service, Store, Troubleshoot, Undertake, Use

Figure 5. 5 Functional Taxonomy Framework (NQA 2017)

On the other hand, a more detailed strand-based level descriptor outlines, in more specific terms, the "functional descriptions" or "occupational competencies" under each of the five strands (Appendix 5.1).

The current research analyzed three documents - three Q+NOSS documents at Level III, Level IV, and Level V respectively (Appendix 5.x). These unit standards within the Q+NOSS specify the learning outcomes (LOs) and Performance Criteria (PCs) for each individual unit within the Q+NOSS.

An in-depth review of the Level III (certificate) NOSS, which part of a Project Management qualification or the Q+NOSS indicates that the specific unit standard follow the standard template prescribed by the VETAC Guidelines document and identifies the following (Table 5.4) :-

1.	Title	Contribute to Quality Methods in the Control of Documented Information			
2.	Code	NQA to enter code			
3.	Credit and duration	Credit value	3	Duration	45 hours
4.	Aim	This unit aims to provide learners with the knowledge and skills to contribute to quality systems to support standardization of technologies and processes in organisations.			
5.	Learning outcomes	At the end of this unit, learners will be able to: • describe the control of documented information • contribute to preparing documented information • contribute to quality improvements in documented information			
6.	QFEmirates level	3			
7.	Outcomes, performance criteria, and evidence requirements				

Table 5. 4 Attributes of a Unit Standard (NQA 2017)

Data from the Table 5.8 indicates that the above unit is part of a Qf*Emirates* level III qualification and the three learning outcomes are articulated using the action verbs (describe, and contribute) as identified in Functional Taxonomy Framework (Table 5.5). There are "Performance Criteria" (PCs) corresponding to individual LOs (Table 5.8). Performance Criteria is defined as the "*description of the requirements a learner is expected to meet or demonstrate to determine that certain learning outcomes have been achieved*". The PCs are also articulated following the action verbs (Define, Explain, Distinguish, Access) that are appropriate for the qualification level as identified in the Functional Taxonomy Framework (Table 5.5)

Outcome 1	Describe the control of documented information
Performance criteria	
PC1.1	Define and identify documented information
PC1.2	Explain the roles and responsibilities of the document controller
PC1.3	Distinguish between working and official documentation
PC1.4	Access reliable sources of information to report on project status and gatekeeping
Specific evidence requirements	
Product evidence and/or performance evidence that learner is able to describe the control of documented information.	

Table 5. 5 Taxonomy Framework (NQA 2017)

5.1.2 Training and Delivery Component or the Taught Curriculum:

The taught curriculum is the training providers' adoption of the intended curriculum (Q+NOSS). At the ABC institute, the Curriculum Development Unit (CDU) in consultation with the teachers prepare a Training and Assessment Guide (TAG) that interprets the Q+NOSS and use them as a reference for their classroom purposes. The TAG is a formal reference document that acts as a planning document, which defines the scope of training and assessment activities mapping to a 12-13 weeks terms. The TAG also identifies the classroom activities, assessment methods, assessment schedules and reference materials. TAGs for individual units are distributed to the students during the first week of the term, and acts as a contract between the teacher and the student.

Within the context of this research, taught curriculum refers to the "program of activities" designed for the purpose of delivering the (intended) curriculum. The training providers (with support from curriculum developers, and mainly teachers) design these programs of activities. Within the context of this research, a variety of teaching resources represent the taught curriculum at large, and are specifically developed by the vocational teachers who are assigned to deliver one or more unit standards of a specific qualification for a specific level. These programs of activities are

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documented in the Training and Assessment Guide (TAG), Assessments and Work Placement Portfolio.

TAG is the vocational teachers' translation of the Q+NOSS, an operational "syllabus" or a "plan of research", that would enable the adoption and implementation of curriculum intentions. The TAG identifies the teaching topics aligned with the predefined LOs and PCs, the assessment types and other pedagogical aspects pertaining to the delivery of the unit. The TAG is what could be referred to as the "taught curriculum", and are developed in most cases, by teachers to teach a particular qualification unit. Teachers prepare a TAG for each qualification unit, which further guides the preparation of a lesson plan and assessment plans.

An in-depth analysis of three TAGs, assessment instruments, and student workplace portfolio (for curriculum units at Level III, Level IV and Level V) found that:

- There are multiple versions of the same TAG posing challenges to teachers in regards to its currency, and appropriateness
- Action verbs used to identify PCs are not completely followed by trainers while developing assessment instruments.
- Aspects of competence (autonomy and responsibility, role in context, and self-development) are not captured within the TAG or student work placement portfolio requirements
- Teachers independently develop teaching resources, classroom activities and training support resources within their own "sphere of influence" with no standardization of these resources across multiple campuses of the ABC institute. This has led to varying degrees of learning experience for students learning the same unit in a different campus.

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- TAG does not explicitly include aspects of knowledge, skills and aspects of competence in all curriculum units.

Thus from all the above discussions it is clear that the teachers have certain reservation in the adoption of the new curriculum, in particular with the taught curriculum. The research found that all the teachers have started using the curriculum, despite all the above-mentioned challenges and constraints. The following sections discuss in more detail about teachers' approach and behavior with the new curriculum.

5.2 The Levels of Use of the Curriculum

This section attempts to answer the following questions – have the teachers started using the new curriculum? If so, are they being taught or implemented as per the prescribed intentions of the qualification and regulatory requirements? The answers to these questions were explored using qualitative, semi-structured interviews with twenty-seven teachers across three campuses of the ABC institute and subsequent analysis of their responses. According to Hall et al. (2014), the key purpose of a LoU interview is more than identifying and locating an adopter at a particular Levels of Use (LoU), further it informs change advocates and institute leadership with meaningful information that could be used to facilitate the use of the innovation.

The interview questions were informed by the Levels of Use (LoU) construct of the CBAM framework. As a tried and tested diagnostic construct of the CBAM framework, LoU, according to Hord et al. (2014), "describes the behaviors of the users of an innovation", and does not "focus on attitudinal, motivational, or other affective aspects of the user". Table 5.6 provides a description of each behavioral levels of the LoU diagnostic construct. Firstly, the interview started with a purpose of finding out whether the adopter has started using the innovation. Within the context of the research, all the participants had already started using the new curriculum. The next objective was to gather additional details about how the innovation (newly reformed curriculum) is being used within the ABC institute context. Here, the purpose of these additional questions are to determine the actual use of the curriculum, and how the vocational teachers implemented it. In their research, Hord et al. (2014) found that the question that provides the most useful information is to ask what kinds of changes, if any, they have made in their use of the innovation.

0	Nonuse: State in which the user has little or no knowledge of the innovation, has no involvement with the innovation, and is doing nothing toward becoming involved.
I	Orientation: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon the user and the user system.
II	Preparation: State in which the user is preparing for first use of the innovation.
III	Mechanical Use: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.
IVA	Routine: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.
IVB	Refinement: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.
V	Integration: State in which the user is combining own efforts to use the innovation with the related activities of colleagues to achieve a collective effect on clients within their common sphere of influence.
VI	Renewal: State in which the user reevaluates the quality of use of the innovation, seeks major modifications or alternatives to the present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

Table 5. 6 Levels of Use of the Innovation (adapted from George et al. 2013)

The current research describes the behavior of teachers while they are engaged in the process of implementing the new vocational curriculum. Firstly, the research found that all (100% of) the teachers at the ABC institute have started using the new curriculum, at varying qualification levels. There are many instances where the new curriculum is being introduced for the first time, and other cases where a teacher is teaching the new curriculum for the first time at the ABC institute. In both circumstances, it is a new experience for the teachers. Secondly and more importantly, at a broader level, the research found the following as outlined in the Table 5.7:

a) 85% of teachers are currently at Level III (Mechanical). This means that at this level, teachers focus most of their efforts on the "short-term, day-to-day use" of the curriculum with "little time for reflection" (Hord et al. 2014).

b) 10% of teachers are at Level IV (Routine), indicating that these teachers (at this level) have attempted to make minor changes to the implementation of the curriculum to enhance their own classroom delivery practices.

c) 5% at Level IV B (Refinement), indicating that these teachers (at this level) have attempted to make changes to the implementation of the new curriculum to enhance students' learning experience, within their context or "sphere of influence" (George et al. 2013).

LoU 0	Non Use	0%
LoU I	Orientation	0%
LoU II	Preparation	0%
LoU III	Mechanical	85%
LoU IV A	Routine	10%

LoU IV B	Refinement	5%
LoU V	Integration	0%
LoU VI	Renewal	0%

Table 5. 7 Levels of Use of Teachers

The following sections discusses more details of teacher responses corresponding to their LoUs.

5.2.1 Level III Mechanical Use:

Hord et al. (2014) describe Level III Mechanical Use as:

> "State in which the user is focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use".

The current research found that the majority (85%) are at Level III Mechanical Use (of the curriculum). This means that these teachers have made necessary changes to the use of the curriculum, to primarily support and streamline their daily classroom delivery activities. In-depth analysis and interpretation of the qualitative interview results indicate that majority of the teachers have invested considerable amount of time and effort to make necessary changes in how they contextualized teaching and learning support resources to facilitate the implementation of the curriculum for their internal use. Most of the teachers found that there is little or no guidance on how to implement the curriculum, and henceforth adopt strategies to contextualize the curriculum for actual use. These contextualization includes the development of additional training resources, classroom exercises (or activities), facilitating industry visits, and collaborating with other teachers to list a few. Teachers at the ABC institute rely on the Training and Guide (TAG) as a reference

document to identify the Learning Outcomes (LOs) and Performance Criteria (PCs) specific to a curriculum unit. Teachers attempt to revise their training support resources as means to address challenges arising from lack of institutional support, unavailability of relevant teaching resources, language proficiency challenges of the students, absence of professional development and lack of formal and appropriate orientation processes.

One of the most experienced teachers (Participant 10) within the Environmental Health and Safety discipline was satisfied about the curriculum and commented about the minor changes she introduced to the program to facilitate and enhance her classroom management practices. Participant 1 stated that:

> *It was very good. I really enjoyed teaching it. In my opinion, it was very successful for the students. However, not all learners are the same; we need to make changes to our teaching resources to fit their needs. Some students, they have experience in the field. Others, they come with zero experience. What I try to do, I always customize the courses according to the class. I teach it to their needs. This course for example it gives me the freedom to model it according to the students.*

A minority of the teachers within the Business discipline also made a few minor changes to their teaching approaches. They adopted new provisioning strategies and modified their teaching resources to enhance their teaching and students' learning experiences. One of the Project Management teachers (Participant 2) who introduced projects-based learning to implement the new curriculum stated that:

> *I changed my approach because I think language came as a big barrier and the students were very much intimidated by seeing lengthy PowerPoint presentations slides. They did*

not want to listen and do all these things. Therefore, I broke the theoretical concepts down and then I started developing small projects, small activities, group works and even role-plays. That was the change and that worked well in the class.

However, a couple of other teachers who started teaching the new curriculum felt that learners' language proficiency skills are a challenge for effective implementation of unit, within a 12-14 weeks term. One of the EHS teachers (Participant 1), who is a non-Arabic speaker, introduced a bilingual course book to deal with language related challenges and stated that:

The students prefer to have a hard-copy printed books on the table, so they can write the particular bullet points in Arabic. This is a really good way of thinking. I will also do the same, if I were a student, which is normal. However, what I did, I gave them a course note (course handbook), course print out from the legal requirement which I used to teach them.

Thus, from all the above discussion, it could be interpreted that teachers have started adopted the curriculum to an operational level and are introducing minor changes to support them with the daily operational challenges of implementing the curriculum.

5.2.2 Level IV A Routine

The research also found that 10% of the teachers at the ABC institute were at Level IV Routine Use. This means that, for these teachers, the use of the curriculum is "stabilized" (Hord et al. 2014). These teachers who were found to be at Level IV are mostly those set of teachers who possess more than ten years of teaching experience and equal or more number of vocational exposure. Teachers who were identified at Level IV felt that they implemented the curriculum by making minor

changes made in the ongoing use. One of the teachers (Participant 3) possessing more than twenty years of teaching experience commented that:

> *Overall, the course went well. The course was the right level of the learning for the students, I think. It was the first time we are offering a Level 6 Diploma and you know at an advanced level, it is naturally challenging. However, I made some changes to keep up with the schedule. You know, we have only 12-13 weeks.*

Most of the teachers at this level were forced to make a few changes mainly because of the schedule constraints. The schedule related challenges were clearly reflected in the words of a Business teacher (Participant 4) we outlined the schedule in more details by stating that:

> *However, the biggest problem is the time frame during the 12 weeks, essentially those 12 weeks; you can cut the first two weeks because as we said earlier on, there are no students yet really until week three. Then we have a week of technical problem. So we start late and requires special strategies to manage the course.*

A few teachers also made revisions to the evidence collection strategy of the assessment requirements to enhance learner interaction and participation. Participant 5, who introduced technological changes to the submission of student assessments commented that:

> *So I suggest instead of a dead document, a dead slide I am going to open...It was my initiative and it was our idea. I do not want them to record their voice on it and submit it to me. Yeah. I am going to get the slides as is and have them make a live presentation.*

Thus form these discussions, it could be interpreted that these teachers are contributing to improving the use of the curriculum by making necessary minor adjustments into their adoption

practices to enhance their teaching practices and learners' understanding of the curriculum objectives.

5.2.3 Level IV B Refinement

A relatively lesser number (5%) of teachers were found to be at Level IV B Refinement. According to Hord et al. (2014), Level IV Refinement is a "state in which the user varies the use of innovation to increase the impact on the clients within immediate sphere of influence". Within his "sphere of influence" one of the Project Management teachers (Participant 15) introduced a web-based system to implement the curriculum objectives for the students in his campus. Considering the "vocational" aspect of the curriculum, one of the Business teachers introduced a working model of a Human Resource Management Information System (HRIS) for his students and recreated an actual workplace within the classroom. Participant 15 commented that:

> *So what I did I had HRIS system, I developed an HRIS system, I am not an expert in MS Access, but I have an intermediate level of expertise, so what I did is I designed an information system where students can go in print document, upload CVs, upload their pictures etc.*

Similarly, one of the Engineering teachers (Participant 12) converted his classroom to an engineering lab for the students to better understand the theoretical concepts. Participant 12 stated that:

> *I create practical cases; bring physical devices to the class so they can visualize them. I balance between theory and practical. Even basic course, for example, I am explaining resistance. Therefore, when I explained resistance, we have to show real time application*

of the resistance. A water heater or something. So when they see, this is resistance. So sometimes they need to, you know, work on it, finding themselves interacting with the features...

However, one of the English language teachers (Participant 20) adopted a different strategy to engage his students. He highlighted the significance of the cultural context and background of the students and its positive impact on teaching and learning. He stated that:

For me, the rapport building is the key to establishing any relationship here. One of the things that people love here and they have a great love for is poetry, where poetry ... Sheikh Zayed was a poet...He was a poet. So, I write poetry. Then we go through what poetry is. They love poetry. So I began a class, my foundation stage two classes with a poem of the day and they love it. There are problems with ninety-five percent of the syntax but they understand the music.

Therefore, all these above strategies and techniques adopted by these teachers indicate their level of commitment to the use of the curriculum and the nature and amount of changes that have been introduced to the effective use of the curriculum. Having said that, these teachers also experience a variety of emotions, feelings and other affective concerns as they implement the curriculum. These concerns are also indicative of different teachers' behavior and consequent patterns of interaction with the new curriculum. Teachers concerns and their characteristics are discussed in more detail in the following section.

5.3 Teachers' Views and Concerns

In general, these findings indicate that a majority of the teachers appears to have highly intense personal and information concerns about the curriculum. A careful and in-depth analysis of teacher-interviews brings out a range of concerns, across self, task and impact stages. However, a common theme across these concerns points towards the sensitivities held by teachers regarding their own professional identity. Most of the teachers observe that the prescriptive model of curriculum development approaches neglect their professional competence and commitment. Most of the teachers feel under-valued. "*I was never invited to any development meetings or committees*", said one of the teachers. "*I really don't know who the team members are...and the development procedures*". These kinds of concerns expose serious gaps in the development process, particularly pertaining to the teacher-engagement policies that governs the curriculum development committees. However, teachers believe that their inclusion, if formally mandated, would positively contribute to a more robust curriculum and enhanced learner-experience. "*I think," said* another teacher, *"if we are allowed to be part of the curriculum development process, then obviously the curriculum will be more better...unfortunately we are not allowed to provide such inputs".* These highly intense personal and informational concerns, theoretically falls under the "self-concern" stages of the SoC framework. These kinds of personal and informational concerns, according to Hord et al. (2014), are likely to be intense during the early stages of the curriculum implementation. Usually teachers do not express their personal concerns as explicitly as other concerns as the former is more about "their own ability to teach the course". On the other hand, informational concerns, another high-intensity concern indicate teachers' concerns arising out of issues relating to understanding basic aspects of the curriculum, availability of preparatory materials, accessibility

of training resources, and other information sources that equips them to understand and apply the curriculum in a classroom setting.

Figure 5.6 illustrates a multiple-peak profile representing a combination of high personal, informational, collaboration and refocusing concerns and a moderately high management concern and relatively lower consequence concerns. Overall, the profile delineates a set of vocational educators who are being challenged by the implementation requirements set by the innovation, the reformed curriculum. It could be interpreted that these teachers are somewhat unconcerned (stage 0) about the curriculum, and positively appears to be interested in learning more about the curriculum from a proactive perspective (stage 2). Teachers appears to have a relatively intense management (stage 3) concerns indicating high concerns about time, supporting resources, and other managerial challenges related to the innovation. The teachers do not appear to have a great deal of consequence concerns (relatively lower intensity stage 4).This could be probably because of the highly intense personal, informational and refocusing concerns that overrides concerns about how it impacts the learners. From a developmental conceptualization perceptive, teachers' personal and informational concerns normally have to be reduced before they can look at the curriculum more objectively and how it influences or affects students' learning experiences. Highly intense collaboration concerns indicates that teachers appear to have concerns about collaborating with their own colleagues or from other campuses and with curriculum developers for the betterment of the curriculum. In addition, a higher refocusing concern captures teachers' urge to make changes to the reformed curriculum and inherent challenges.

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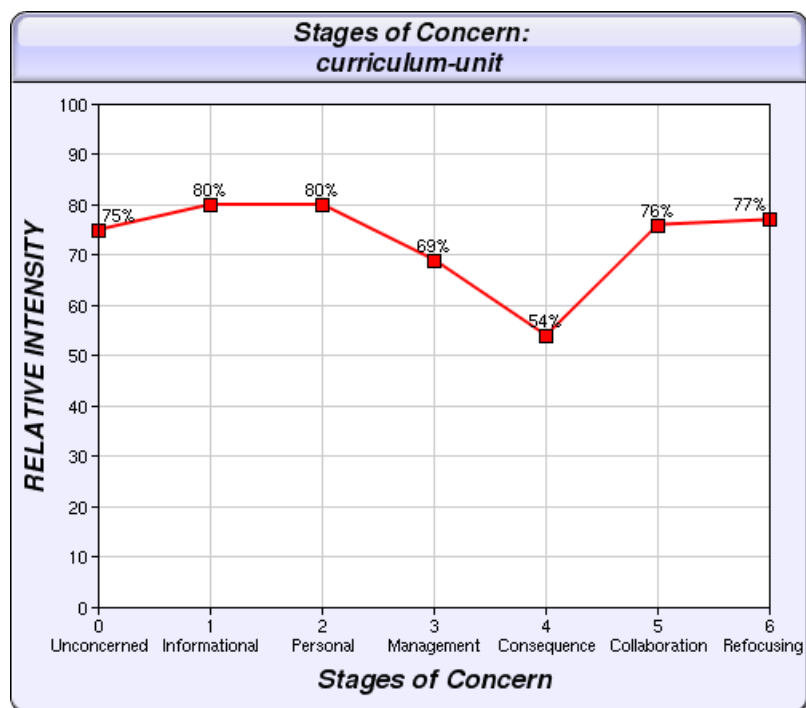
Figure 5. 6 Teachers' Stages of Concerns and Relative Intensity Scores

According to Hord et al. (2014), this kind of a profile signals the need for immediate attention by the concerned leadership or the change facilitator.

The graph reveals that teachers at the ABC institute have highly intense Stage 0 concerns. A relative intensity of 75% at Stage 0 indicates that majority of the teachers are "not concerned" about the new Q+NOSS-based curriculum. This does not completely mean that they are not using (or teaching) the new curriculum. Rather, this is indicative of teachers' lack of adequate focus to the new curriculum to the intended level of expectations set by the sponsors of the new curriculum. In simple terms, it could be interpreted that most teachers do not view the new curriculum as one of their top priorities within their current field of practice. Going by the words of most of the teacher respondents, they are "overwhelmingly flooded" with multiple academic and administrative

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responsibilities. Those teachers who are less concerned about the new curriculum might have been tasked with additional responsibilities resulting in scope-creep and consequent schedule constraints.

Most of the teachers reported that a range of additional responsibilities was entrusted upon them mainly due to staff shortage and lack of an efficient task-allocation strategy. These additional responsibilities demands taking up the role of a course coordinator, assessor, internal verifier, workplace coordinator, and/or curriculum development contributor, depending on the contextual and often short-notice workplace requirements.

It could be presumed that these additional responsibilities restrict and refrain teachers from concentrating on their classroom teaching efforts, and might negatively affect the quality of training and learner experience.

According to George et al. (2013), Stage 0 does not determine whether a respondent is a non-user or a user of the innovation, rather it "addresses the degree of interest in and engagement with the innovation in comparison to other tasks, activities, and the efforts of the respondent". Within the context of this research, it could be interpreted from the results that the newly reformed curriculum is not the only thing the teachers are concerned about, even though they have started teaching the new curriculum in their classrooms. These emotions and feelings are reflected in the words of most of the teachers who feels that they are "overwhelmed" with a multitude of responsibilities, which significantly influences their task priorities. One of the teachers who reported a highly intense (Stage 1) informational concern states that:

It was quite overwhelming in the beginning because I was put in the deep end. Though I have an MBA and specifically I actually did really well within the component of project management. The only part that I suffered with was that there was no training for me because I was new into it and by default; I was also made the Course Coordinator. Now being the CoCo was overwhelming in itself, not knowing what was there because there was nothing available and I had to start from scratch.

Managing multiple responsibilities were obviously perceived as a challenge by most of the teachers as they had to be accountable for a number of tasks which includes assessment preparation, workplace coordination, and resource development to name a few. One of the teachers who was assigned multiple responsibilities commented that:

Because we are not only teaching but we are assessing...Yeah. Out in the field, we have to go for workplace visits, to catch up with our internship students. We have to prepare for our lessons, develop assessments and a lot more. All these tasks and then some other administrative tasks. It takes away a lot of our teaching time.

A majority of teachers responded that these informational concerns are mainly due to the lack of awareness and orientation. Teachers, especially those who were new to ABC lamented about the inappropriate orientation and guidance system provided to new teachers who are left clueless about the details of a unit they are assigned to teach. One of the new teachers strongly expressed her grief by saying that:

I did not know which TAG to use, there were multiple TAGs in the L drive and nobody told me...actually, there is no proper orientation.

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Thus, these findings provide an indication that the teachers are placing relatively less priority on the implementation of the newly Q+NOSS-based curriculum, mainly due to the additional responsibilities that have been assigned to them on top of their teaching assignments.

5.3.1 Informational Concerns:

The above graph reveals that teachers appears to have highly intense (80%) informational concerns regarding the subject-matter aspect of the curriculum, supporting operational resources, and fundamentals details about the structure and sequencing of curriculum components. From a positive perspective, this result could be indicative of teachers' eagerness to be adequately prepared for implementing the curriculum in a more effective manner, to devise appropriate and robust assessments, and enhance students' learning experience. This result could also mean that teachers are less-informed about the fundamental aspects of the curriculum, its structure and key implementation support resources.

According to George et al. (2013) and Hord et al. (2014), a high score in Stage 1 indicates that the respondents are curious to understand more about the innovation. Within the current research, these results could be interpreted that the teachers' personal concerns are substantive in nature, focusing more on the fundamental aspects and structure of the newly reformed curriculum. Teachers at ABC institute have varying degrees and nature of informational concerns arising from the lack of support resources (to facilitate curriculum implementation) such as a guidance document, TAG, training materials, and assessment instruments. One of the teachers who was identified to have highly intense informational concerns commented that:

When I came here, I was asked to teach this subject and there weren't any course book or learner support resources (for the students), but with the requirements, I have to develop them through my own presentations.

Further, teachers were also concerned about the validity, reliability and currency of the existing information available with the ABC institute in regards to the "taught curriculum". One of the teachers stated:

There was a TAG here, which has become really outdated and I think it was copy and paste from. I wasn't given anything. The expectations were because I was a senior teacher and had prior knowledge and experience and of teaching, with little consideration was put up with this subject, which is entirely different to my previous ones.

Teachers' information concerns also included factors relating to teaching a specific qualification unit, which is offered for the first time in the institute. Most of the new teachers (who joined ABC relatively recently) feared that they have to figure all possible information about the unit by themselves, which not only pose accountability related risks but also significant time-management challenges. This was evident in one of the newly joined teacher's comments who stated that:

I did not have the opportunity to find any previous reference resources for level 6 because this was the brand new which I couldn't find it anywhere. So now, I will be the source of information for others, for other teachers whoever is going to teach from in any other campus.

Some of the teachers felt that information relating to the management and organization of assessment are not satisfactory and feels that they are inappropriately packaged. One of the teachers commented that:

> *When I am introducing electrical fundamentals to them, at least we have to start with electricity, what is it and from where we are getting electricity, what are the different units of measurement, etc. So those basic things are not covered or addressed by the curriculum. This is at level 4. In Level 3, there might be some introductions. I mean there are no logical sequencing or prerequisites.*

Thus from all these above discourses, it is clear that teachers have highly intense informational concerns mainly due to the lack of availability or presence of fundamental aspects required for the implementation of the curriculum which includes guideline documents and training resources.

One of the key observations is that majority of the teachers are not aware of the regulatory document or the "intended curriculum" (Q+NOSS) as a guidance for a particular unit they are assigned to teach. Instead, teachers make references to the "taught curriculum" which is the Training and Assessment Guide (TAG) as a guidance document previously prepared by a teacher who taught the unit during one of the previous semesters.

5.3.2 Personal Concerns:

The above graph (Graph 5.x) indicates that teachers appears to have highly intense (80%) (personal) concerns about their status, job security, job roles, teaching methods, and aspects of personal ethics and integrity, and other factors that might have an effect on them. This also is indicative of varying degrees of doubts and uncertainties about the newly reformed curriculum,

from a personal perspective. It should be noted within the context of this current research, the results indicate that teachers at ABC institute share an equal weightage or intensity (80%) of personal and informational concerns. George et al (2013) acknowledges the high correlation between Stage 1 (Informational) and Stage 2 (Personal) scores, however, underlines the distinction between them, despite these concerns occurring simultaneously across a number of research studies.

One of the teachers who was identified with highly intense personal concern was worried about the multiple roles he has been assigned and the amount of stress accompanied with such responsibilities. He also speculated challenges that would probably jeopardize his commitment and credibility towards his role when he mentioned that:

> *It was really hard for me you know like because as I said, I had sleepless nights, indeed because in a way I am doing two different things. I am an assessor (teacher) and I am the internal verifier. So, my stress as a teacher was twice than any other teachers because I am also an internal verifier. So now, what if I am delivering the unit and I have done some mistakes in there, I have me myself being the internal verifier imagine the situation I am in.*

A vast majority of teachers raised potential conflicts with existing support systems of the ABC institute citing inadequate assistance from the curriculum development unit in regards to creating awareness and provisioning of supporting resources. This was reflected in one of the teacher's comments when she said that:

> *Then, another challenge, which I will say will be a weakness is about the fact that the curriculum developers, they give us very scanty support.*

Teachers' personal concerns also highlighted their dissatisfaction with the level of value and recognition bestowed upon teachers by supporting institutional functions. A considerable percentage of felt that their expertise are not appropriately considered while developing the curriculum. Teachers reiterated that they are invited to curriculum development committees and have no involvement in the revision or development of the curriculum. This disengagement concern was expressed by one of the teachers who strongly commented that:

> *It will be a good initiative if they engage teachers...if they take inputs from teachers...when the curriculum is being designed....it will be good if we are also part of it...it will be better designed....*

5.3.3 Management concerns:

The data from the graph shows teachers at the ABC institute experience a moderately intense Stage 3 concern (20 percentile points below the highest stages), in comparison with a highly intense personal and informational concerns. According to Hord et al. (2014), teachers with intense management concern is indicating that they have moderate to high concerns about time, logistics, or other managerial problems related to the innovation. Within the context of this research, this could be interpreted as a reflection of teachers' task-related concerns arising from the inadequacy and deficit of time, resources and administrative support required to implement the new curriculum in line with its intended objectives. These management concerns are resonated throughout teachers' verbal responses captured using the qualitative interviews. The research found that most of the teachers at the ABC institute experience management concerns arousing as a consequence of challenges in regards to work-schedule and logistics constraints. A considerable amount of respondents felt that most of the management concerns are mainly because of inefficient

distribution of workload. One of the teachers who was reported to have highly intense management concerns shared her views:

> *We have serious time management issues. This is because the term ends this week and the next term will start next week...we will have course next week...so we hardly get time to prepare for our classes in advance...it is not possible to prepare for classes in advance...we have to go back home and we have to make sure that we prepare for classes at home only...so we have so many hours of teaching, we hardly find time to prepare for our classes, lesson plans, TAGs, classes, and everything could be planned at home only…*

Teachers also reported their concerns related to logistics in regards to collaboration with other teachers in other campuses of the ABC institute. Most of the teachers were found to have challenges in connecting with their peers teaching the same unit, due to work overload. One of the project management teachers stated that:

> *I am teaching six units in this term and also assisting another unit by extending my coordination...so I do not get enough time...Also, I have work placement students, who I have to monitor and visit...Also, as an assessor, I have assessor responsibilities.*

For some teachers, this research found that, their management concerns are too intense in such a way that they inculcate a feeling of stress or frustration among teachers as they are not only worried about their own performance, but also about the consequences, which is about their students' learning experience. This is reflected in the words of one of the teachers who stated that:

> *... within that element there are 5 PCs and it was so condensed. The CDU expects us to have time. In reality, we do not have sufficient time. And it was not about the time itself. We do not get sufficient time to ever understand who the learners are. Where they come from,*

and what sectors are they involved in, what working hours do they have, do they have an

understanding of it.

Teachers also reported issues related to classroom management arising out of lack of proper time management at the institutional level. A few of the teachers felt that the institution must invest more time and effort to enhance the efficiency of their teaching load distribution model. One of the teachers who reported high management concern highlighted the challenges with preparing for the upcoming terms and shared that:

But the biggest problem is the time frame during the 12 weeks, essentially those 12 weeks, you can cut the first two weeks because as we said earlier on, there are no students yet really until week three. Then we have a week of technical problem. So the basic technical problem was that we didn't have access to the course itself until around week four. So we came into the game late. We came badly prepared here and we had to catch up immediately with a group of students who struggle.

Thus, from all the above discourses, it could be assumed that teachers' management concerns are found to be because of poorly modelled workload distribution practices, assigning teachers to related but distinct tasks, and lack of management support in regards to the provision of supporting resources and mechanisms.

5.3.4 Low to Moderately intense consequence concerns

A relatively low to moderate consequence concerns could be indicative of teachers' early concern stages. Since most of the teachers are teaching the new curriculum for the first time, they are in the early stages of curriculum implementation and hence it is natural for teachers to have highly intense

informational and personal concerns and relatively lower consequence concerns. This result indicates that at the time of conducting this research, teachers at the ABC institute are fairly concerned about how the new curriculum influences students' overall learning experience. According to George et al. (2013), Stage 3 concerns focus on the "relevance of the innovation for students; the evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes". Within the context of this research, teachers have just started teaching the new curriculum and are in processing are more concerned about themselves, and more grossly engaged in getting more information about the curriculum itself. This means that, most of the teachers have not entered a matured stage of implementation to a level where they start evaluating the impact of the curriculum on students' learning experiences. However, teachers who reported intense consequence were mostly found to be experienced teachers with substantial amount of teaching or industry experience. These teachers were relatively experienced relatively lesser informational concerns and higher consequence concerns. One of the experienced teachers with more than twenty years of teaching experience was worried about the currency and occupational relevance of the new curriculum and stated that:

> *...there is a vast gap within the industry to that of the classroom. Within this curriculum, everything is theory based, and less application-based aspects. The FE sector is missing and there is a serious gap between what is identified in this curriculum and what is being practiced in the industry at the moment...*

Teachers also feel that students might be impacted because of the how the curriculum units are packaged and sequenced. One of the teachers expressed her concern relating to the misalignment and stated that:

...No, these concepts should be exposed to students at a different stage. Now, the current system exposes the student to this concept at the wrong stage. Students should be exposed to these concepts in stage 1 for example, this at stage 2, and this at stage 3". There is no order, and subjects were thrown all over the place.

Another set of teachers who possess substantial amounts of industry experience alerted the currency gaps in terms of regulations found in the subject matter of the curriculum and how it would negatively inform the learners. An expert in environment, health and safety, this teacher stated that:

It is related to the regulations and the regulatory bodies in Health and Safety, and the prevailing laws and constitutions in the country, then we have to be up to date at each and every stage and level. The current curriculum uses references to OSHAD regulations, I could see that some linkages are made to old concepts...old terminologies...this would affect learners...they are not informed about current standards…

Thus, from all the aforementioned discussions, it could be interpreted that there are various aspects of the subject-matter component of the taught curriculum, as factually identified by some of the teachers that are not current in terms of industry standards or occupational regulations. These teachers feel the need to promote continuous consultation and subsequent revision of the vocational curriculum at regular and short time intervals. Teachers who possess considerable amount of industry exposure and occupational domain expertise proposes a continuous quality improvement model for the curriculum to be in concert with the dynamics of the industry and related occupational regulations.

5.3.5 Collaboration concerns:

This is indicative of teachers' challenges and logistical hurdles that restrict them from liaising with their colleagues, teachers from other campuses and curriculum development team members (Hord et al 2014). The current research and subsequent findings from teacher interviews and surveys identify teacher's collaboration concerns characterized by a relative intensity of 76%, which is relatively a higher concern index. This could mean that teachers at the ABC institute have serious concerns in regards to coordinating and collaborating with other teachers regarding the use of the curriculum. These results are indicative of teachers' challenges and other academic and administrative constraints, which limits consultation with their peers from the same campus or other campuses teaching the same curriculum unit. Teachers have reported a multitude of collaboration concerns ranging from lack of time, logistical challenges, and heavy workload, to inadequate or informal collaboration systems of the institutions. One of the teachers who reported a highly intense collaboration concern cited shortage of time as one of the key collaboration challenges and stated that:

> *Not enough time to collaborate. Definitely not enough. The only time I spoke to a teacher from the other campus was the course coordinator. So I have been emailing him and talk to him about the assessments and that is all the things I have done so far in this term.*

Another teacher who also reported high collaboration concern feels that collaboration meetings are not well organized and formal. She stated that:

> *There are meetings and discussions. But that doesn't happen often. Probably one in one term, something like that. Even last term, I don't know whether it happened or not.*

Teachers in general shared their dissatisfaction in regards to the provisioning of formal opportunities to collaborate with the curriculum developers of the ABC institute. Most of the teachers reported that they are either not invited to meetings or deprived of consultation opportunities. One of the new teachers expressed her views when she said:

Here I never got an opportunity to participate in curriculum development meetings. Some discussions happen through emails. But, that is what. I used to get email replies. But that did not help me. Because it was not sufficient for a new teacher like me.

Furthermore, one significant issue that has been frequently discussed by the majority of teachers who participated in the research teachers is relating to the "standardization" challenge. A majority of the teachers perceive that constraints with collaborations results tend to generate inconsistent interpretation of the curriculum objectives. Some of the experienced teachers felt that the learning outcomes and performance criteria of particular curriculum unit are interpreted differently by teachers at different campuses. They argue that standardization challenges are evident despite having course coordination meetings under the supervision of a course-coordinator across multiple campuses of the ABC institute. This was evident in the expressions of one of the most experienced teachers at the ABC institute, who alarmingly stated that:

Three campuses deliver the same course...the same curriculum unit at the same time. However, standardized content is not available. So usually what happens is..., these teachers between themselves, they share the content and they collaborate, and deliver. They support each other to an extent. But, this delays the process and sometimes if the teacher is new to this subject and not really familiar with the content, he may or may not cover the full content and this might impact the students.

Therefore, all the above discussion sheds some light on the nature of collaboration concerns experienced by the teachers. These findings also indicate various kinds of collaboration concerns, and how their consequences influence teachers' adoption of the new curriculum and impacts students' learning experiences.

5.3.6 Refocusing concerns:

The findings of the currency study indicates a moderate to highly intense refocusing concerns (77%). This is on par with the relative intensities at Stage 0 (unconcern -75%) and Stage 5 (collaboration concern -76%). This demonstrates teachers' perception of the occupational relevance, adequacy and sufficiency of the new curriculum. Most of the teachers expressed their concerns about the prescriptive nature of the curriculum and internal procedures that restricts them formally revising the contents of the curriculum. According to Hord et al. (2014) and George et al. (2013), a highly intense refocusing concerns indicate users' "disconnect" with the current innovation and fostering and suggesting ideas that would work much better than the innovation. The findings from the current research also indicates some of the teachers' dissatisfaction with the new curriculum, who proposes major revision to the number of learning outcomes and performance criteria within the curriculum units.

One of the teachers, who possess a substantial amount of industry exposure in the Engineering discipline, feels that the curriculum must undergo major revisions. He stated that:

> I mean if I could rewrite the course, again I would do and I think I could make it even more
>
> industry related. But yeah I suppose if they went to an employer and with the skills and the
>
> knowledge that they learned from this particular course, I think there is a lot they could

transfer into that business. A lot of terminologies they would know probably help them in

the business.

Another teacher from the business discipline expressed her concern regarding the industry-academic divide and strongly criticized that the new curriculum lacks industry-oriented practical components. She argued that:

No. I am so sorry. So far what I have seen here this is with the utmost respect to all those

who will hear this, there is a vast gap within the industry to that of the classroom.

Everything is theory based...

On the other hand, some of the teachers feel that the curriculum development unit (CDU) is responsive to the request made in regards to the revisions and changes suggested by the teachers. However, they believe that change request to the new curriculum are listened to, but not operationalized, and cite policy challenges as a major challenge to facilitating the change. This was reflected in the words of one of the teachers, who also works in coordination with the CDU activities commented that:

This is a continuous development undertaken by the CDU specialist. They always work on

it. There are challenges when we want to make changes. Every change should go through

reviews and approvals by the regulatory authorities and awarding bodies. This is

challenging. This takes time.

A few of the teachers also expressed their worries in regards to the lack of support from the CDU specialists when it comes to suggesting curriculum changes. These teachers strongly feel that they should be considered as part of the curriculum development processes considering their industry

(functional) expertise and teaching experience. One of the teachers who delivers Engineering subjects feels that teachers' inputs are "ignored" and "under-valued" by the CDU and expressed her concerns by saying that:

> *I think if at all teachers who are delivering this course if they become...if they are allowed to be part of curriculum development, then of course the course will be a better course....we are not allowed to provide such inputs...I think it would be a good initiative if they could take inputs from the teachers...*

There a few other teachers who supported the aforementioned claim regarding the "ignoring" of inputs, however they suggested administrative mechanisms and strategies to address these challenges. One of the teachers raised her concern in regards to logistical challenges in connecting with the CDU and suggested the need for a "core academic committee" by saying that:

> *I am looking forward to using such opportunities. Many times I have tried to communicate to the CDU. Many times. So usually whenever I get the chance, meetings, you know, I used to speak about it, but usually that's what I'm saying. We in vocational are educational system, we have to have some core academic committee. This committee should be dedicated to discuss only academics.*

To summarize, all the above refocusing concerns raised by teachers indicate their level of discomfort and dissatisfaction with the new curriculum in regards to the relevancy and currency of the subject matter, organizational structural challenges, communication gaps and recognition and value perceptions and belief systems of teachers. These findings could inform the change

facilitators, CDU representations and institutional leadership and contribute to revising the existing teacher engagement model for the effective implementation of the new curriculum.

5.4 Demographic Factors and Teacher Concerns:

(To what extent does demographic characteristics of the teachers influence their concerns, and why?)

This question aims to understand the extent to which certain demographic characteristics influence teachers' views and concerns of the reformed vocational curriculum. The SoC-questionnaire captured a variety of demographic attributes of vocational teachers which included overall (total years of) teaching experience, teaching experience with the ABC institute, and overall (total years of) industry engagement. The research attempted to explore these characteristics and determine the impact of these factors on the concern levels of teachers who carried varied teaching and industry experience. Mixed methods approach was adopted to address this question, which analyzed results arising from SoCQ as well as from the qualitative interviews held with the teachers. For the purpose of analyzing demographic characteristics, teachers were categorized into two groups. In regards to total teaching experience, the first group consisted of teachers who possessed more than ten years of total teaching experience, and the second group consisted of teachers with less than years of total teaching experience. Similarly, teachers with more than five years of teaching experience with ABC institute were grouped separately to those with less than five years of experience. Finally, with regards to the third factor, teachers' industry experience, teachers with more than five years of total industry experience were grouped separately to those with less than five years of experience. Using descriptive statistics, these two groups were compared to determine the mean

and standard deviation between these two groups of teachers and the extent to which these factors influence teacher views and concerns. Table 5.8 presents the summary statistics that relates overall teaching experience to different stages of concern.

	Total_Teach_Exp	N	Mean	Std. Deviation	Std. Error Mean
S0	1	12	2.983	.9243	.2668
	2	15	2.347	1.0914	.2818
S1	1	12	4.233	.9257	.2672
	2	15	4.640	1.2811	.3308
S2	1	12	4.350	1.6866	.4869
	2	15	4.973	1.9403	.5010
S3	1	12	3.500	1.2490	.3606
	2	15	3.640	1.6479	.4255
S4	1	12	5.150	1.0274	.2966
	2	15	4.933	1.4534	.3753
S5	1	12	5.350	1.1318	.3267
	2	15	5.347	1.6775	.4331
S6	1	12	4.900	1.2721	.3672
	2	15	4.227	1.5872	.4098

Table 5. 8 Teachers' total teaching experience and individual stages of concerns

5.4.1 Overall teaching experience and concerns:

Sage 0 - Unconcern (*We are not concerned about the new curriculum, we have other priorities*)

Stage 0 is the "unconcern" stage, wherein a highly intense Stage 0 indicates that teachers are not deeply worried or concerned about the new curriculum and they have probably have shifted their focus to some other types of concerns. Teachers possessing relatively lesser teaching experience were found to have highly intense Stage 0 concerns compared to those teachers with more teaching experience. Teachers having relatively lesser years of teaching experience probably many not be concerned about the new curriculum per se.

It can be seen from the data in the Table 5.12 that that a few of the teachers who are relatively new to the teaching profession (or those who have teaching experience of less than ten years) appears

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not so concerned about the new curriculum, rather seems to be concerned more about other aspects of their job or family. Considering the demographics of teachers who participated in the research, and the fact that all of them hails from a non-UAE geography, this could also mean that, in the beginning of the term, teachers could be more concerned about factors that has less to do with the curriculum or academics and probably more concerned about their job security or familiarizing themselves with the workplace. They might be more concerned about their own personal or informational concerns. The statistical findings based on the survey responses also resonate with the teachers' response during the interview. One of the teachers who are new to the UAE and relatively new to vocational teaching expressed that her priority is not to understand the new curriculum or its overall purpose, rather to know more about the support systems and nature of learners. She felt that the support system was inadequate and states:

> *When I came here, there was only one teacher to support me, and help me. He started teaching me how to use the learning management system (LMS) and how to prepare the Training and Assessment Guide (TAG). However, unfortunately, he left in the middle of term, and I was not provided with any formal induction. I felt lost, there wasn't any orientation as such...I was more worried about the support...there is nobody who will tell you this is how you do this...this is how you should do it and...follow this TAG and nobody will say anything...so I went through so many TAGs, and finally I was confused*".

Thus, the teacher feels that she is not adequately supported to start her lessons, which shifts her priority from understanding the curriculum and more towards how to settle in as a new teacher and to start teaching the course. Another teacher who is relatively new to teaching also states that she

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was not concerned about the curriculum and more worried about the time management challenges and consequent family issues. She states:

"It was overwhelming in the beginning because I was put in the deep end. I suffered because I was new to it and by default; I was made the course-coordinator. I had to start from point zero which took longer than expected. I was not given anything. A lot of time a lot of sacrifice and patience from my husband who I had to ignore at times and take work home".

Experienced teachers who have taught more than ten years in different institutions were found to have relatively low-intense Stage 0 concerns. Since experienced teachers are expected to have a relatively higher level of exposure to educational innovation in their previous workplaces, this would also indicate that these teachers are more concerned about the new curriculum. These teachers might have invested a lot of thoughts about the curriculum contents and consequent implementation hurdles at a practice-level. This observation might have a higher level of logical significance, however this would also mean that experienced teachers are more responsive and sensitive to new educational reforms and innovations.

Stage 1 - Informational Concerns

(***We would like to know more about the new curriculum in terms of its purpose and expectations***)

From the table above, we can see that experienced teachers have slightly higher levels of informational concerns compared to their relatively lesser experienced counterparts. Informational concerns are relatively higher at the early stages of an innovation implementation, wherein the adopters, according to George et. al. (2013) "are interested about the substantive aspects of the innovation, such as its general characteristics, effects and requirements of use". At this stage,

innovation adopters are curious about the nature of the innovation, how it is different and similar to what they are doing before, the type and level of preparation they will receive, and how the innovation is supposed to work (Hord et al. 2014). Teachers having more teaching experience would have a range of informational concerns regarding the nature of the curriculum, and how different and similar is the reformed UAE national curriculum from the UK and Australian model, familiar for most of the vocational teachers in the ABC institute. Since highly experienced teachers are exposed to prior educational innovation and consequent challenges they would probably have more concerns in regards to the endorsement of the curriculum and how it is supposed to be implemented. These concerns are reflected in the words of one of the most experienced teachers. He states:

> *"See, I come from the industry with a lot of experience both in production and training. To be frank, this term again I was given different subject. There is an incomplete course book. When I opened the course book, there were some elements missing. One of the elements discussed different types of hazards. There were details of different types of hazards mentioned in the course book. But, the main hazard is missing from the hand book!. Now I need to review and prepare for my sessions".*

Another teacher, who was assigned the role of a course coordinator (CoCo) considering her teaching experience and exposure to various industries raised similar concerns during the interview. She stated:

> *Now being the CoCo was overwhelming in itself, not knowing what was there because there was nothing available. I had to start from scratch. There was a*

Training and Assessment Guide (TAG), which was shared with me. This has become

really outdated and I think it was a "copy and paste" from some other publications.

Thus, experienced teachers feel that they are short of adequate support resources to facilitate the change effort by implementing the new vocational curriculum. A highly intense informational concerns could be mainly due to the lack of teaching resources, absence of relevant, appropriate and authentic information to implement the new curriculum, and unrealistic workload distribution that refrain them from embracing the changes.

Stage 2 - Personal Concerns (Are we competent or skilled to deliver this curriculum? Will this affect our role as teachers?)

As can be seen from the table (above), experienced teachers appears to have relatively higher personal concerns than their less experienced colleagues. According to George et al (2013), a Stage 2 concern would mean "the adopter is analyzing his or her relationship with the reward structure of the organization, determining his or her part in decision making, and considering potential conflicts with existing structures or personal commitments". A more pertinent concern question raised at this stage would be - How will the new curriculum affect me as a person? Highly experienced teachers might be concerned about their level of authority to exercise their knowledge gained from their previous employment opportunities. This is reflected in the statement of one of the experienced teachers when she said:

Our hands are tied I am sorry. This only I got to realise, I mean there is a lot of

manipulation in being creative and innovative I can do within the vocational de-

foundation setting.

On a similar note, another teacher commented:

> *Just I learned from my previous job. Sometimes I have to work under pressure. In addition, this makes me quite tolerant to any pressure put on me.*

Thus from these discourses, it could be inferred that teachers have highly intense personal concerns and particularly with the experienced teachers, probably because they compare it with their previous job roles and workplace environment.

Stage 3 - Management Concerns (**We seem to be spending all our time getting materials ready**)

It is apparent from the table that all teachers, irrespective of their teaching experience, share the same level of management concerns when they are in the starting phase of a curriculum implementation initiative. Management concerns when the teachers are ready to start using the curriculum in their classroom. This is where the curriculum is getting ready to be operationalized. At this stage, according to George et al (2013), "the individual focuses on the processes and tasks of using the innovation and resources". Also at this stage, would be worries about operational aspects related to the management of time. This is reflected in the teachers' voice. One of the teachers state:

> *Here every teacher is packed with a lot of work, time is an issue. Everyone is packed with their own delivery schedule. So once the program starts, it is very hard to even see others...all of us are busy...Time is a constraint...it is difficult...*

Some of the teachers raised their concerns regarding the implementation processes and who poorly designed processes pose time management challenges. This is reflected in one of the teachers' comments. She stated:

> *Not enough time, not many resources, no proper structure even though the unit might have been delivered before. Sometimes, there is no proper archives about the resources, very less time to communicate with other people, and facilitate the knowledge sharing process.*

From all these above expressions above, it could be interpreted that teachers are facing operational challenges with regards to the implementation of the curriculum and, in most cases, cite workload distribution and lack of proper support as key reasons for the same.

Stage 4 - Consequence Concerns (We are concerned about students' perception of this curriculum. What is their experience? Are they benefitting from this curriculum?)

What is interesting in this date from the above table is the higher intensity of concerns expressed by less experienced teachers against their experienced colleagues. A highly intense stage 4 concern would mean that the teacher focuses on the innovation's impact on students in his or her immediate sphere of influence (George et al. 2013). A relatively lesser intensity of consequence concerns for experienced teachers may be because of their proportional exposure to academia and familiarity with classroom management and learner engagement techniques. A more experienced teacher is probably in a better position to capture the impacts of any educational innovation compared to a less experienced teacher. The current research also found that across both groups of teachers, one

of the common impact concerns was related to challenges arising from the English language proficiency of the learners. This is reflected in one of the teachers' expressions. He stated:

> *It was very challenging, and still it is challenging because most of the students at the entry-level do not understand English and I really have had tough times because they don't understand what I am trying to say...so, how would I expect them to listen to my instructions and execute the task requirements?*

Some of the teachers are also concerned about the content of the curriculum, particularly the currency and appropriateness of certain learning and assessment components, and how they would impact the students. This was evident with one of the teachers who stated:

> *I think it is not sufficient, it is not adequate, may be it is in the wrong place, and may be it is in the wrong stage. The students may suffer.*

One of the teachers who started implementing the reformed the curriculum states as follows:

> *Right now, after teaching them the first stage Diploma, I have found students some of the students are still confused.*

From all the expressions above it is clear that irrespective of the experience factor, teachers have serious concerns about how the new vocational curriculum would affect the students' learning experience.

Stage 5 - Collaboration Concerns (We are concerned about how other teachers in other campuses are using this curriculum.)

According to Hord et al. (2014), a highly intense collaboration concern would mean that the adopter is concerned about collaborating with others to improve the outcome of an innovation. The table above indicates that, interestingly, both groups of teachers share the same level of collaboration concerns, which means that all the teachers within the context of this research, teachers are concerned about relating what they are doing with what others are doing in their own and other campuses (Hord et al. 2014). These concerns are reflected in the expression of a number of teachers; however, they find it challenging to collaborate due to lack of time and facilitation mechanisms. One of the teachers who are interested in facilitating standardization of the curriculum delivery across campuses stated:

> *We do not have sufficient time to collaborate. Definitely not enough. The only time I spoke to a teacher from the other campus was during the course coordination meeting. Therefore, I have been emailing him and talk to him about the assessments and that is all I could do. Not really enough.*

Some of the teachers experienced highly intense collaboration concerns and expressed the lack of management mechanisms to facilitate collaboration meetings with teachers from across the institution. One of the teachers worried that:

> *Here I never got an opportunity to participate in curriculum development meetings. I am looking forward to using such opportunities. Many times, I have tried to communicate to the CDU. Many times!*

These concerns share the worries and feelings of teachers who are motivated to make positive collaboration, however are held back due to poor coordination processes.

Stage 6 - Refocusing Concerns (We are not completely happy about this curriculum. We have some ideas about something that would work even better).

The results as shown in the above table indicate that teachers who are less experienced have highly intense refocusing concerns compared to their experienced colleagues. According to Gorge et al. (2013), a highly intense refocusing concern indicates that the adopter considers the possibility of making major changes to the innovation, and in exceptional circumstances, replacing the innovation with a more powerful alternative. Teachers who possess relatively less teaching experience and a highly level of vocational (industry) exposure may feel that the reformed curriculum is not aligned with the occupational requirements of the UAE. The teachers who carries a vast amount of industry experience feel that the curriculum requires a major modification or replacement. One of the teachers who is relatively new to vocational teaching but having vast amount of industry experience commented that:

> *No. I am so sorry. So far what I have seen here this is with the utmost respect to all those who will hear this, there is a vast gap within the industry to that of the classroom. Everything with this new curriculum is theory based, and there are no skills for life functions...*

One of the teachers feel that the curriculum contents are not aligned with the occupational competency requirements of the UAE and stated that:

> *I mean if I could rewrite the course, again I would do and I think I could make it even more industry related.*

These comments reflect teachers' refocusing concerns especially from teachers who possess a considerable amount of industry experience.

5.4.2 Teaching Experience and Concerns

Group Statistics

	Current_Teach_Exp	N	Mean	Std. Deviation	Std. Error Mean
S0	1	14	2.729	.9466	.2530
	2	13	2.523	1.1847	.3286
S1	1	14	4.457	1.0120	.2705
	2	13	4.462	1.2971	.3598
S2	1	14	4.429	1.8294	.4889
	2	13	4.985	1.8484	.5126
S3	1	14	3.643	1.3971	.37⁻
	2	13	3.508	1.5761	.4371
S4	1	14	4.914	1.4501	.3876
	2	13	5.154	1.0713	.2971
S5	1	14	5.371	1.4247	.3808
	2	13	5.323	1.5023	.4167
S6	1	14	4.814	1.5241	.4073
	2	13	4.215	1.3987	.3879

Table 5. 9 Teachers' Current Teaching Experience and Stages of Concerns

Table 5.9 illustrates the summary statistics of teachers' current teaching experience with the ABC institute and concern levels at individual stages of concerns. Teachers are grouped into two - one group of teachers with up to ten years of teaching experience with the ABC institute, and the other group having more than ten years. On an overall, there is not much of a difference in the concern levels of teachers except with Stage 0 (Unconcern), Stage 2 (Personal Concern), and Stage 6 (Refocusing Concern). Most of the teachers appears to have the same level of concerns for Stage 1 (Informational Concern), Stage 3 (Management Concern), Stage 4 (Consequence Concerns) and Stage 5 (Collaboration Concerns).

Stage 0 - Unconcern

The above table indicates that teachers who are relatively new to the ABC institute are less concerned about the newly reformed curriculum compared to their experienced colleagues. This could probably be because of the lack of communication between the institution leadership and vocational teachers resulting in failure to create awareness about the new curriculum and its implementation expectations. Some of the new teachers who participated in the research mentioned that the new curriculum or its implementation did not even bother them, as they were more concerned about their new job and other personal issues. One of the new teachers stated that a heavy workload comprising of teaching and administrative responsibilities made her feel uncomfortable and that shifted her priorities. A few of the new teachers stated that they were assigned administrative tasks in addition to the teaching job, which drifted their focus from thinking about the new curriculum initiatives. One of the teachers who commented about the lack of orientation stated that:

> *Actually there is no proper orientation, so I sometimes, I felt lost, there wasn't any orientation as such...I am not sure about the purpose of the curriculum and the learning outcomes. Because there are multiple versions of the curriculum document and nobody is sure about the current version.*

Stage 2 - Personal Concerns

As can be seen from the Table 5.2, interestingly, teachers are more experienced with teaching with ABC institute appears to have higher levels of personal concerns, compared to their colleagues. This could be because of the demands posed by the new curriculum reforms and might have perceived as a challenger or a threat to their job as seen by experienced teachers. One of the other reasons for experienced teachers to have a higher level of personal concerns is due to the declining number of students and the introduction of new qualifications. During the interview, a number of teachers expressed their worries in regards to job guarantee citing a considerable drop in the number of students and the introduction of new qualifications, which they are familiar with. Teachers feel that there should be adequate professional development and upskilling activities to retain their roles and ensure readiness to teach newly introduced qualifications.

Stage 6 - Refocusing Concerns

The above Table 5.2 also indicates that teachers who are new to ABC institute and who are less experienced have higher levels of refocusing concerns compared to their experienced colleagues. This could be because, even though they have less experience with the ABC institute, they might possess considerable level of industry experience and familiarity with the newly introduced curriculum domains.

5.4.3 Industry Exposure and Teacher Concerns

Group Statistics					
	Industry_Exp	N	Mean	Std. Deviation	Std. Error Mean
S0	1	14	2.357	1.0559	.2822
	2	13	2.923	1.0051	.2788
S1	1	14	4.643	1.1772	.3146
	2	13	4.262	1.0997	.305
S2	1	14	5.000	1.9752	.5279
	2	13	4.369	1.6630	.4612
S3	1	14	3.929	1.2566	.3358
	2	13	3.200	1.6125	.4472
S4	1	14	5.586	1.1272	.3013
	2	13	4.431	1.1543	.3201
S5	1	14	5.600	1.3678	.3655
	2	13	5.077	1.5089	.4185
S6	1	14	5.071	1.4199	.3795
	2	13	3.938	1.3301	.3689

Table 5. 10 Teachers' Industry Exposure and Stages of Concerns

The above Table 5.10 is quite revealing in several ways. Overall, it shows that teachers with more industry exposure possess fewer concerns across all stages from Stage 0 to Stage 6. This also highlights the significance of industry experience of vocational teachers and its influence in the implementation of educational innovations. Teachers having relatively less industry exposure have high levels of self, task and impact concerns compared to their colleagues with more industry exposure and occupational competency. For instance, informational or personal concerns are less for occupationally competent and industry exposed teachers, probably because of the experience to deal with challenges, which they have garnered from the dynamics of the workplaces they have engaged with. Teachers having industry exposure in comparison with those with little industry experience relatively deal with management concerns, where the adopters are more worried about the time management issues, effectively.

5.5 Teachers Concerns and their inter-relationships

Correlations

		S0	S1	S2	S3	S4	S5	S6
S0	Pearson Correlation	1	-.014	.166	.509**	.152	-.037	.251
	Sig. (2-tailed)		.943	.408	.007	.449	.856	.206
	N	27	27	27	27	27	27	27
S1	Pearson Correlation	-.014	1	.761**	.386*	.419*	.696**	.435*
	Sig. (2-tailed)	.943		.000	.046	.029	.000	.024
	N	27	27	27	27	27	27	27
S2	Pearson Correlation	.166	.761**	1	.493**	.555**	.703**	.563**
	Sig. (2-tailed)	.408	.000		.009	.003	.000	.002
	N	27	27	27	27	27	27	2̲
S3	Pearson Correlation	.509**	.386*	.493**	1	.354	.241	.439*
	Sig. (2-tailed)	.007	.046	.009		.070	.227	.022
	N	27	27	27	27	27	27	27
S4	Pearson Correlation	.152	.419*	.555**	.354	1	.281	.688**
	Sig. (2-tailed)	.449	.029	.003	.070		.156	.000
	N	27	27	27	27	27	27	27
S5	Pearson Correlation	-.037	.696**	.703**	.241	.281	1	.527**
	Sig. (2-tailed)	.856	.000	.000	.227	.156		.005
	N	27	27	27	27	27	27	27
S6	Pearson Correlation	.251	.435*	.563**	.439*	.688**	.527**	1
	Sig. (2-tailed)	.206	.024	.002	.022	.000	.005	
	N	27	27	27	27	27	27	27

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 5. 11 Correlation between Teachers' Stages of Concerns

Correlation is a statistical technique that can demonstrate whether and how strongly pairs of variables are related. The data presented in Table 5.11 identifies the correlation between different concern stages, and the correlation coefficient value indicates that there are both negative and positive correlation between these stages. However, having a high or low correlation does not mean that there is causation, which means that a high intensity in one concern stage does not cause a proportional increase of intensity of another stage. However, a positive correlation for instance between two stages indicates that changes in one concern stage may introduce associated changes

in other concern stage. This does not mean that the changes in one concern stage causes a change in another concern stage.

It should also be noted that these concern-stages are not mutually exclusive. This means, at one point of time during the implementation of the innovation, an adopter would have different categories of concerns at varying degrees. For instance, during the early stages of a curriculum innovation and implementation effort, an adopter may experience highly intense informational concerns, relatively lower personal concerns and very low consequence concerns and little or no collaboration and refocusing concerns.

Table 5.3 indicates that there is a relationship between Stage 0 (Unconcern) and Stage 2 (Personal Concerns), Stage 3 (Management Concerns), Stage 4 (Consequence Concerns) and Stage 6 (Refocusing Concerns). Interestingly the data shows that there is a high correlation between Stage 0 (Unconcern) and Stage 3 (Management Concerns). It could be assumed that at the unconcern stage, the teachers are not concerned about the new curriculum per se as they are assigned or overloaded with additional administrative responsibilities which consumes their time, which raises management concerns. It could also be interpreted that managing teachers' work schedule effectively would enable them to focus on educational reforms such as curriculum innovation. Within the context of this research, teachers are not concerned about the newly reformed curriculum, probably because of assigning too many non-academic tasks and additional responsibilities, making the innovation implementation challenging, leaving gaps in practice. This is detrimental to the implementation of any educational innovation and change facilitators should consider these findings to reduce the implementation gaps in the future. Most of the teachers throughout the interview raised a variety of concerns regarding the lack of time. Most of the

teachers have reported that lack of time has prevented them from preparing for the new curriculum, developing support resources, and collaborating with their colleagues at campus and institutional level.

A high correlation between Stage 1 (Informational Concern) and Stage 2 (Personal Concerns) and Stage 5 (Collaboration) are again worth discussing. It should be noted that teaching a new topic includes a variety of processes and teachers go through a number of preparation phases as they engage in the implementation of the curriculum. Therefore, a higher level of informational concerns would also contribute to higher levels of personal and collaboration concerns.

The data presented in Table 5.3 also reveals that there is a high correlation between Stage 1 (Informational Concerns) and Stage 2 (Personal Concerns) and Stage 5 (Collaboration Concerns). Teachers, who are more curious about the new curriculum and worried about the lack of appropriate resources to adopt the new curriculum, also might develop personal concerns particularly about their capabilities in teaching the curriculum. As one of the new teachers pointed out, the lack of a relevant TAG (informational concern), caused her to worry about her personal abilities to teach the new unit. Moreover, this teacher was worried about how other teachers in other campuses of the ABC institute (collaboration concerns) can support her with identifying the right teaching resources and classroom support materials.

The research also indicates a strong correlation between Stage 2 (Personal Concerns) and Stage 5 (Collaboration Concerns). This means that teachers having highly intense personal concerns probably might have a highly intense collaboration concerns. The responses from the teachers and further analysis are found to support this relationship. Teachers who were worried about their own status or how the new curriculum affects them were also concerned about making associations with their colleagues teaching the same course in another campus. These teachers felt that there are not

enough meetings or collaboration opportunities to discuss their issues and challenges in adopting the new curriculum.

Further, the data from the table also reveals a strong correlation between Stage 4 (Consequence Concerns) and Stage 6 (Refocusing Concerns). Teachers who were worried about how the new curriculum would affect their students' learning experience would naturally be worried about the relevance and appropriateness of the subject matter of the content of the curriculum. This is reflected in the words of many teachers who felt that some of the new curriculum units lacked currency and contextual relevance and highlighted their fears of the impact of the same on students' understanding and alignment with the workplace requirements. One of the teachers highlighted the gap within the curriculum unit and raised his concern in regards how these limitations are detrimental to students' learning. He stated that:

> *The curriculum unit is specific to standards and regulations of Abu Dhabi. However, we need to realize the fact that this is a national qualification (Level IV or Level V Diploma) and not limited to Abu Dhabi regulations. Students learning this course should be able to work across the Emirates. So, this is a UAE open certificate. Students upon completion should be able to work anywhere, Abu Dhabi or Fujairah. So, they need to know all requirements not only about Abu Dhabi, but also relating to other emirates. So, there should be a unified structure, which has to be tailored from the different requirements.*

Finally, the data table shows that there is a correlation between Stage 5 (Collaboration Concerns) and Stage 6 (Refocusing Concerns). This could be interpreted that teachers possessing intense collaboration concerns probably may also experience refocusing concerns.

All the above discussions indicate a level of relationship between the concerns and to a substantial extent; this is also evident in the responses of the teachers. Considering the developmental

conceptual of the CBAM framework and its non-mutual exclusivity, teachers are expected to have multiple concerns at various levels during the adoption lifecycle. Moreover, it is obvious that these concerns influence each other as they are related even though they are distinct in terms of its characteristics.

The next chapter is the final chapter that discusses the findings of the research in more detail in line with the body of literature reviewed and the mapping with the theoretical framework. The final chapter includes appropriate recommendations, conclusions, and the limitations of the research.

Chapter Six: Discussions, Conclusion and Recommendation

6.1 Introduction

This chapter summarizes the research findings and its contribution to the existing body of literature. In addition, the chapter highlights the implications of the findings to relevant policies and practices pertaining to the VET sector. Finally, this section discusses the key limitations of this research and advances a set of recommendations, and suggests opportunities for further research.

The purpose of this research was to investigate the views and concerns of vocational teachers in response to their adoption of the newly reformed Q+NOSS-based curriculum in the UAE. The research explored at greater lengths, the emotional and behavioral aspects of vocational teachers, as they were one of the first teachers to adopt and implement the Q+NOSS-based curriculum in the region. The aims and objectives of the research were further translated to formulate the main research question:

What are teachers' views and concerns about the reformed VET curriculum in regards to its development, level of engagement, adoption processes and enactment in the classroom?

The following sub-questions were formulated to address the main research questions:

(1) What is the reformed VET curriculum?

(2) What are teachers' concerns and the extent to which they influence the adoption of the reformed curriculum?

(3) To what extent do demographic characteristics of the teachers influence their concerns, and why?

(4) To what extent does concerns influence each other?

(5) To what extent is the curriculum implementation congruent with those mandated by the regulatory body and why?

The theories pertaining to teacher concerns and the CBAM framework and its diagnostic tools - the SoC and the LoU, informed the research. One of the critical reasons for adopting the CBAM framework as a theoretical base for this research is its acceptance and prominence in educational research focusing teacher concerns. A mixed methods approach was adopted to capture the views and concerns of the vocational teachers, which included semi-structured interviews, questionnaire-based surveys and document analysis. The above-mentioned research questions were reviewed and examined against each of the research findings. The following sections provide detailed discussions related to each research question.

6.2 Summary of Research findings

6.2.1 Discussions of Results of Research Question 1

The researcher first examined and interpreted the reformed Q+NOSS-based curriculum, represented by a range of qualification documents pertaining to units offered at various levels of the qualification framework. The research found that the Q+NOSS-based curriculum is an integrated model, which integrates both the intended and taught curriculum components. Throughout the findings of this research, the analysis of the documents identified a range of discrepancies between the intended and taught components of the Q+NOSS-based curriculum. The research found that these discrepancies are a result of issues and challenges encountered by teachers, as they adopt and implement the curriculum. In regards to the adoption, the research found that the teachers at the ABC institute have certain reservation in the adoption of the Q+NOSS-based curriculum, particularly with the taught curriculum, or the "contextualized"

version used by the teachers to support their classroom delivery. Most of the ABC teachers reported to have different interpretations of the same Q+NOSS, which is an inherent trait with majority of the top-down educational reforms (Vilensky and Fraser 1977, Heikkinen 1997). Within the ABC context, these ambiguities resulted in the creation of multiple versions of the TAG for the same Q+NOSS at different campuses developed by teachers serving at different terms of the academic year. These "discrepancies and incongruencies" (Vilensky and Fraser 1977) requires to be carefully analyzed in order to formulate effective intervention strategies to streamline the implementation. There could be a range of factors that contribute to the discrepancies. One of the key reasons for this gap, as cited by a number of studies is the level of teacher engagement and involvement in the curriculum development process (Skilbeck 1984, Billet 2011, Finlay et. al. 1998, Heikkinen 1997, Wolf 2011, Cornford 1999, Winning 2000, Wheelan & Carter 2001, Anon 2014, Broad 2016, Fullan 2016). This could also because of the disconnect between the teachers and the industry dynamics. Heikkinen (1997) acknowledges this gap in his study, and recommends the development of a "coherent long-term policy" promoting teachers and "defining themselves in relation to the work life". As Anon (2014) and Broad (2016) recommend, vocational teachers should be provided with effective professional development trainings to refresh and update their vocational, occupational knowledge and utilize it to provide a more effective and relevant learning experience for students.

6.2.2 Discussions of Results of Research Question 2

Subsequently the researcher analyzed various usage levels of teachers as they engage in the process of implementing the Q+NOSS-based curriculum. This was accomplished by interviewing ABC teachers and analyzing their behavioral characteristics while they engage in the process of adopting

the Q+NOSS-based curriculum. Using the Levels of Use (LoU) diagnostic construct of the CBAM framework, the researcher delineated the behavioral aspects of the teachers as they started "using" or teaching the Q+NOSS-based curriculum. The research found that majority of the ABC teachers are at Level III mechanical use. This means that majority of ABC teachers have started teaching the qualification units assigned to them by "mechanically" following the plan identified in the TAG, without making any considerable revisions to taught curriculum or the subject matter. This would indicate that the ABC teachers are currently at the "implementation" phase of the Triple I (initiation, implementation, and institutionalization) model as suggested by Fullan (2015). The research reported a variety of operational challenges encountered by the ABC teachers as they adopt the new Q+NOSS-based curriculum. These challenges relate to informational, personal, logistical and collaborative aspects, restricting the teachers to explore the curriculum at a greater depth beyond the mechanical usage level.

6.2.3 Discussions of Results of Research Question 3

Further to exploring ABC teachers' usage levels of the Q+NOSS-based curriculum, the researcher investigated the nature of teacher concerns and the extent to which they influence the adoption process. Building on the tenets of the SoC diagnostic construct of the CBAM framework, the researcher adopted a mixed methods strategy (using surveys and semi-structured interviews) to capture the views and stages of concerns of ABC teachers. The research found that the teachers at the ABC institute experience highly intense self-concerns, intense impact concerns and moderately intense management concerns. The researcher also identified factors influencing these various concerns. The influencing factors are critical in developing an intervention system for the effective adoption of the curriculum. The communication of the key purposes of the qualification framework

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and Q+NOSS curriculum to the teachers, facilitating curriculum orientation sessions for teachers, standardizing curriculum documents, support for teachers from the curriculum development team, maintaining reliable and current teaching support resources, implementing fair and balanced workload distribution, facilitating continuous professional development, all these influenced teachers concerns in regards to the adoption process.

The research also found that ABC teachers have high level of informational concerns, indicating obstacles and challenges in obtaining relevant and adequate information regarding the curriculum. These findings resonate with the outcomes of a number of CBAM studies, which highlight high level of informational concerns among teachers (Jongmans et. al. 1998, Donovan et. al. 2007, Rakes & Dunn 2015, Jong 2015, Vocht et. al. 2017). These findings also highlight the significance of facilitating awareness sessions and professional development initiatives for teachers to have a clear understanding of the curriculum objectives, accessibility and other related aspects. In addition, the quality of support resources and systematic management of course contents should be considered key to effective implementation of any educational innovations.

6.2.4 Discussions of Results of Research Question 4

Upon exploring the various stages of concerns experienced by ABC teachers, the research further drilled down to individually analyze the concerns to investigate whether to what extent they are influenced by demographic factors such as a teachers' academic experience, employment period, and industry exposure. The research found that ABC teachers possessing prolonged academic (teaching) experience exhibited highly intense informational and personal concerns compared to their less experienced colleagues. At the same time, the research found that all ABC teachers, irrespective of their overall academic (teaching) experience, share the same intensity of

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management (related to time and logistics) and collaboration (with peers from the same or other campuses) concerns. Interestingly, the research also found that ABC teachers who are relatively less experienced have more consequence (about how the curriculum influences their students) and refocusing concerns (making significant changes to the curriculum) compared to their academically experienced colleagues. The research also found that teachers who are employed with ABC institute for a considerable period of time exhibit highly intense concerns to the launch of the Q+NOSS-based curriculum compared to their newly joined counterparts. These new joiners also exhibited a high level of refocusing concerns, indicating their dissatisfaction with the subject matter of the new Q+NOSS-based curriculum. More interestingly, the research also found that long-term ABC teachers demonstrated highly intense personal concerns. Finally and more significantly, it was found that teachers who possess substantial amount of industry exposure exhibited less concerns at all stages compared to teachers with relatively lesser industry exposure.

6.2.5 Discussions of Results of Research Question 5

Finally, the research investigated the relationship between the concerns exhibited by the ABC teachers as they adopt the Q+NOSS-based curriculum. The research discerned the intensity levels of each concerns at various stages and analyzed whether a change in once type of concern influence the other. The research found that there is a high correlation between Stage 0 (Unconcern) and Stage 3 (Management Concerns). In addition, another high correlation exists between Stage 1 (Informational Concern) and Stage 2 (Personal Concerns) and Stage 5 (Collaboration). Similarly, the research found a strong correlation between Stage 1 (Informational Concerns) and Stage 2 (Personal Concerns) and Stage 5 (Collaboration Concerns). This strong correlation trend is also

evident between Stage 2 (Personal Concerns) and Stage 5 (Collaboration Concerns), and between Stage 4 (Consequence Concerns) and Stage 6 (Refocusing Concerns).

6.3 Implication of findings to policy and practice

There has been very little or no research studies focusing the VET sector at large and vocational curriculum in particular within the UAE context. Therefore, the results from this research are critically significant to the UAE's VET regulators and policy makers, training providers, awarding bodies, human capital development agencies, community representatives and the learners. There are multiple benefits to this research. Primarily, the nature and amount of knowledge about teachers' views and concerns would inform the regulatory authorities about the challenges involved in the adoption and implementation of educational innovations, particularly reformed curriculum initiatives. Regulatory authorities, awarding bodies and other funding agencies could formulate appropriate policies to enhance the development, adoption and implementation of new curriculum, which is a more dynamic activity, considering the fluctuating industry trends and ever-demanding occupational skills. Regulatory authorities and policy makers would be able to better understand the emotional and behavioral challenges faced by teachers while they are engaged in the implementation process. Secondly, policymakers at large and institutional leadership and change facilitators in particular, may use the findings and recommendations from this research to develop appropriate intervention strategies and contextualized professional development programs for

existing and potential vocational teachers. Thirdly, the research findings and recommendations would help vocational teachers adopt appropriate strategies to enhance the adoption process and implement curriculum more effectively.

The implications of this research may contribute to or influence multiple stakeholders and diverse entities, who are directly or indirectly related to the VET sector. National qualification development and regulatory authorities, the VETAC representatives, VET policy makers, awarding bodies, curriculum development committees, and sector skills committees may find valid information brought out by this research.

Policy makers with the NQA and awarding bodies could draw helpful information from this research by gathering deeper insights on how vocational teachers responds to curriculum innovation and subsequent adoption challenges. Relatedly, regulatory authorities could draw from this research and think about furthering studies on vocational curriculum in regards to its developmental aspects, implementation and institutionalization. The information drawn from this research could also be subjected to in-depth analysis for devising and implementing proactive measures to reduce operational challenges that occur during the adoption process. The qualification development models currently adopted by the regulatory authorities could be revisited, relatively more frequently, to consider teachers' view of the curriculum, as informed by this research. For instance, more frequent review cycles could be considered as part of the curriculum review policies and procedures to accommodate the latest industry trends and best practices.

Policy makers at NQA could consider the formulation of policies and procedures that guide the development of vocational curriculum. The findings from the current research indicates the lack of a standardized approach adopted by training providers in regards to curriculum development, adoption, implementation and institutionalization. NQA, on their website underlines their approach

to vocational curriculum by stating that they do "*not develop curriculum for a course or program, tell providers how to deliver education and training or conduct assessment, or stipulate the discipline of the qualification to be issued*" (NQA 2018). However, policy makers at NQA could draw from the views and concerns of vocational teachers and formulate a policy that acts as a general guidance on not only the development, but also governing the implementation of a vocational curriculum.

Multiple awarding bodies to strengthen their communication between themselves and exchange information gathered from verification and validation activities to contribute to policy development. Awarding bodies such as ACTVET and KHDA could benefit from this research by extending their verification and validation processes to include a mechanism to capture the state-of-affairs of vocational teachers, assessors, internal verifiers and practitioners to understand operational obstacles in adopting reformed curriculum offerings.

MOHRE (Ministry of Human Resource and Emiratization) has introduced a job-classification system. Has this being considered included as a basis for the development of national vocational qualification? This needs to be identified and seriously analyzed considering the strong links between the market trends, occupational skills requirements, and what is been offered currently by the vocational education providers.

6.4 Limitations of this research

This research adopted the CBAM framework to explore the views and concerns of twenty-eight teachers at the ABC institute. Obviously, this research must be replicated with more vocational teachers from various institutions to contribute to empirical generalizability of the research results. Furthermore, this research adopted a mixed methods approach to investigating concerns, which

guided the data collection process, and consumed a considerable amount of time and effort. The convergent parallel mixed methods design adopted by the research was in response to the practical constraints imposed by certain administrative procedures encountered as part of restrictions associated with gaining access to the site and reaching participants. This research focused on one of the first vocational institutes in the region and its three campuses, making generalization claims relatively challenging. One of the key limitations in this research is the exclusion of two critical stakeholders – the learners and the curriculum developers, inclusion of them would have contributed to a deeper understanding of the process of implementing the new curriculum. There are also limitations in regards to the adoption of a conceptual framework that explores the views and concerns of vocational educators while they are engaged in the process of implementing any educational innovation. The deficiency with the existing conceptual framework lies in the fact that they are drawn from theories formulated to enculturate school-related innovations. Considering the nature of the vocational education system and its affiliation with the occupational world of work, an integrated and a contextually aligned conceptual model would have added additional insights towards understanding the phenomena.

6.5 Recommendations

It is highly recommended that vocational teachers' views and concerns in response to educational innovations are carefully and seriously considered and measured in order to reduce the policy-to-practice gaps that is inherent and evident with the implementation of majority of educational innovations. For further research, it is highly recommended to carry out extensive investigation of various factors that influence teachers' views and concerns at every stage of an implementation

lifecycle. Also, it would be highly effective to consider teachers' involvement and constructive contribution towards any educational innovation right from the beginning of the developmental model. This would reduce the communication gap between the proponents of the innovation and the practitioners. However, this was not the circumstance when the research was undertaken. Teachers were not formally invited to engage with the curriculum development initiatives. Majority of the teachers who participated in the research felt under-valued which is clearly reflected in their responses recorded as part of the research discussed in the previous chapter. The reformed vocational curriculum and its implementation remained a challenge for most of the teachers, and they cited a number of reasons for the same. Another significant recommendation is in regards to teachers' professional development and upskilling. Policy makers should consider dedicated stipulations to ensure continuous enhancement of teacher competencies and skills in line with the latest occupational requirements and market demands. This would equip vocational educators to equip themselves with multiple competencies to ensure not only seamless provisioning of academic services but also guaranteeing their job. It would be highly beneficial to explore a bit deeper into the concerns of vocational teachers at a root-cause-analysis level to identify the critical factors that forms the basis of their concerns, other than the academic or innovation-specific implications. An attempt to explore the socio-cultural, political, economic factors and challenges that are faced by the educators would provide more insights into the concerns and behavior of teachers.

Considering the intensity of concerns of ABC teachers, it is highly recommended for the institutional leadership at large and the change facilitators in particular, to consider the following suggested interventions (George et al. 2013, Hord et al. 2014) that might be useful for the institutionalization of the innovation.

The research found that a majority of the ABC teachers are not concerned about the curriculum as they are tasked with multiple responsibilities, shifting their prime focus from effectively adopting the Q+NOSS-based curriculum. The research recommends that necessary steps should be taken to engage teachers in discussions and decisions about the curriculum development process and its implementation. Furthermore, ABC institute must ensure that teachers are provided with adequate information about the curriculum so as to arouse their interest. This includes facilitating open discussions that encourage teachers to raise and clarify their queries regarding the curriculum. Newly joined teachers should be encouraged to interact with existing experienced ABC teachers who are familiar with the UAE context and ABC's approach to curriculum implementation. ABC institute should consider facilitating mentorship and thereby sharing historical information about the various aspects of curriculum implementation. Change facilitators at the ABC institute could possibly standardize processes to streamline the communication across ABC campuses. This would prevent teachers from sharing inaccurate and incomplete information regarding curriculum implementation decisions.

Considering the vast majority of ABC teachers with high informational concerns, this research maintains that this indicates the deficiency of a standardized information management system. This research recommends ABC institute to adopt information systems that could provide accurate information about the Q+NOSS-based curriculum for each discipline corresponding to their levels. Furthermore, scheduled orientation sessions and workshops should be facilitated to consistently inform teachers about the purpose or modifications to the developmental aspects of the qualification. ABC institute must ensure that Course-Coordination meetings are conducted more consistently to encourage wider consultation and promote teacher engagement across campuses. Professional development support at periodic intervals are to be provided to teachers so that they

become familiarized with the latest trends in the industry, occupational competency requirements, and other demands placed by major educational innovations.

Highly intense personal concerns of ABC teachers indicate their doubts about their own capabilities and professional status in regards to the implementation of the Q+NOSS-based curriculum. Teacher should be provided with collaboration opportunities that would encourage them to discuss and mitigate the intensity of their personal concerns, feelings and anxieties. In addition to that, policies and procedures should be introduced to enhance the opportunities for teachers to interact with subject-matter experts and institutional leadership representatives to report their concerns about their own competencies or skills-gap challenges. As mentioned earlier, professional development approaches would reduce the competency-gap of teachers who are assigned to teach newly introduced qualifications which require additional competencies and training, which they have not previously acquired.

ABC teachers were reported to have moderate to highly intense management concerns indicating lack of time and logistical challenges regarding the adoption of innovation. This research recommends the adoption of best practices in regards to the management of teachers' workload distribution that would provide them with sufficient time and creative space to successfully implement the curriculum.

ABC institute may draw from the following practices for effective change facilitation recommended by Hall et al. (2014). ABC institute may adopt these practices to inform their intervention strategies.

6.5.1 Continuous Communication:

In order to ensure common understanding of the innovation among teachers, it is highly recommended for CFs at the ABC institute to build communication systems that enable ongoing exchange of information. These systems could include formal and informal features, so that teachers would resolve any misunderstandings about the innovation by discussing about it.

6.5.2 Shared Responsibility:

It is critical for CFs to induce a sense of responsibility among teachers. Roles and responsibilities should be identified and defined for each teachers so that they take responsibility of their assignments.

6.5.3 Common Vision:

Encouraging teachers to work towards a common goal would increase the chance of effective adoption of the innovation. For this to happen, CFs must ensure that each teacher is clear about the objectives and directions underpinning the innovation adoption.

6.5.4 Openness to Change:

CFs must introduce good ways of dealing with differences, conflicts and changes to plans and models that are part of the adoption processes. Awareness campaigns could be introduced to emphasize the significance of continuous review and improvement of plans. This could be achieved through informal conversations and regularly scheduled team discussions. Teachers should be educated about the agile development and adaptability practices.

6.5.5 Focus:

CFs should include awareness campaigns and activities that continuously remind participating teachers about the overall objectives of the innovation. Teachers should be motivated and

encouraged towards achieving a common goal even though they are assigned to take responsibility of distinct but related functions.

6.5.6 Collegiality:

CFs must ensure that there is a greater level of cooperation among teachers who are engaged in the adoption process. CFs may also suggest the consideration of policy revision and regulations that enhance teacher harmony and satisfaction. Effective procedures must be articulated to govern issues relating to teacher well-being, happiness, team-work and companionship. These procedures would resolve conflicts that may arise from socio-cultural, political and technological challenges.

This would also include supporting teachers to sequence specific activities and set timelines for their accomplishments. Teachers should be guided on how to organize their responsibilities associated with the teaching, internal verification, workplace assistance, curriculum development contributions, in addition to preparing for classroom delivery and assessment development and grading.

ABC teachers have relatively less consequence concerns indicating that, at this stage of adoption, they are not too worried about how the Q+NOSS-based curriculum would impact their learners, as their self-concerns are relatively higher than task and impact concerns. However, it would be appropriate for the institution to ensure that the Q+NOSS-based curriculum components are quality checked for their currency and occupational relevance. Furthermore, rigorous quality measures should be introduced to review and standardize teacher-developed support resources to ensure they are scrutinized and are contextually aligned with the industry regulations and workplace practices.

ABC teachers are reported to have highly intense collaboration concerns indicating that they have challenges in coordinating and liaising with their colleagues and subject-matter experts. Teachers should be provided with sufficient and opportunities to collaborate with stakeholders from various industry sectors to enhance their networking capabilities and enrich their knowledge base particularly in regards to their own field of expertize or practice. At a governance level, ABC institute is recommended to establish and implement policies and procedures for effective coordination between teachers across various campuses. Also, ABC institute may facilitate opportunities for teachers to attend workshops and training provided by the qualification regulatory authorities, awarding bodies and industry representatives.

ABC teachers were reported to have highly intense refocusing concerns indicating their dissatisfaction with the current Q+NOSS-based curriculum and intends to suggest considerable changes to the subject-matter. ABC institute should implement policies and procedures that would provide teachers with opportunities to exchange their ideas and suggestions for change, with the curriculum developers on a regular basis. Setting up a collaborative and interactive platform to capture teacher feedback and suggestions for improving the current Q+NOSS-based curriculum would probably enhance the communication between teachers and curriculum developers. This would help teachers to channel their ideas and strategies in ways that would improve the Q+NOSS-based curriculum.

For further research, it is recommended to extend or scale-up this research by including additional vocational education institutions and other critical stakeholders such as learners, vocational curriculum developers and representatives of the regulatory authorities. It would also add immense value to any further study if the perceptions and concerns of employers are investigated to get a holistic picture of any vocational educational innovation.

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6.6 Research Contributions

This research and its subsequent findings have advanced several contributions to the wider educational research community in general and the vocational education research landscape in particular. The research findings contribute to three key areas namely a) literature, b) methodology, and c) policymaking.

6.6.1 Contribution to the literature

This research is one of the first few studies that investigates the social and emotional life world of vocational educators in the UAE. There has been no studies until date that has explored the social and emotional characteristics of vocational teachers, especially their feelings and attitudes in response to adopting educational innovations. The research community in the UAE for long appears to have ignored the most critical stakeholder of any educational reforms – teachers. There could be a range of restrictions in investigating the personal, social, and emotional dimensions of the teachers. Administrative approval, ethical concerns, information privacy, organizational sensitivity and socio-cultural organizational traits are few of them. There have been very few studies undertaken to explore the vocational education landscape of the UAE. Of these studies undertaken, most of them are of evaluative nature, assessing the quality of curriculum components or their employability and transferability potentials. Since 2010, UAE has been instrumental in introducing large-scale educational reforms, work-based education and related transformation initiatives. However, the volume and quality of research studies exploring the concerns and perceptions of stakeholders are not explored in proportion to these reforms.

Considering the above-mentioned aspects that underline the dearth of literature in the field of vocational education, the author considers that this research and its findings are a valuable

contribution to the education system, and specifically the vocational education community in the UAE. This research describes the reformed Q+NOSS curriculum by dissecting its strategic, architectural and implementation components. The five strands of learning (knowledge, skills, autonomy and responsibility, role in context, and self-development) of the new qualification framework are described by aligning them an actual qualification unit to better inform practitioners and future researchers. The relationship between the Q+NOSS intentions and the actual taught curriculum documents used by the teachers for their teaching activities is described in details. The researcher considers that these findings would greatly inform future studies focusing vocational educators and particularly UAE educators. This research could be considered as a stepping-stone to further understand a greater part of the vocational education management lifecycle. The newly introduced (general) qualification framework, the vocational qualification system (Q+NOSS), development of the qualification units, development of the enacted or taught curriculum, and teacher support resources – all of these are explored in details in this research. Future researchers would find these as a knowledge to further investigate topics such as those focusing the curriculum development dynamics, intended-enacted curriculum gaps (in terms of the subject matter), and implementation and institutionalization challenges. Furthermore, this research provides insights into the various aspects of the vocational education system of the UAE and its governance structures. This would to a greater extent inform both the internal (UAE-based) and external researchers about the roles and power dynamics of qualification regulators, awarding bodies, education providers, institutional leadership, senior academic management, academic management, and teachers in the UAE.

6.6.2 Contribution to Vocational Curriculum Theories

This research has also explored various conceptualizations of curriculum in general and vocational curriculum in particular. A vast majority of studies have conceptualized vocational curriculum drawing from multiple theories informing the conceptualization of vocational curriculum. This research has adopted an eclectic approach to conceptualizing vocational curriculum by drawing from socio-cultural theoretical constructs of vocational knowledge. Future research studies may find this approach useful when conceptualizing vocational knowledge specifically in regards to its theoretical positioning.

6.6.3 Contribution to Practitioners in the UAE

This study also sheds light into the adoption practices of UAE-based vocational teachers, reflecting their socio-cultural practices and personality traits. As the research explores the affective and behavioral characteristics of vocational teachers within the UAE as a geographical context, understanding their feelings, attitudes, and socio-cultural traits are significant to inform future studies. This study illustrates a picture of how a group of teachers responds to a prescribed form of change, or how they react to educational innovations. Future research studies could further explore these responses of vocational teachers and scale up the study to include vocational teachers from other vocational institutes. One of the interesting aspects of this study is the diversity of teachers who have participated in this study. Twenty-eight vocational teachers who participated in this study represent diverse geographies such as the United States, United Kingdom, Australia, New Zealand, Singapore, India, Jordan, Pakistan, Nigeria, Ireland, Canada, and Sudan. These teachers come from various socio-cultural backgrounds, taught under diverse vocational education system and worked

with different occupational domains. They have different viewpoints and perceptions as an individual and attach different meanings to the curriculum. Another interesting factor is the age of participants, which ranges from twenty-eight to fifty five, with different experiences levels as both a teacher and an industry representative. The views and concerns expressed by this multi-cultural and multi-generational group of teachers are insightful reflections in regards to adopting a regulator-sponsored change. The expressions of these teachers carry their worries, frustrations, aspirations, suggestions, and confidence. This research has exposed the actual pains and struggles of vocational teachers as they engage in the adopting a curriculum written by an "outsider". What distinguishes vocational teachers from school and university teachers is their "dual-citizenship". By "dual-citizenship", the researcher refers to world-of-work and the world-of-study, and a vocational teacher in an ideal case is a representative of both the worlds. On one hand, vocational educators are expected to impart curriculum intentions and at the same time, they should be trained on occupational competencies demanded by the industry, which may in most cases differ from what is recommended by the curriculum. This ropewalk and consequent worries contributes to the majority of the concerns as they are reflected in the research findings. This research may be considered as a base reference for future research studies attempting to further drill down the root-cause of these concerns.

6.6.4 Contribution to future research communities in the UAE

This research has been carried out in ABC institute, one of the largest and first government vocational institutes in the UAE. There has been a range of challenges in choosing a government institute as a case for educational research. The researcher's previous employment with ABC institute and current employment with the federal regulator – both have contributed to the challenge

in regards to collecting research data. On one hand, as a federal regulatory representative, it is critical to gain official permission from concerned authorities to conduct research in other government institutions considering factors such as a conflict of interest and political dynamics. This research sheds some light into the management of administrative hurdles pertaining to gaining permission from one's current employer and obtaining access from your target research sites (ABC institute in this research). As a researcher, a proactive approach to managing access permission was adopted considering the socio-political nature of the governance systems in the UAE. The main purpose of the research, the confidentiality and data integrity aspects, the transparency of collected data and analysis report were clearly communicated to key authority representatives. Researcher visited the site regularly to meet key decision makers of both federal and government entities and clearly communicated the intentions of the research and the level of confidentiality maintained as part of the ethical considerations. In addition to challenges relating to gaining permission or access to teachers, this study also faced initial resistance from vocational teachers. As the researcher represented a federal regulatory authority, some teachers were a bit reluctant in expressing their concerns openly. They feared that this research process also included some kind of evaluation or monitoring. These kinds of doubts and apprehensions were cleared by individually explaining the teachers the purpose of the research, ethical consent, confidentiality of their demographical data, use of pseudonyms, and interpretation of their responses. It was made clear in writing that their responses are not collected for any official evaluation purposes and will not be shared with the regulatory authorities that may positively or negatively affect their jobs. Future studies planning to conduct research in the federal and government institutions may find this very useful.

6.6.5 Contribution to methodological approaches

As discussed in earlier chapters, this research was informed by the concerns theory underpinning the CBAM, which guided the adoption of mixed methods approach. A majority of the CBAM-based research studies carried out during the last decade focused on exploring the concerns of schools teachers, and their adoption practices in response to respective educational reforms. In one of the few studies where CBAM as a theory is used, Saunders (2012) adopted both LoU and SoC diagnostic constructs to investigate the concerns of twenty-seven vocational teachers in Western Australia. The focus of Saunder's research was to explore vocational teachers' concerns in response to effect of a newly introduced professional development program. Furthermore, a comprehensive review of the literature demonstrates that most of the CBAM-based research studies were found to investigate teachers' concerns by adopting only one of the diagnostic constructs – the SoCQ.

This research distinguishes itself in regards to the usage of the concerns theory and the subsequent adoption of the research methodology. Firstly, this research not only used both the diagnostic constructs of CBAM (SoCQ and LoU), but also extended the use of individual diagnostic constructs. The stages of teachers' concerns were not determined purely from the sole usage of the SoC Questionnaire and its results, as found in other studies. Rather, this research adopted two separate procedures for assessing teachers' concerns, drawing from Hord et al (2014) recommendation of using multiple procedures for assessing teacher concerns. This research assessed the views and concerns of ABC teachers by administering the SoCQ (questionnaire) and facilitating a semi-structured interview. A semi-structured interview was adopted considering the fact that face-to-face interviews stimulate the teachers to express feelings and concerns (Hord et al 2014). The SoCQ statements were modified to align with the context of this research, were the

standardized term "innovation" used in the online questionnaire was replaced with the term "curriculum change" for purpose of contextualization and enhancing familiarity. These changes to the SoCQ keywords were made after the pilot survey administered with three ABC teachers prior to the start of the data collection process. The researcher's rationale for introducing a semi-structured interview in addition to the SoC Questionnaire was mainly due to number of questions (thirty-five questions). During the pilot interview, participants reported discomfort with answering thirty-five questions even though it was administered online. The researcher defined a set of semi-structured questions as a remedial mechanism so that those questions would not only capture teachers' concerns but also their levels of use (LoU). Considering the issues related to access permission and the nature of the research site, the researcher found that this integrated approach to data collection more appropriate in a controlled environment. As part of the data collection process, ABC teachers were first interviewed to initiate a face-to-face conversation, build a rapport with the participants and to do some ice breaking. Upon completing the semi—structured interview, they were requested to respond to the survey questionnaire online. The researcher used the discussions and exchanges shared during the semi-structured interview process as a means to direct and control the participants in addition to the eliciting their views and concerns. The researcher ensured building a climate of mutual respect and encouraged teachers to voice their opinions by providing them confidence, and at the same time protecting their identify and other demographic characteristics. The researcher utilized the semi-structured interview as a conditioning phase to familiarize participants with the purpose of the research, their commitment to provide valid and reliable responses and the value attached to their responses. Future researchers adopting CBAM-based theories and mixed methods approach may find this strategy useful, especially while conducting research in a constrained environment.

This research also extended the SoCQ diagnostic construct of the CBAM to investigate two relationships, which other research studies have not undertaken at large. Firstly, this research extended the SoCQ results to assess the relationship between the demographic characteristics of teachers and their corresponding concerns. For instance, this research found that teachers who shares a long-term employment with the ABC institute demonstrate less concerns with teachers who are new to the ABC institute. Similarly, teachers who have long-term industry experience exhibited lesser levels of personal and informational concerns than their counterparts who has short-term industry experience, despite their long-term academic experience. These findings are very significant as they expose a number of characteristics and other related factors that needs to be considered while reinforcing educational reforms. Future studies may explore the socio-cultural backgrounds of participants, their demographic characteristics to see their impact on the adoption of educational reforms.

Secondly, this research extended the SoCQ results to analyze the relationship between the concerns. The research analyzed the each individual concerns and correlated it with other set of concerns to observe one's influence on the other. For instance, this research found that there is a strong correlation between overall informational concerns and personal concerns of participants. High level of informational concerns indicates teachers' frustration and emotional worries due to lack of proper information to prepare or execute the curriculum, and this may have detrimental effects on them as individuals. These findings are useful and at the same time present a potential circumstance for future exploration by incorporating socio-cognitive theories with the CBAM. These findings may also be useful to explore teachers' self-efficacy in regards to the adoption of educational innovation.

6.6.6 Contribution to Practitioners:

The findings of this research would be of greater interest to the practitioners (vocational educators and the curriculum developers alike), taking into account the breadth and depth of adoption-oriented challenges presented here. This research has described the new UAE qualification framework and Q+NOSS structure for vocational educators who are relatively new to the UAE educational landscape. It would also be useful for UAE-based vocational educators as it was discovered during the study that a considerable number of teachers were not aware of the key purpose and the basic structure of the Q+NOSS system. The intended-enacted curriculum gap reported by this study would benefit vocational educators to conceive a holistic view of the qualification framework, the learning strands, intended learning outcomes and performance criteria. The highly intense informational and personal concerns of vocational educators at the ABC institute and corresponding expressions of their feelings and attitudes would inform the vocational educators about the overall challenges involved in the adoption process. These findings would encourage them to make remedial strategies to resolve such early-stage concerns and move forward to further exploit the potential of the new Q+NOSS-based curriculum for benefit of the learners. Furthermore, vocational educators could also critically debate the extent to which their industry exposure and academic teaching experience have effect over their concerns, especially when they engage in an adoption process. Regarding the LoU readings, these research findings indicate that eighty-five percentage of teachers are at Level III (Mechanical). ABC teachers may reflect on this reading considering the fact that at Level III, teachers focus most of their efforts on the "short-term, day-to-day use". A combined view, drawing from SoC and LoU indicates that ABC teachers have highly intense informational and personal concerns and operating at Level III. This clearly indicates

that the Q+NOSS curriculum is still at its initiation stage and teachers have not openly embraced it to the level of implementation. These readings may well contribute to devising better implementation strategies for change facilitators and institutional leadership. This research and subsequent findings could act as a gap-analysis report for change facilitators to plan intervention strategies that would address the informational and personal concerns and to encourage more collaboration with other teachers for the refinement of the Q+NOSS-based curriculum.

6.6.7 Contribution to Policymaking

The findings advanced by this research would be a solid baseline reference for qualification regulators and policymakers governing the vocational education systems and related offerings in the UAE. The newly reformed Q+NOSS-based curriculum has been drawn from occupational standards derived from the International Labour Organization (ILO). This research and subsequent findings recommend UAE regulators to consider the newly introduced job classification system being introduced in the country for the purpose of contextualization and alignment with the local market needs. Specifically coming to the findings of the report, VET policymakers could further analyze teachers' informational and personal concerns in addition to other requirements pertaining to teacher representation in curriculum development initiatives. This research calls for formulating appropriate policies that govern teacher-engaged qualification development strategies ensuring industry-experienced teachers' active participation in the developmental activities. These findings also contribute to internal policymakers of ABC institute to articulate policies and procedures to ensure effective internal and external verification to ensure compliance with standards relating to encouraging teacher engagement and maintaining consistency of internal documentation. The highly intense informational and personal concerns of ABC teachers and their level of usage (Level

III) of the Q+NOSS-based curriculum may guide internal quality assurance mechanisms to adopt effective intervention strategies with special focus on planning professional development and awareness training for vocational educators. Internal quality assurance activities may also include consistent interaction between curriculum development team and vocational educators at regular intervals to exchange regulatory requirements and latest industry trends.

Overall, this research and subsequent findings contribute to developmental activities involving stakeholders including researchers, vocational educators, curriculum developers, internal quality assurance team members, internal and external verifiers and policy makers.

6.7 Concluding Statement

This research aimed to investigate the views and concerns of vocational educators as they engage in the process of adopting the newly reformed Q+NOSS-based curriculum in a leading vocational institute in the UAE. The questions posed by this research have been addressed and the findings demonstrated that the vocational teachers have highly intense informational and personal concerns in relation to the activities involved in the adoption of the new curriculum. The results also showed that teachers are at a Level III routine use with the curriculum, indicating that the teachers have still not explored the curriculum to the benefit of the learners. The results of this research emphasize the developmental conceptualization theories and the CBAM framework advanced by Hall et al (2014) and George et al (2013). The concerns of adopters of education innovation are in most occasions are influenced by a variety of administrative, psychological, social and cultural factors. The multi-peak profile demonstrated as a result of the SoCQ survey highlights the different categories of concerns and their relatively higher intensities. ABC teachers are found to have highly

intense informational and personal concerns and at the same time collaboration and refocusing concerns. This alarming state of affairs is a call to change facilitators for immediate intervention strategies. It is interesting to see how this research has captured diverse meanings teachers have attached to the innovation itself. The innovation, within the context of this research is the new Q+NOSS-based curriculum, which surprisingly is not a major concern for a large number of teachers. Change facilitators and institutional leadership plays a major role in implementing and institutionalizing an education innovation by adopting a collaborative approach. Institutional leadership may establish collaboration platforms for different stakeholder groups (teachers, curriculum developers, leadership team, regulatory representatives and internal institutional effectiveness representatives, industry partners, student representatives) to exchange their views about the various intentions and expectations of educational innovations and reforms.

The findings of the research expose the real world problems being encountered by the teachers when they are being subjected to adopt a new curriculum. The highly intense informational and personal concerns as reported by the teachers are mainly due to the lack of a resource management system. The research findings also indicate that the adoption process is perceived by the change facilitators and curriculum developers as a one-off process by viewing them solely as technical deliverables and not part of an ongoing continuous improvement process. The situation is alarming when an experienced vocational teachers complains about lack of proper or consistent information about the new qualification. These results also raises concerns over the process of "initiating" an innovation. This is being discussed in the light of some teachers' concerns over not knowing much about the intentions of the innovation and the high rate of unconcerned teachers. Considering the findings and the alarming rate of "unconcerned" teachers, it would be worthwhile to have a look at the change management process, and especially the initiation and implementation phases

recommended by Fullan (2015). According to Fullan (2015), "initiation is the process leading up to and including the decision to proceed with the implementation". The researcher would want to advance two of the seven factors Fullan (2015) has proposed which are crucial to the initiation of educational changes – a) access to innovation and b) teacher advocacy. The rationale for advancing these two factors is its contextual relevance with the research and considering the highly intense informational and personal concerns exhibited by the ABC teachers. With regards to the information access, Fullan (2015) emphasize the need for advocators of innovations to "spend large amount of time at conferences and workshops with ongoing professional networks of communication their among peers". Access to information depends on "the infrastructure of communication" (Fullan 2015) which involves "ease of transportation and resources". Change facilitators at the ABC institute need to shift their focus towards to establish effective roadmaps to enhance this "infrastructure of communication" and thereby facilitating access to innovation using technology and other platforms. When it comes to "teacher advocacy", Fullan (2015) argues for the creation of what he refers to as the "professional capital", which is a direct outcome of teacher collaboration and information exchange. ABC leadership may devise effective governance strategies to build this professional capital and encourage a collaborative culture within teachers' field of practice to embrace the challenges accompanied with the educational changes.

Vocational teachers' views and concerns follow a developmental conceptualization path over time. Advocates of educational reforms and institution-based change facilitators can devise effective intervention strategies to enhance the adoption of innovations. Hence, the "focus of facilitation should be on individuals, innovation and the context (Hord et al. 2014).

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Appendix

Appendix A

SoCQ Survey Consent Form

Stages of Concern Questionnaire

A Message from Your Survey Coordinator | Continue to the questionnaire

Dear Participant

Firstly, I appreciate your honesty and willingness to participate in this study.

You are invited to participate in a research study that explores the concerns of vocational teachers as they a new curriculum.

This study is anonymous. We will not be collecting or retaining any information about your identity. Your identity will not be revealed in any publication resulting from this study.

You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about teachers' attitude to the new vocational curriculum.

There are no foreseeable risks involved in participating in this study.

Your survey answers will be sent to a link, where data will be stored in a password protected electronic format. This online application does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous.

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

If you have any questions or concerns about this study or if any problems arise, please contact 2013121111@student.buid.ac.ae (and at 0556635077).

Consent

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

☑ I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study.

About the Stages of Concern Questionnaire

The purpose of this questionnaire is to determine what people are thinking about when using various programs or practices. It is intended to assess their levels of concerns at various times during the adoption process.

The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years' experience using them. Therefore, **many of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time.** For the completely irrelevant items, please select "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

https://www.sedl.org/concerns/index.ogi

Appendix B

Stages of Concern Questionnaire

Name (optional): _____

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the adoption process.

The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years' experience using them. Therefore, **many of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time.** For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

This statement is very true of me at this time.	0 1 2 3 (4) 5 6 7
This statement is somewhat true of me now.	0 (1) 2 3 4 5 6 7
This statement is not at all true of me at this time.	(0) 1 2 3 4 5 6 7
This statement seems irrelevant to me.	(0) 1 2 3 4 5 6 7

Please respond to the items in terms of **your present concerns,** or how you feel about your involvement with **this** innovation. We do not hold to any one definition of the innovation so please think of it in terms of your own perception of what it involves. Phrases such as "this approach" and "the new system" all refer to the same innovation. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with the innovation.

Thank you for taking time to complete this task.

0	1	2	3	4	5		6	7
Irrelevant	Not true of me now		Somewhat true of me now				Very true of me now	

Circle one number for each item.

1. I am concerned about students' attitudes toward the innovation.	0	1	2	3	4	5	6	7
2. I now know of some other approaches that might work better.	0	1	2	3	4	5	6	7
3. I am more concerned about another innovation.	0	1	2	3	4	5	6	7
4. I am concerned about not having enough time to organize myself each day.	0	1	2	3	4	5	6	7
5. I would like to help other faculty in their use of the innovation.	0	1	2	3	4	5	6	7
6. I have a very limited knowledge of the innovation.	0	1	2	3	4	5	6	7
7. I would like to know the effect of the innovation on my professional status.	0	1	2	3	4	5	6	7
8. I am concerned about conflict between my interests and my responsibilities.	0	1	2	3	4	5	6	7
9. I am concerned about revising my use of the innovation.	0	1	2	3	4	5	6	7
10. I would like to develop working relationships with both our faculty and outside faculty using this innovation.	0	1	2	3	4	5	6	7
11. I am concerned about how the innovation affects students.	0	1	2	3	4	5	6	7
12. I am not concerned about the innovation at this time.	0	1	2	3	4	5	6	7
13. I would like to know who will make the decisions in the new system.	0	1	2	3	4	5	6	7
14. I would like to discuss the possibility of using the innovation.	0	1	2	3	4	5	6	7
15. I would like to know what resources are available if we decide to adopt the innovation.	0	1	2	3	4	5	6	7
16. I am concerned about my inability to manage all that the innovation requires.	0	1	2	3	4	5	6	7

17. I would like to know how my teaching or administration is supposed to change.	0 1 2 3 4 5 6 7
18. I would like to familiarize other departments or persons with the progress of this new approach.	0 1 2 3 4 5 6 7

0	**1**	**2**	**3**	**4**	**5**		**6**	**7**
Irrelevant	Not true of me now		Somewhat true of me now				Very true of me now	

19. I am concerned about evaluating my impact on students.	0 1 2 3 4 5 6 7
20. I would like to revise the innovation's approach.	0 1 2 3 4 5 6 7
21. I am preoccupied with things other than the innovation.	0 1 2 3 4 5 6 7
22. I would like to modify our use of the innovation based on the experiences of our students.	0 1 2 3 4 5 6 7
23. I spend little time thinking about the innovation.	0 1 2 3 4 5 6 7
24. I would like to excite my students about their part in this approach.	0 1 2 3 4 5 6 7
25. I am concerned about time spent working with nonacademic problems related to the innovation.	0 1 2 3 4 5 6 7
26. I would like to know what the use of the innovation will require in the immediate future.	0 1 2 3 4 5 6 7
27. I would like to coordinate my efforts with others to maximize the innovation's effects.	0 1 2 3 4 5 6 7
28. I would like to have more information on time and energy commitments required by the innovation.	0 1 2 3 4 5 6 7
29. I would like to know what other faculty are doing in this area.	0 1 2 3 4 5 6 7
30. Currently, other priorities prevent me from focusing my attention on the innovation.	0 1 2 3 4 5 6 7
31. I would like to determine how to supplement, enhance, or replace the innovation.	0 1 2 3 4 5 6 7
32. I would like to use feedback from students to change the	0 1 2 3 4 5 6 7

program	
33. I would like to know how my role will change when I am using the innovation.	0 1 2 3 4 5 6 7
34. Coordination of tasks and people is taking too much of my time.	0 1 2 3 4 5 6 7
35. I would like to know how the innovation is better than what we have now.	0 1 2 3 4 5 6 7

Appendix C

LoU Interview Questions

1. Having finished teaching this term, what do you feel about the overall experience? Are you feeling a sense of achievement?

2. Do you think the unit was appropriate to the level taught?

3. Where you briefed about how to use the curriculum, some sort of orientation to help yourself with the details of the PCs and Los?

4. What about teaching materials, activities and assessments? Were they all provided as part of the curriculum?

5. How many units did you teach last term?

6. Do you think you had sufficient time to manage all these units?

7. After teaching a curriculum unit for the first time here, what effect it has on you and your students? Do you think what your students have learned could be applied in the workplace?

8. How did you determine that the students have learned something new?

9. Do you try different methods depending on the unit you teach? Did you adopt any new techniques to teach this unit?

10. Did it go well? What was the students' feedback about your teaching style? Was it a formal evaluation?

11. Do you ever talk to your colleagues about the new unit? What do you tell them?

12. As you look ahead to later this year, for the next term, what plans do you have in relation to your use of the unit?

13. Do you think that this unit requires to be revised completely in terms of the Los and PCs?

14. If so, what are you doing in regards to such major revisions?

15. Do you have anything more to say?